Online Study Materials on

CHEMICAL AND BIOLOGICAL WEAPON SYSTEMS REDUCTION AND CONTROL FOR PEACE

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CHEMICAL AND BIOLOGICAL WEAPONS

Background and Description

Chemical and biological weapons were defined by the United Nations Commission for Conventional Armaments in 1948 as weapons of mass destruction. In spite of that, for many years little was said about such weapons in the United Nations except in the context of general disarmament. This was partly because these categories of weapons had not been used in the Second World War and in part because concern was growing about atomic weapons.

The first General Assembly resolution devoted specifically to the question of chemical and biological weapons was adopted in 1966 (resolution 2162 B (XXI)), and the question of "Chemical and bacteriological warfare" was first taken up in 1968 as a distinct issue by the Eighteen-Nation Committee on Disarmament (the multilateral negotiating body in Geneva at that time). Also in 1968, by a further resolution (2454 A (XXIII)), the General Assembly requested the Secretary-General to prepare an expert study on the question, and the following year he submitted a report entitled *Chemical and Bacteriological* (*Biological*) *Weapons and the Effects of Their Possible Use* to the General Assembly. Among the conclusions of that study, the following are particularly significant:

- All weapons are destructive of human life, but chemical and bacteriological (biological) weapons stand in a class of their own as armaments which exercise their effects solely on living matter;
- The fact that certain chemical and bacteriological (biological) agents are potentially unconfined in their effects, in both space

and time, and that their large-scale use could conceivably have deleterious and irreversible effects on the balance of nature adds to the sense of insecurity and tension which the existence of this class of weapons engenders;

- The potential for developing an armoury of chemical and bacteriological (biological) weapons has grown considerably since the Second World War, not only in terms of the number of agents, but also in the toxicity and diversity of their effects, and no system of defence, even for the richest countries in the world, at whatever cost, could be completely secure from a chemical attack;
- Once any chemical or bacteriological (biological) weapon has been or is used in warfare, there would be a serious risk of escalation, both in the use of more dangerous weapons belonging to the same class and in the use of other weapons of mass destruction;
- A particular danger also derives from the fact that most countries could develop or acquire a capability in this type of weaponry, and thus the danger of proliferation of this class of weapons applies as much to developing as to developed countries;
- Because chemical and bacteriological (biological) weapons are unpredictable in the scale of duration of their effects and because no certain defence can be planned against them, their universal elimination would not detract from any nation's security;
- The momentum of the arms race would clearly decrease if the production of these weapons were effectively and unconditionally banned.

Since ancient times, customary precepts have widely been understood to (exclude certain methods of warfare. As the Roman jurists declared: "War is to be waged with weapons, not with poison" (*Armies bella non venenis geri*). This tradition is reflected in modern times, in particular in the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, commonly known as the Geneva Protocol of 1925. Proscription of the use in war of chemical and biological weapons could now be said to have evolved into a precept of international customary law. More recently, the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, also known as the biological weapons

Convention, which entered into force in 1975, has further dealt with the bacteriological (biological) and toxin weapons aspect of the problem, which was its simpler aspect and more amenable to solution.

Since the early 1970s, many resolutions on chemical weapons, several of which call for a chemical weapons convention similar to that on biological weapons, have been adopted by the General Assembly. When the United Nations expert study was written in 1969, only a very few countries were known to possess chemical weapons in military significant quantities. Today, not only has the number possessing the capacity to produce them increased considerably, but the actual hostile use of certain chemicals, most recently in the Iran-Iraq conflict, have caused great concern. The use of such weapons in the Iran-Iraq conflict has been reported by the Secretary-General in a number of documents S/16433, S/17127 and Add. 1, S/17911 and Corr. 1 and Add. 1 and 2, and S/18852 and Corr. 1 and Add. 1. Furthermore, many additional countries able to manufacture rudimentary chemical weapons could now reportedly also produce nerve agents — known as "second-generation" weapons—should they decide to do so.

The nerve agents (tabun, sarin, soman, etc.) have a degree of lethality which is hundreds of times greater than the first generation agents used extensively in the First World War, which even then caused some 1,300,000 casualties, of which more than 100,000 were fatal. Second-generation weapons have much greater range and flexibility than first-generation weapons. Furthermore, binary nerve agents have now been developed. Binary chemical weapons are composed of two active components, each of which is not highly toxic, but which, when mixed automatically, either in a shell after it has been fired or upon impact, form a nerve agent with a very high degree of lethality.

The Geneva Protocol of 1925

The efforts to ban chemical weapons date back to the 1874 Brussels Declaration, which prohibited the use of poisons and poisoned bullets in warfare. A subsequent declaration, which was signed at the Hague Conference of 1899, condemned "the use of projectiles the sole object of which is the diffusion of asphyxiating or deleterious gases".

After the First World War, in which extensive use of chemical weapons led to widespread public condemnation, efforts were intensified. On 17 June 1925, the Geneva Protocol, which prohibits "the use in war of asphyxiating, poisonous or other gases, and of all analogous liquids, materials or devices", as well as "the use of bacteriological methods of

warfare", was signed. Ever since, the ban on the use of chemical and biological weapons of the Protocol has been the point of departure of efforts to achieve a comprehensive accord including also the prohibition of their development, production, possession and stockpiling. As of 31 December 1986, the Protocol had 110 States parties, although many of them maintain reservations, in particular covering the possible use of such weapons in retaliation, if they are used against the party concerned. The Protocol has no verification or control provisions.

By defining lethal chemical and bacteriological (biological) weapons in 1948 as weapons of mass destruction, the United Nations enhanced the status of the 1925 Protocol, and it has repeatedly called on all States which have not yet done so to adhere to it and has strongly endorsed its principles and purposes. The General Assembly has given strong support to efforts aimed at achieving a consensus on a broad application of the Geneva Protocol as well as at strictly interpreting the gradually evolving, customary rules of international law that relate to the prohibition of the use of chemical and bacteriological weapons. Such support is to be expected in the world Organisation, as the Protocol reflects a world-wide consensus.

The General Assembly, for example, has repeatedly reaffirmed the need for strict observance of the Protocol's objectives by all States. In recent years, it has adopted resolutions calling upon the Secretary-General to arrange for the elaboration of specific procedures to uphold the authority of the Protocol. These initiatives have been taken as a result of several reports on the alleged use of chemical weapons, which the United Nations has investigated, beginning in 1981.

Furthermore, in 1984 a group of specialists commissioned by the Secretary-General unanimously concluded that chemical weapons had been used in the Iran-Iraq conflict, as previously mentioned, and identified the types of chemical agents involved. In case of future reports of use of chemical weapons, the Secretary-General remains in a position to commission similar investigations.

Finally, during the last 15 years, the United Nations has moved the question of chemical and bacterological (biological) weapons—especially the chemical weapons aspect following conclusion of the biological weapons Convention—to the forefront of its non-nuclear disarmament deliberations in the First Committee of the General Assembly. Similarly, it has been at the forefront, in recent years, of the non-nuclear issues on the annual agenda of the Conference on Disarmament (the single, multilateral negotiating body of the international community, which

consists of 40 member States and meets at Geneva). In these efforts, it has been generally accepted that a future international agreement on chemical weapons will complement the scope of the two instruments thus far achieved. The 1969 United Nations study, then, marked the beginning of work that has continued to the present. Resolutions reiterating the importance of upholding the Geneva Protocol have been passed as recently as the 1986 session of the General Assembly.

All these actions have significantly helped to ensure the general fulfilment of the goals of the Protocol and to lay the basis for a further, verifiable international instrument which, by banning chemical weapons, would effect a comprehensive solution to all aspects of the chemical and bacteriological (biological) weapons issue.

Moving Beyond the Goal of the Geneva Protocol

Among the points that had to be faced in pursuing the goal of a comprehensive ban on chemical and bacteriological (biological) weapons was the question, which arose in the late 1960s, of whether those weapons should be considered jointly (as was the case in the Geneva Protocol) or treated separately. After agreement was reached that the two should be dealt with independently, negotiations quickly led to agreement on a biological weapons convention, which was endorsed by the General Assembly in December 1971. The Convention was opened for signature on 10 April 1972 and entered into force on 26 March 1975, upon ratification by the twenty-second Government. At the end of 1986, 107 States were parties to it.

The biological weapons Convention, besides recognising the continuing importance of the Geneva Protocol and of adherence thereto by its parties, has been widely recognised as a first step towards a similar agreement on chemical weapons and affirms the undertaking by its parties to continue negotiations to that end. The Convention goes well beyond the Protocol by prohibiting the development, production and stockpiling of the various classes of weapons it covers and setting out certain complaint and control procedures (articles V and VI). It also goes beyond any other arms limitation agreement reached to date by requiring parties to undertake the complete destruction or diversion to peaceful uses of such weapons within nine months of assuming their obligations. Thus, the Convention is often singled out as the only example of negotiated disarmament achieved thus far under the general auspices of the United Nations.

The operation of the biological weapons Convention has been reviewed twice, in 1980 and 1986, at conferences of the States parties

convened to ensure that the purposes and provisions of the Convention are being realised. Both Review Conferences concluded with the adoption, by consensus, of final declarations and were accordingly regarded as successful.

The Second Review Conference, which took place at Geneva from 8 to 26 September 1986, showed in particular the importance that States parties attach to strengthening the authority of the Convention. The most controversial aspects of the review surrounded, first, articles V and VI, focusing on the question of the adequacy of the existing complaints and control provisions and, secondly, articles I to III, on the basic prohibitions, and whether there was any doubt regarding full compliance with the Convention. With regard to article V, the Conference took into account the views expressed, and it set out procedures to be followed in the framework of a consultative meeting. In addition, it agreed on the exchange of data and information to preclude ambiguities or doubts which might arise and to improve international co-operation in peaceful biological activities. A meeting of scientific and technical experts from States parties was held in the spring of 1987, at which the modalities for this data exchange, including forms to be used for the purpose, were finalised. In addition, the Review Conference recognised the importance of concluding a chemical weapons ban, a point made in the preamble and in article IX of the Convention, and the participating parties reiterated their strong commitment to that goal.

Fact Sheet No. 50 of this series covers the biological weapons Convention and the Second Review Conference in some detail and reproduces its Final Declaration. Since 1971, the discussions on the question of chemical weapons have involved a number of complex matters, such as verification, the scope of a prohibition, the pace of its total implementation and the relationship between the Geneva Protocol and a new legal instrument. From 1972 onwards, numerous proposals and working papers have been considered in the multilateral negotiating body in Geneva, including the complete texts of draft conventions and elements of such instruments. Also, each year the General Assembly has adopted resolutions expressing the need for multilateral negotiations to continue as a matter of high priority, with a view to reaching early agreement on a comprehensive and effective convention. The main aim of the negotiations has been an agreement to prohibit development, production and stockpiling and to lead to the destruction of all lethal chemical weapons, at the very least. At its first special session on

disarmament, in 1978, the Assembly stated in its Final Document that it considered the conclusion of such an instrument to be one of the most urgent undertakings for the negotiating body.

Parallel to the multilateral negotiations, the Soviet Union and the United States, between 1974 and 1980, conducted bilateral negotiations on the question, and in 1979 and 1980 the two countries submitted substantial reports to the multilateral negotiating body in Geneva on the progress they had achieved. They held no further talks, however, for several years thereafter.

A significant development in 1980 was the decision of the Geneva body to establish a subsidiary *ad hoc* working group on chemical weapons, with a mandate to define, through substantive examination, issues to be dealt with in the negotiation of a multilateral chemical weapons convention. In 1981, the *ad hoc* Working Group, which was re-established, set out 18 draft "elements" for inclusion in such a convention. Those elements concerned, for instance, definitions and criteria; declaration of stocks and production facilities; destruction and dismantling; verification of compliance; and the proposed treaty's relationship with other treaties.

In 1982, at its second special session on disarmament, the General Assembly recorded no tangible progress concerning chemical weapons, despite widespread recognition of the urgent need to deal with the question. At that session the USSR, however, submitted a document on the basic provisions of a convention banning such weapons. Two years later, in 1984, the United States submitted a full text of a "Draft Convention on the Prohibition of Chemical Weapons".

Bilateral consideration of the question was resumed at the November 1985 summit meeting between General Secretary Gorbachev and President Reagan. On that occasion, the two leaders submitted a joint statement reaffirming their commitment to a convention, thus creating a positive atmosphere to accelerate further efforts aimed at an international agreement. The relevant part of the text reads:

> "In the context of discussing security problems, the two sides reaffirmed that they are in favour of a general and complete prohibition of chemical weapons and the destruction of existing stockpiles of such weapons. They agreed to accelerate efforts to conclude an effective and verifiable international convention on this matter."
>
> "The two sides agreed to intensify bilateral discussions on the level of experts on all aspects of such a chemical weapons ban, including the

question of verification. They agreed to initiate a dialogue on preventing the proliferation of chemical weapons."

The need for concurrence of the major Powers continues to be recognised as essential to any truly effective multilateral instrument.

Multilateral Negotiations on Chemical Weapons since 1984

Since the Soviet Union's submission of basic elements of a future instrument and the United States'submission of a draft convention, the negotiations in the Conference on Disarmament on a comprehensive ban on chemical weapons have intensified.

In 1984, the Conference's *Ad Hoc* Committee on Chemical Weapons was able to agree on a preliminary structure for a convention, producing a document to be used as the basis for further negotiations on the scope of the convention, definitions of chemical agents and precursors (chemical reagents that take part in the production of toxic chemicals), and the machinery to ensure compliance. As certain fundamental disagreements persisted, particularly on the question of verification, the document was received with guarded optimism, an attitude reflected in the debate in the General Assembly and its First Committee that year.

During the 1985 negotiations, some progress was achieved in clarifying the areas of disagreement. The General Assembly again debated the issue and adopted three resolutions, all dealing with the prohibition of chemical weapons. They shared the feature of urging intensive, accelerated efforts in the Conference on Disarmament to reach an agreement on a ban.

The negotiations in the Conference on Disarmament opened in a more optimistic atmosphere in 1986, with both the USSR and the United States reaffirming their commitment to accelerate the work towards an effective and verifiable convention. The *Ad Hoc* Committee made substantive progress of a political nature but was unable to resolve all the outstanding differences in four areas related to verification and control: declaration and monitoring of stocks; elimination of production facilities; prevention of the possible misuse of the chemical industry in the future; and inspection by challenge. However, optimism prevailed and the negotiations were intense and clearly focused throughout the Conference's 1986 proceedings. Furthermore, the two major powers held concurrent bilateral talks with a view to finding mutually acceptable solutions.

That year the General Assembly adopted three further resolutions on the subject (resolutions 41/58 B, C and D), one of them by consensus. All three endorsed the ongoing efforts of the Conference on Disarmament and urged it to further intensify efforts to conclude a draft convention. One of the resolutions, in addition, called for compliance with existing international obligations regarding prohibitions on chemical and biological weapons and condemned actions contravening those obligations.

During 1987, further progress was achieved and registered in the report of the *Ad Hoc* Committee of the Conference on Disarmament. Agreement was reached that all chemical weapons would be destroyed, which means that no chemical warfare agents could be diverted to other uses. There also emerged an understanding among most of the major negotiating parties that all chemical weapons should be fully declared, also by location, and verified when the convention enters into force. Furthermore, provisions were drafted for the verification, closure and elimination of production facilities.

New efforts were taken to find a solution to the problem of preventing the clandestine production of chemicals for weapons purposes without creating undue complications for the chemical industry. With regard to the sensitive problem of international on-site inspection by challenge, political progress was noted, as understanding that there should be no right of refusal in the case of a challenge seemed close at hand. Several elements of the challenge inspection process appeared to have been agreed upon. Moreover, new consideration of the institutional aspects of a future convention showed promising progress.

Although some political questions were not completely resolved, relating for instance to disparity in size and composition of stocks the order of destruction and the decision-making process of the treaty's implementation mechanisms, work in 1987 indicated that most of the remaining problems are mainly legal and technical. The *Ad Hoc* Committee, however, still has a number of difficult problems to settle, such as the detailed process of challenge inspection, the design of the new international authority to be created under the convention, details with regard to the order of destruction of chemical weapons, definitions problems especially related to the question of jurisdiction and control, and control arrangements for the chemical industry. Finally, the questions of technological and economic co-operation and assistance have yet to be substantially dealt with. The general impression, however, remains that the encouraging progress achieved so far through the active

participation of a number of delegations to the Conference on Disarmament seems to have brought a convention within reach and demonstrates the validity of the multilateral negotiating format within the field of disarmament.

This Fact Sheet is intended to carry the reader through the recent years during which work at the multilateral level on the chemical weapons aspect of the prohibition of chemical and biological weapons has very substantially intensified. No doubt, further developments can be expected as present negotiations on a comprehensive ban on chemical weapons continue through their "mature" stages.

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PROTOCOL FOR THE PROHIBITION OF THE USE IN WAR OF ASPHYXIATING, POISNOUS OR OTHER GASES, AND THE BACTERIOLOGICAL METHODS OF WARFARE (1925)

Signed at Geneva, June, 17, 1925, Cleared into Force February, 8, 1928

The undersigned plenipotentaries, in the name of their respective Governments:

Whereas the use in war of asphyxiating, poisonous or other gases, and of all alogons liquids, materials or devices, has been justly condemned by the general union of the civilised world ;

Whereas the prohibition of such use has been declared in treaties to which majority of powers of the world are Parties ; and

To the end that this prohibition shall be universally accepted as a part of international law binding alike the conscience and the practice of nations;

Declared

That the High Contracting Parties. so far as they are not already Parties to treaties prohibiting such use, accept their prohibition, agree to extend this prohibition to the use of bacteriological methods of warfare and agree to be bound as between themselves according to the terms of this declaration.

The High Contracting Parties will exert every effort to induce other States accede to the present Protocol. Such accession will be notified to the Government of the French Republic, and by the latter to all signatory and acceding vers. and will take effect on the date of the notification by the Government be French Republic.

The present Protocol, of which the French and English texts are both hentic, shall be ratified as soon as possible. It: shall bear today's date.

The ratifications of the present Protocol shall be addressed to the Government be french Republic, which will at once notify the deposit of such ratification each of the signatory and acceding powers.

The instruments of ratification of and accession to the present Protocol will remian deposited in the archives of the Government of the French Republic.

The present, Protocol will conic into force for each signatory power as from state of deposit of its ratification, and. from that moment, each Power will be all as regards other powers which have already deposited their ratifications.

Witness Where of the Plenipotentiaries have Signed the Present Protocol

One at Geneva in a single copy, the seventeenth day of June, One Thousand Hundred and Twenty-Five.

State parties to the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, done at Geneva June 17, 1925

States which have deposited instruments of ratification, accession, or continue to be bound as the result, of succession agreements concluded by them or by reason of notifications given by them to the Secretary-General of the United Nations:

	Argentina—May 12, 1969
1 a b	Australia—Jan 22, 1930,
1 a b	Austria—May 9, 1928
1 a b 2	Barbados
1 a b	Belgium—Dec. 4, 1928
1 a b 2	Botswana
	Brazil—Aug. 28, 1970
1 a b	Bulgaria—Mar. 7, 1934 ,
1 a b 2	Burma
1 a b	Canada—May 6, 1930
	Central African Republic—July 31, 1970
1 a b	Chile—July 2, 1935

	China—Aug. 7, 1929
1 a b	China, Dem. People's Rep.—Aug. 9, 1952
	Cuba—June 24, 1966
	Cyprus—Dec. 12, 1966
1 b	Czechoslovakia—Aug. 16, 1938
	Denmark—May 5, 1930
	Dominican Republic—Dec. 8, 1970
	Ecuador—Sept. 16, 1970
	Egypt—Dec. 6, 1928
1 a b	Estonia—Aug. 28, 1931.
	Ethiopia—Sept, 18, 1935
1 a b	Fiji—Mar. 21, 1973
	Finland—June 26, 1929
1 a b 3	France—May 9, 1926
	Gambia, The—Nov. 16, 1966
	German Democratic Republic
	Germany, Federal Republic of—Apr. 25, 1929
	Ghana—May 3, 1967
	Greece—May 30, 1931
1 a b 2	Guyana
	Holy See—Oct. 18, 1966
	Hungary—Oct. 11, 1052
	Iceland—Nov. 2, 1967
1 a b	India—Apr. 9, 1930
	Indonesia—Jan. 26, 1971
	Iran—July 4, 1929
1 a b	Iraq—Sept, 8, 1931
	Ireland—Aug. 18, 1930
1 a b	Israel Feb. 20, 1969
	Italy—Apr. 3, 1928
	Ivory Coast—July 27, 1970
	Jamaica—July 31, 1970
	Japan—May 21, 1970
	Kenya—July 6, 1970
1 a d	Kuwait—Dec. 15, 1971

	Latvia—June 3, 1931
	Lebanon—Apr. 17, 1969
	Lesotho—Mar. 15, 1972
	Liberia—Apr. 2, 1927
1 b d	Libya—Dec. 29, 1971
	Lithuania—June 15, 1933
	Luxembourg—Sept. 1, 1930
	Madagascar—Aug. 12, 1967
	Malawi—Sept. 14, 1970
	Malaysia—Dec. 10, 1970
	Maldives—Jan. 6, 1967
	Malta—Oct. 15, 1970
	Mauritius—Jan. 8, 1971
	Mexico—Mar. 15, 1932
	Monaco—Jan. 6, 1967
1 b	Mongolia—Dec. 6, 1968
	Morocco—Oct. 13, 1970
	Nepal—May 9, 1969
1 c 4	Netherlands—Oct. 31, 1930
1 a b	New Zealand—Jan. 22, 1930
	Niger—Apr. 19, 1967
1 a b	Nigeria—Oct. 15, 1968
	Norway—July 27, 1932
	Pakistan—June 9, 1960
	Panama—Dec. 4, 1970
	Paraguay—Jan. 14, 1969
	Philippines—May 29, 1973
	Poland—Feb. 4, 1929
1 a b	Portugal—July 1, 1930
1 a b	Romania—Aug. 23, 1929
	Rwanda—June 25, 1964
	Saudi Arabia—Jan. 27, 1971
	Sierra Leone—Mar. 20, 1967
1 a b 2	Singapore
1 a b	South Africa—Jan. 30, 1930

1 a b	Spain—Aug 22, 1929
	Sri Lanka—Jan. 20, 1954
1 a b 2	Swaziland
	Sweden—Apr. 25, 1930
	Switzerland—July 12, 1932
1 d	Syrian Arab Republic—Dec. 17, 1968
	Tanzania—Apr. 22, 1963
	Thailand—June 6, 1931
	Togo—Apr. 5, 1971
	Tonga—July 28, 1971
	Trinidad and Tobago Nov. 30 1970,
	Tunisia—July 12, 1967
	Turkey—Oct. 5, 1929
	Uganda—May 24, 1965
1 a b	U.S.S.R.— Apr. 5, 1928
1 a b 5	United Kingdom—Apr. 9,1930
	Upper Volta—Mar.3, 1971
	Venezuela— Feb. 8, 1928
	Yemen (Sana)—Mar. 17, 1971
1 b	Yugoslavia—Apr. 12, 1929
1 a b 2	Zambia

1 a, b, c, d With reservations to Protocol as follows:

[a]— binding only as regards relations with other parties.

[b]— to cease to be binding in regard to any enemy States whose armed forces or allies do not observe provisions.

[c]— to cease to be binding as regards use of chemical agents with respect to any enemy State whose armed forces or allies do not observe provisions.

[d]— does not constitute recognition of or involve treaty relations with Israel.

[2] By virtue of agreement with former parent State or notification to the Secretary General of the United Nations of succession to treaty rights and obligations upon independence.

[3] Applicable to all French territories.

[4] Applicable to Surinam and Curacao.

[5] It does not bind India or any British Dominion which is a separate member of the League of Nations and does not separately sign or adhere to the Protocol. It is applicable to all colonies.

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CONVENTION ON THE PROHIBITION OF THE DEVELOPMENT, PRODUCTION AND STOCKPILING OF BACTERIOLOGICAL (BIOLOGICAL) AND TOXIN WEAPONS AND ON THEIR DESTRUCTION

Opened for signature at London, Moscow and Washington: 10 April 1972

Entered into force: 26 March 1975

The depositary governments: The Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland and the United States of America

The States Parties to this Convention,

Determined to act with a view to achieving effective progress towards general and complete disarmament, including the prohibition and elimination of all types of weapons of mass destruction, and convinced that the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons and their elimination, through effective measures, will facilitate the achievement of general and complete disarmament under strict and effective international control,

Recognising the important significance of the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on June 17, 1925, and conscious also of the contribution which the said Protocol has already made, and continues to make, to mitigating the horrors of war,

Reaffirming their adherence to the principles and objectives of that Protocol and calling upon all States to comply strictly with them,

Recalling that the General Assembly of the United Nations has repeatedly condemned all actions contrary to the principles and objectives of the Geneva Protocol of June 17, 1925,

Desiring to contribute to the strengthening of confidence between peoples and the general improvement of the international atmosphere,

Desiring also to contribute to the realisation of the purposes and principles of the Charter of the United Nations,

Convinced of the importance and urgency of eliminating from the arsenals of States, through effective measures, such dangerous weapons of mass destruction as those using chemical or bacteriological (biological) agents,

Recognising that an agreement on the prohibition of bacteriological (biological) and toxin weapons represents a first possible step towards the achievement of agreement on effective measures also for the prohibition of the development, production and stockpiling of chemical weapons, and determined to continue negotiations to that end,

Determined, for the sake of all mankind, to exclude completely the possibility of bacteriological (biological) agents and toxins. being used as weapons,

Convinced that such use would be repugnant to the conscience of mankind and that no effort should be spared to minimise this risk, Have agreed as follows:

Article I

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

(1) Microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes;

(2) Weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.

Article II

Each State Party to this Convention undertakes to destroy, or to divert to peaceful purposes, as soon as possible but not later than nine

months after the, entry into force of the Convention, all agents, toxins, weapons, equipment and means of delivery specified in article I of the Convention, which are in its possession or under its jurisdiction or control. In implementing the provisions of this article all necessary safety precautions shall be observed to protect populations and the environment.

Article III

Each State Party to this Convention undertakes not to transfer to any recipient whatsoever, directly or indirectly, and not in any way to assist, encourage, or induce any State, group of States or international organisations to manufacture or otherwise acquire any of the agents, toxins, weapons, equipment or means of delivery specified in article I of the Convention.

Article IV

Each State Party to this Convention shall, in accordance with its constitutional processes, take any necessary measures to prohibit and prevent the development, production, stockpiling, acquisition or retention of the agents, toxins, weapons, equipment and means of delivery specified in article I of the Convention, within the territory of. such State, under its jurisdiction or under its control anywhere.

Article V

The States Parties to this Convention undertake to consult one another and to cooperate in solving any problems which may arise in relation to the objective of, or in the application of the provisions of, the Convention. Consultation and cooperation pursuant to this article may also be undertaken through appropriate international procedures within the framework of the United Nations and in accordance with its Charter.

Article VI

(1) Any State Party to this Convention which finds that any other State Party is acting in breach of obligations deriving from the provisions of the Convention may lodge a complaint with the Security Council of the United Nations. Such a complaint should include all possible evidence confirming its validity, as well as a request for its consideration by the Security Council.

(2) Each State Party to this Convention undertakes to cooperate in carrying out any investigation which the Security Council may initiate, in accordance with the provisions of the Charter of the United Nations, on the basis of the complaint received by the Council. The Security Council shall inform the States Parties to the Convention of the results of the investigation.

Article VII

Each State Party to this Convention undertakes to provide or support assistance, in accordance with the United Nations Charter, to any Party to the Convention which so requests, if the Security Council decides that such Party has been exposed to danger as a result of violation of the Convention.

Article VIII

Nothing in this Convention shall be interpreted as in any way limiting or detracting from the obligations assumed by any State under the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on June 17, 1925.

Article IX

Each State Party to this Convention affirms the recognised objective of effective prohibition of chemical weapons and, to this end, undertakes to continue negotiations in good faith with a view to reaching early agreement on effective measures for the prohibition of their development, production and stockpiling and for their destruction, and on appropriate measures concerning equipment and means of delivery specifically designed for the production or use of chemical agents for weapons purposes.

Article X

(1) The States Parties to this Convention undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the use of bacteriological (biological) agents and toxins for peaceful purposes. Parties to the Convention in a position to do so shall also cooperate in contributing individually or together with other States or international organisations to the further development and application of scientific discoveries in the field of bacteriology (biology) for prevention of disease, or for other peaceful purposes.

(2) This Convention shall be implemented in a manner designed to avoid hampering the economic or technological development of States Parties to the Convention or international cooperation in the field of peaceful bacteriological (biological) activities, including the international exchange of bacteriological (biological) agents and toxins and equipment for the processing, use or production of bacteriological (biological) agents and toxins for peaceful purposes in accordance with the provisions of the Convention.

Article XI

Any State Party may propose amendments to this Convention. Amendments shall enter into force for each State Party accepting the amendments upon their acceptance by a majority of the States Parties to the Convention and thereafter for each remaining State Party on the date of acceptance by it.

Article XII

Five years after the entry into force of this Convention, or earlier if it is requested by a majority of Parties to the Convention by submitting a proposal to this effect to the Depositary Governments, a conference of States Parties to the Convention shall be held at Geneva, Switzerland, to review the operation of the Convention, with a view to assuring that the purposes of the preamble and the provisions of the Convention, including the provisions concerning negotiations on chemical weapons, are being realised. Such review shall take into account any new scientific and technological developments relevant to the Convention.

Article XIII

(1) This Convention shall be of unlimited duration.

(2) Each State Party to this Convention shall in exercising its national sovereignty have the right to withdraw from the Convention if it decides that extraordinary events, related to the subject matter of the Convention, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other States Parties to the Convention and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.

Article XIV

(1) This Convention shall be open to all States for signature. Any State which does not sign the Convention before its entry into force in

accordance with paragraph (3) of this Article may accede to it at any time.

(2) This Convention shall be subject to ratification by Signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of the United States of America, the United Kingdom of Great Britain and Northern Ireland and the Union of Soviet Socialist Republics, which are hereby designated the Depositary Governments.

(3) This Convention shall enter into force after the deposit of instruments of ratification by twenty-two Governments, including the Governments designated as Depositaries of the Convention.

(4) For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Convention, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

(5) The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or of accession and the date of the entry into force of this Convention, and of the receipt of other notices.

(6) This Convention shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

Article XV

This Convention, the English, Russian, French, Spanish and Chinese texts of which are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of the Convention shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.

List of Signatories and Parties

(i) Signatures affixed on the original of the Treaty deposited with the Governments of the: Union of Soviet Socialist Republics (*M*), United Kingdom of Great Britain and Northern Ireland (*L*), and United States of America (*W*).

(ii) Instruments of ratification, accession (a) or succession (*s*) deposited with the Governments of the: Union of Soviet Socialist Republics (*M*) United Kingdom of Great Britain and Northern Ireland (*L*) and United States of America (*W*).

State (i)		*Signature*	*(ii) Deposit*
Afghanistan	(*M*)	10 April 1972	*
	(*L*)	10 April 1972	26 March 1975
	(*W*)	10 April 1972	*
Argentina	(*M*)	1 August 1972	_
	(*L*)	3 August 1972	_
	(*W*)	7 August 1972	_
Australia	(*M*)	10 April 1972	5 October 1977
	(*L*)	10 April 1972	5 October 1977
	(*W*)	10 April 1972	5 October 1977
Austria	(*M*)	10 April 1972	10 August 1973[1]
	(*L*)	10 April 1972	10 August 1973[1]
	(*W*)	10 April 1972	10 August 1973[1]
Barbados	(*M*)	*	*
	(*L*)	*	*
	(*W*)	16 February 1973	16 February 1973
Belgium	(*M*)	10 April 1972	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	—
Benin (Dahomey)	(*M*)	*	*
	(*L*)	*	*
	(*W*)	10 April 1972	25 April 1975
Bolivia	(*M*)	*	*
	(*L*)	*	*
	(*W*)	10 April 1972	30 October 1975
Botswana	(*M*)	*	—
	(*L*)	*	—
	(*W*)	10 April 1972	—
Brazil	(*M*)	10 April 1972	27 February 1973
	(*L*)	10 April 1972	27 February 1973
	(*W*)	10 April 1972	27 February 1973
Bulgaria	(*M*)	10 April 1972	19 September 1972
	(*L*)	10 April 1972	2 August 1972
	(*W*)	10 April 1972	13 September 1972
Burma	(*M*)	10 April 1972	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	—
Burundi	(*M*)	10 April 1972	—
	(*L*)	*	—
	(*W*)	10 April 1972	—

State (i)		*Signature*	*(ii) Deposit*
Byelorussian SSR	(*M*)	10 April 1972	26 March 1975
	(*L*)	*	*
	(*W*)	*	*
Cambodia	(*M*)	*	—
	(*L*)	*	—
	(*W*)	10 April 1972	—
Canada	(*M*)	10 April 1972	18 September 1972
	(*L*)	10 April 1972	18 September 1972
	(*W*)	10 April 1972	18 September 1972
Cape Verde	(*M*)	—	*
	(*L*)	—	*
	(*W*)	—	*
Central African Empire (Republic)	(*M*)	*	—
	(*L*)	*	—
	(*W*)	10 April 1972	*
Chile	(*M*)	10 April 1972	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	—
Combodia	(*M*)	—	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	—
Costa Rico	(*M*)	*	*
	(*L*)	*	*
	(*W*)	10 April 1972	17 December 1973
Cuba	(*M*)	12 April 1972	21 April 1976
	(*L*)	*	*
	(*W*)	*	*
Cyprus	(*M*)	14 April 1972	21 November 1973
	(*L*)	10 April 1972	6 November 1973
	(*W*)	10 April 1972	13 November 1973
Czechoslovakia	(*M*)	10 April 1972	30 April 1973
	(*L*)	10 April 1972	30 April 1973
	(*W*)	10 April 1972	30 April 1973
Denmark	(*M*)	10 April 1972	1 March 1973
	(*L*)	10 April 1972	1 March 1973
	(*W*)	10 April 1972	1 March 1973
Dominican republic	(*M*)	*	*
	(*L*)	*	*

State (i)		*Signature*	*(ii) Deposit*
	(*W*)	10 April 1972	23 February 1973
Ecuador	(*M*)	*	*
	(*L*)	*	*
	(*W*)	14 June 1972	12 March 1975
Egypt	(*M*)	10 April 1972	—
	(*L*)	10 April 1972	—
	(*W*)	*	—
El Salvador	(*M*)	*	—
	(*L*)	*	—
	(*W*)	10 April 1972	—
Ethiopia	(*M*)	10 April 1972	26 May 1975
	(*L*)	10 April 1972	26 May 1975
	(*W*)	10 April 1972	26 June 1975
Fiji	(*M*)	*	5 October 1973
	(*L*)	22 February 1973	1 October 1973
	(*W*)	*	4 September 1973
Finland	(*M*)	10 April 1972	4 February 1974
	(*L*)	10 April 1972	4 February 1974
	(*W*)	10 April 1972	4 February 1974
Gabon	(*M*)	*	—
	(*L*)	10 April 1972	—
	(*W*)	*	—
Gambia	(*M*)	2 June 1972	—
	(*L*)	8 August 1972	—
	(*W*)	9 November 1972	—
German democratic republic	(*M*)	10 April 1972	28 November 1972
	(*L*)	*	*
	(*W*)	*	*
Germany, federal republic of	(*M*)	10 April 1972	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	—
Ghana	(*M*)	10 April 1972	*
	(*L*)	*	6 June 1975
	(*W*)	10 April 1972	*
Greece	(*M*)	14 April 1972	*
	(*L*)	10 April 1972	*
	(*W*)	12 April 1972	10 December 1975

State (i)		*Signature*	*(ii) Deposit*
Guatemala	(*M*)	*	*
	(*L*)	*	*
	(*W*)	9 May 1972	19 September 1973
Guinea-Bissau	(*M*)	—	20 August 1976 (a)
	(*L*)	—	*
	(*W*)	—	*
Guyana	(*M*)	*	—
	(*L*)	*	—
	(*W*)	3 January 1973	—
Haiti	(*M*)	*	—
	(*L*)	*	-
	(*W*)	10 April 1972	—
Honduras	(*M*)	*	—
	(*L*)	*	—
	(*W*)	10 April 1972	—
Hungary	(*M*)	10 April 1972	27 December 1972
	(*L*)	10 April 1972	27 December 1972
	(*W*)	10 April 1972	27 December 1972
Iceland	(*M*)	10 April 1972	15 February 1973
	(*L*)	10 April 1972	15 February 1973
	(*W*)	10 April 1972	15 February 1973
India	(*M*)	15 January 1973[2]	15 July 1974[3]
	(*L*)	15 January 1973[2]	15 July l974[3]
	(*W*)	15 January 1973[2]	15 July 1974[3]
Indonesia	(*M*)	20 June 1972	—
	(*L*)	21 June 1972	—
	(*W*)	20 June 1972	—
Iran	(*M*)	10 April 1972	27 August 1973
	(*L*)	16 November 1972	22 August 1973
	(*W*)	10 April 1972	22 August 1973
Iraq	(*M*)	11 May 1972	—
	(*L*)	*	—
	(*W*)	*	—
Ireland	(*M*)	*	*
	(*L*)	10 April 1972[4]	27 October 1972
	(*W*)	10 April 1972[4]	27 October 1972
Italy	(*M*)	10 April 1972	30 May 1975
	(*L*)	10 April 1972	30 May 1975
	(*W*)	10 April 1972	30 May 1975

State (i)		*Signature*	*(ii) Deposit*
Ivory Coast	(*M*)	*	—
	(*L*)	*	. —
	(*W*)	23 May 1972	—
Jamaica	(*M*)	—	*
	(*L*)	—	13 August 1975 (a)
	(*W*)	—	*
Japan	(*M*)	10 April 1972	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	—
Jordan	(*M*)	24 April 1972	30 May 1975
	(*L*)	17 April 1972	27 June 1975
	(*W*)	10 April 1972	2 June 1975
Kenya	(*M*)	—	*
	(*L*)	—	7 January 1976 (a)
	(*W*)	—	*1* January 1976 (*a]*
Korea, republic of	(*M*)	*	—
	(*L*)	10 April 1972[5]	—
	(*W*)	10 April 1972	—
Kuwait	(*M*)	14 April 1972	1 August 1972[6]
	(*L*)	27 April 1972	26 July 1972[6]
	(*W*)	14 April 1972	18 July 1972[6]
Laos	(*W*)	10 April 1972	20 March 1973
	(*L*)	10 April 1972	25 April 1973
	(*W*)	10 April 1972	22 March 1973
Lebanon	(*M*)	21 April 1972	2 April 1975
	(*L*)	10 April 1972	26 March 1975
	(*W*)	10 April 1972	13 June 1975
Lesotho	(*M*)	*	*
	(*L*)	*	6 September 1977
	(*W*)	10 April 1972	*
Liberia	(*M*)	*	—
	(*L*)	14 April 1972	—
	(*W*)	10 April 1972	— ‘
Luxembourg	(*M*)	10 April 1972	23 March 1976
	(*L*)	10 April 1972	23 March 1976
	(*W*)	12 April 1972	23 March 1976
Madagascar	(*M*)	*	—
	(*L*)	13 October 1972	—
	(*W*)	*	—

State (i)		*Signature*	*(ii) Deposit*
Malawi	(*M*)	*	—
	(*L*)	*	—
	(*W*)	10 April 1972	—
Malaysia	(*M*)	10 April 1972	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	—
Mali	(*M*)	*	—
	(*L*)	*	—
	(*W*)	10 April 1972	—
Malta	(*M*)	*	*
	(*L*)	11 September 1972	7 April 1975
	(*W*)	*	*
Mauritius	(*M*)	*	15 January 1973
	(*L*)	*	11 January 1973
	(*W*)	10 April 1972	7 August 1972
Mexico	(*M*)	10 April 1972	8 April 1974
	(*L*)	10 April 1972[7]	8 April 1974
	(*W*)	10 April 1972[7]	8 April 1974
Mongolia, people's republic of	(*M*)	10 April 1972	20 October 1972
	(*L*)	10 April 1972	14 September 1972
	(*W*)	10 April 1972	5 September 1972
Morocco	(*M*)	5 June 1972	—
	(*L*)	2 May 1972	—
	(*W*)	3 May 1972	—
Nepal	(*M*)	10 April 1972	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	—
Netherlands	(*M*)	10 April 1972	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	—
New Zealand	(*M*)	10 April 1972	10 January 1973
	(*L*)	10 April 1972	18 December 1972
	(*W*)	10 April 1972	13 December 1972
Nicaragua	(*M*)	*	*
	(*L*)	10 April 1972	*
	(*W*)	10 April 1972	7 August 1975
Niger	(*M*)	*	*
	(*L*)	*	*

State (i)		*Signature*	*(ii) Deposit*
	(*W*)	21 April 1972	23 June 1972
Nigeria	(*M*)	3 July 1972	20 July 1973
	(*L*)	10 July 1972	9 July 1973
	(*W*)	6 December 1972	3 July 1973
Norway	(*M*)	10 April 1972	23 August 1973
	(*L*)	10 April 1972	1 August 1973
	(*W*)	10 April 1972	1 August 1973
Pakistan	(*M*)	10 April 1972	25 September 1974
	(*L*)	10 April 1972	3 October 1974
	(*W*)	10 April 1972	3 October 1974
Panama	(*M*)	*	*
	(*L*)	*	*
	(*W*)	2 May 1972	20 March 1974
Paraguay	(*M*)	—	*
	(*L*)	—	*
	(*W*)	—	9 June 1976 (a)
Peru	(*M*)	10 April 1972	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	_
Philippines	(*M*)	21 June 1972	*
	(*L*)	10 April 1972	*
	(*W*)	10 April 1972	21 May 1973
Poland	(*M*)	10 April 1972	25 January 1973
	(*L*)	10 April 1972	25 January 1973
	(*W*)	10 April 1972	25 January 1973
Portugal	(*M*)	*	15 May 1975
	(*L*)	*	15 May 1975
	(*W*)	29 June 1972	15 May 1975
Qatar	(*M*)	*	*
	(*L*)	14 November 1972	17 April 1975
	(*W*)	*	*
Romania	(*M*)	10 April 1972	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	—
Rwanda	(*M*)	10 April 1972	20 May 1975
	(*L*)	*	20 May 1975
	(*W*)	10 April 1972	20 May 1975
San Marino	(*M*)	30 January 1973	27 March 1975
	(*L*)	21 March 1973	11 March 1975

State (i)		*Signature*	*(ii) Deposit*
	(*W*)	12 September 1972	17 March 1975
Saudi Arabia	(*M*)	*	*
	(*L*)	*	*
	(*W*)	12 April 1972	24 May 1972
Senegal	(*M*)	*	*
	(*L*)	*	*
	(*W*)	10 April 1972	26 March 1975
Sierra Leone	(*M*)	*	29 June 1976
	(*L*)	24 November 1972	29 June 1976
	(*W*)	7 November 1972	29 June 1976
Singapore	(*M*)	19 June 1972	2 December 1975
	(*L*)	19 June 1972	2 December 1975
	(*W*)	19 June 1972	2 December 1975
Somalia	(*M*)	3 July 1972	—
	(*L*)	*	—
	(*W*)	*	—
South Africa	(*M*)	*	—
	(*L*)	*	—
	(*W*)	10 April 1972	3 November 1975
Spain	(*M*)	*	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	—
SrI Lanka (ceylon)	(*M*)	10 April 1972	—
	(*L*)	10 April 1972	—
	(*W*)	10 April 1972	—
Sweden	(*M*)	27 February 1975	*5* February 1976
	(*L*)	27 February 1975	5 February 1976
	(*W*)	27 February 1975	5 February 1976
Switzerland	(*M*)	10 April 1972[8]	4 May 1976[9]
	(*L*)	10 April 1972[8]	4 May 1976[9]
	(*W*)	10 April 1972[8]	4 May 1976[9]
Syrian Arab Republic	(*M*)	14 April 1972	—
	(*L*)	*	—
	(*L*)	*	—
Tanzanian, United Republic of	(*M*)	*	—
	(*L*)	16 August 1972	—
	(*W*)	*	—
Thailand	(*M*)	*	*
	(*L*)	*	*

State (i)		*Signature*	*(ii) Deposit*
	(*W*)	17 January 1973	28 May 1975
Togo	(*M*)	*	*
	(*L*)	*	*
	(*W*)	10 April 1972	10 November 1976
Tonga	(*M*)	*	*
	(*L*)	*	28 September 1976 (s)
	(*W*)	*	*
Tunisia	(*M*)	10 April 1972	30 May 1973
	(*L*)	10 April 1972	6 June 1973
	(*W*)	10 April 1972	18 May 1973
Turkey	(M)	10 April 1972	25 October 1974
	(*L*)	10 April 1972	4 November 1974
	(*W*)	10 April 1972	5 November 1974
Ukrainian SSR	(*M*)	10 April 1972	26 March 1975
	(*L*)	*	*
	(*W*)	*	*
Union of Soviet Socialist Republics	(*M*)	10 April 1972	26 March 1975
	(*L*)	10 April 1972	26 March 1975
	(*W*)	10 April 1972	26 March 1975
United Arab Emirates	(*M*)	*	—
	(*L*)	28 September 1972	—
	(*W*)	*	—
United Kingdom of Great Britain and Northern Ireland	(*M*)	10 April 1972	26 March 1975
	(*L*)	10 April 1972	26 March 1975[10, 11]
	(*W*)	10 April 1972	26 March 1975[10]
United states of America	(*M*)	10 April 1972	26 March 1975
	(*L*)	10 April 1972	26 March 1975
	(*W*)	10 April 1972	26 March 1975
Venezuela	(*L*)	*	—
	(*W*)	*	—
	(*M*)	10 April 1972	—
[Vietnam, Republic of South][12]	(*M*)	*	—
	(*L*)	*	—
	(*W*)	10 April 1972	—

State (i)		*Signature*	*(ii) Deposit*
Yemen, Arab Republic of	(*M*)	17 April 1972	—
	(*L*)	10 May 1972	—
	(*W*)	10 April 1972	—
Yemen, People's Democratic Republic of (Southern Yemen)	(*M*)	26 April 1972	—
	(*L*)	*	—
	(*W*)	*	—
Yugoslavia	(*M*)	10 April 1972	25 October 1973
	(*L*)	10 April 1972	25 October 1973
	(*W*)	10 April 1972	25 October 1973
Zaire	(*M*)	10 April 1972	*
	(*L*)	*	16 September 1975
	(*W*)	10 April 1972	28 January 1977

— The action has not been taken.
* The action has not been taken with this Depositary.

REFERENCES

1. With the following reservation:

   "Considering the obligations resulting from its status as a permanently neutral state, the Republic of Austria declares a reservation to the effect that its co-operation within the framework of this Convention cannot exceed the limits determined by the status of permanent neutrality and membership with the United Nations.

   "This reservation refers in particular to article VII of this Convention as well as to any similar provision replacing or supplementing- this article."

2. With the following statement:

   "India has stood for the elimination of both chemical and bacteriological (biological) weapons. However, in view of the situation that developed in regard to the discussions concerning biological and chemical weapons, it became possible_ to reach agreement at the present moment on a Convention on the elimination of biological and toxin weapons only. Negotiations would need to be continued for the elimination of chemical weapons also. It has been recognised that, both in regard to the Convention on biological and toxin weapons and in respect of future negotiations concerning chemical weapons, the Geneva Protocol of 1925 should be safeguarded and the inseparable link between prohibition of biological and chemical weapons should be maintained.

"India's position on the Convention on biological and toxin weapons has been outlined in the statements of the representative of India before the Conference of the Committee on Disarmament (CCD) and the First Committee of the General Assembly.

"The Government of India would like to reiterate in particular its understanding that the objective of the Convention is to eliminate biological and toxin weapons, thereby excluding completely the possibility of their use, and that the exemption in regard to biological agents or toxins, which would be permitted for prophylactic protective or other peaceful purposes would not, in any way, create a loophole in regard to the production or retention of biological and toxic weapons. Also, any assistance which might be furnished under the terms of the Convention, would be of medical or humanitarian nature and in conformity with the Charter of the United Nations.

"India's support to the Convention on biological and toxin weapons is based on these main considerations. It is India's earnest hope that the Convention will be adhered to by all States, including all the major Powers, at a very early date."

3. On depositing the instrument of ratification the Government of India stated that their position on the Convention had already been made clear on the occasion of its signature.

4. With the following declaration:

"The accession on 29th August, 1930, of the Government of the Irish Free State to the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, opened for signature at Geneva on 17th June, 1925, was subject to the reservations that they did not intend to assume, by this accession, any obligation except towards States which had signed and ratified this Protocol or which would have finally acceded thereto, and that in the event of the armed forces of any enemy State or of any ally of such State failing to respect the said Protocol, the Government of the Irish Free State would cease to be bound by the said Protocol towards any such State.

"The Government of Ireland recognise that the value of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, which has been signed on their behalf today, could be undermined if reservations made by Parties to the 1925 Geneva Protocol were allowed to stand as the prohibition of possession is incompatible with the right to retaliate. As this Convention purports to strengthen the Geneva Protocol, there should be an absolute and universal prohibition of the use of the weapons in question.

"The Government of Ireland, accordingly, have notified the depositary Government for the 1925 Geneva Protocol of the withdrawal of their reservations to the Protocol. The withdrawal of these reservations applies to chemical as well as to bacteriological (biological) and toxin agents of warfare."

5. With the following statement:

   "The signing by the Government of the Republic of Korea of the present Convention does not in any way mean or imply the recognition of any territory or regime which has not been recognised by the Government of the Republic of Korea as a State or Government."

6. With the following statement:

   "In ratifying the Convention on the Prohibition of Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and their Destruction, 1972, the Government of the Slate of Kuwait takes the view that its ratification of the said Convention does not in any way imply its recognition of Israel, nor does it oblige it to apply the provisions of the aforementioned Convention in respect of the said country."

   "In tendering this 'Understanding' the Government of the State of Kuwait reaffirms its position in accepting the obligations it has undertaken to assume by virtue of its ratification of the said Convention. It also confirms that the last clause of the 'Understanding' does not prejudice the said indivisible obligations."

7. With the following statement:

   "(1) Continues to be convinced that the same reasons which made it advisable to prohibit biological and chemical weapons jointly in the Geneva Protocol of 1925 exist now to strive to pursue identical methods with respect to the prohibition of the development, production and stockpiling of the said weapons, as well as their elimination from the arsenals of all States."

   "(2) Considers that the fact that the Convention now open to signature applies solely to biological and toxin weapons should be understood, as Resolution 2826 (XXVI) of the United Nations General Assembly, to which the Convention is annexed, explicitly indicates, to be merely a first step—the only one which has proved possible to take for the time being— towards an agreement prohibiting also the development, production and stockpiling of all chemical weapons."

   "(3) Makes a note of the fact that the Convention contains an express commitment to continue negotiations in good faith with the aim of arriving at an early agreement on the prohibition of the development, production and stockpiling of chemical weapons and their destruction."

   "(4) Makes a note, furthermore, that the General Assembly, through its Resolution 2827 A (XXVI), has requested the Conference of the Disarmament Committee to continue, as a high priority item, negotiations aimed at promptly reaching the agreement relative to chemical weapons which is being sought; and that, in Resolution 2827 B (XXVI), the General Assembly has urged all States to commit themselves, while the said agreement is being reached, to abstain from all additional development, production and stockpiling of those chemical substances capable of being used as weapons which, on account of their degree of toxicity, have the highest lethal effect and are not useable for peaceful purposes."

"(5) Is convinced that the success of the Convention relative to biological weapons will depend, in the last resort, on the manner in which the commitments under reference are honoured."

8. With the following declaration:

"1. In Switzerland, the Convention will not be submitted to the parliamentary procedure of approval preceding ratification until it has achieved the degree of universality deemed necessary by the Swiss Government."

"2. Owing to the fact that the Convention also applies to weapons, equipment or means of delivery designed to use such biological agents or toxins, the delimitation of its scope of application can cause difficulties since there are scarcely any weapons, equipment or means of delivery peculiar to such use; therefore, Switzerland reserves the right to decide for itself what auxiliary means fall within that definition."

"3. By reason of the obligations of its status as a perpetually neutral State, Switzerland is bound to make the general reservation that its collaboration within the framework of this Convention cannot go beyond the terms prescribed by that status. This reservation refers especially to Article VII of the Convention as well as to any similar clause that could replace or supplement that provision of the Convention (or any other arrangement)."

"On ratification of the aforeaid Convention, the last two declarations will be repeated as formal reservations."

9. The following reservation:

"1. Owing to the fact that the Convention also applies to weapons, equipment or means of delivery designed to use such biological agents or toxins, the delimitation of its scope of application can cause difficulties since there are scarcely any weapons, equipment or means of delivery peculiar to such use; therefore, Switzerland reserves the right to decide for itself what auxiliary means fall within that definition."

"2. By reason of the obligations resulting from its status as a perpetually neutral State, Switzerland is bound to make the general reservation that its collaboration within the framework of this Convention cannot go beyond the terms prescribed by that status. This reservation refers especially to Article VII of the Convention as well as to any similar clause that could replace or supplement that provision of the Convention (or any other arrangement)."

In a note, dated 4 October 1973, addressed to the Swiss Embassy, the Government of the United States of America expressed the following view in connexion with the reservation made by the Government of Switzerland:

"As is stated in the first Swiss reservation, the Convention prohibits the development, production, or stockpiling of weapons, equipment, or means of delivery designed to use the prohibited agents or toxins for hostile purposes or in armed conflict. In the view of the United States Government, this prohibition would apply only to (*a*) weapons, equipment and means of

delivery the design of which indicated that they could have no other use than that specified, and (*b*) weapons, equipment and means of delivery the design of which indicated that they were specifically intended to be capable of the use specified. The Government of the United States shares the view of the Government of Switzerland that there are few weapons, equipment, or means of delivery peculiar to the uses referred to. It does not, however, believe that it would be appropriate, on this ground alone, for States to reserve unilaterally the right to decide which weapons, equipment or means of delivery fell within the definition. Therefore, while acknowledging the entry into force of the Convention between itself and the Government of Switzerland, the United States Government enters its objection to this reservation."

"As provided by Article XIV, paragraph 5, the Government of the United States is informing the States signatory and acceding to the Convention at Washington of the deposit of the ratification by Switzerland and the accompanying reservations."

10. Ratification by the United Kingdom is in respect of the United Kingdom of Great Britain and Northern Ireland, Dominica and Territories under the territorial sovereignty of the United Kingdom, as well as the State of Brunei, the British Solomon Islands Protectorate and, within the limits of United Kingdom jurisdiction therein, the Condominium of New Hebrides.

11. With the following declaration:

"... the provisions of the Convention shall not apply in regard to Southern Rhodesia unless and until the Government of the United Kingdom informs the other depositary Governments that it is in a position to ensure that the obligations imposed by the Convention in respect of that territory can be fully implemented."

Concerning the declaration the Government of the Union of Soviet Socialist Republics expressed the following view:

"The Soviet Government supports the view that the United Kingdom, as has been repeatedly noted in decisions of the General Assembly of the United Nations, bears full responsibility with regard to Southern Rhodesia until the people of that Territory obtain genuine independence. This fully applies also to the aforementioned Convention."

12. The Democratic Republic of Vietnam and the Republic of South Vietnam (the latter of which replaced the Republic of Vietnam) united on 2 July 1976 to constitute the Socialist Republic of Vietnam. At the time of preparing this publication no indication had been received from the Government of the Socialist Republic of Vietnam regarding its position with respect to a possible succession.

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FINAL DECLARATION OF THE FOURTH REVIEW CONFERENCE OF THE PARTIES TO THE CONVENTION ON THE PROHIBITION OF THE DEVELOPMENT, PRODUCTION AND STOCKPILING OF BACTERIOLOGICAL (BIOLOGICAL) AND TOXIN WEAPONS AND ON THEIR DESTRUCTION

The States parties to the convention on the prohibition of the development, production and stockpiling of bacteriological (biological) and toxin weapons and on their destruction, which met in Geneva from 25th November to 6th December 1996 to review the operation of the convention, solemnly declare:

- Their conviction that the Convention is essential to international peace and security;
- Their reaffirmation of their determination to act with a view to achieving effective progress towards general and complete disarmament, including the prohibition and elimination of all types of weapons of mass destruction, and their conviction that the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons and their elimination, through effective measures, will facilitate the achievement of general and complete disarmament under strict and effective international control;
- Their reaffirmation that under any circumstances the use, development, production and stockpiling of bacteriological (biological) and toxin weapons is effectively prohibited under Article I of the Convention;

- Their continued determination, for the sake of mankind, to exclude completely the possibility of the use of bacteriological (biological) agents and toxins as weapons, and their conviction that such use would be repugnant to the conscience of mankind;
- Their reaffirmation of their firm commitment to the purposes of the Preamble and the provisions of the Convention, and of their belief that universal adherence to the Convention would enhance international peace and security;
- Their determination to enhance the implementation and effectiveness of the Convention and to further strengthen its authority, including through the confidence-building measures and agreed procedures for consultations agreed by the Second and Third Review Conferences, and through the fulfilment of the mandate entrusted to the *ad hoc* Group established by the Special Conference in 1994;
- Their recognition that effective verification could reinforce the Convention;
- Their conviction that the full implementation of the provisions of the Convention should facilitate economic and technological development and international cooperation in the field of peaceful biological activities;
- Their recognition that purposes of this Convention include the prohibition of the use of biological weapons as contrary to the purpose of the Convention.

The States Parties recognise that the important principles contained in this Solemn Declaration can also serve as a basis for further strengthening of the Convention.

Preamble

The Conference reaffirms the importance of the elements in review of the Preamble to the Convention contained in the Final Declaration of the Second Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction.

Article 1

1. The Conference notes the importance of Article I as the provision which defines the scope of the Convention. The Conference reaffirms its support for the provisions of this Article.

2. The Conference reaffirms that the Convention prohibits the development, production, stockpiling, other acquisition or retention of microbial or other biological agents or toxins harmful to plants and animals, as well as humans, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes.

3. The Conference reaffirms that the use by the States Parties, in any way and under any circumstances, of microbial or other biological agents or toxins, that is not consistent with prophylactic, protective or other peaceful purposes, is effectively a violation of Article I of the Convention.

4. The Conference reaffirms the undertaking in Article I never in any circumstances to develop, produce, stockpile or otherwise acquire or retain weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict, in order to exclude completely and forever the possibility of their use.

5. The Conference also reaffirms that the Convention unequivocally covers all microbial or other biological agents or toxins, naturally or artificially created or altered, as well as their components, whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes.

6. The Conference, conscious of apprehensions arising from relevant scientific and technological developments, *inter alia,* in the fields of microbiology, biotechnology, molecular biology, genetic engineering, and any applications resulting from genome studies, and the possibilities of their use for purposes inconsistent with the objectives and the provisions of the Convention, reaffirms that the undertaking given by the States Parties in Article I applies to all such developments,

7. The Conference notes that experimentation involving open-air release of pathogens or toxins harmful to man, animals or plants that have no justification for prophylactic, protective or other peaceful purposes is inconsistent with the undertakings contained in Article I.

8. The Conference appeals through the States Parties to their scientific communities to lend their support only to activities that have justification for prophylactic, protective and other peaceful purposes, and refrain from undertaking or supporting activities which are in breach of the obligations deriving from provisions of the Convention.

9. The Conference emphasises, once more, the vital importance of full implementation by all States Parties of all the provisions of the

Convention, especially Articles I, II and III. The Conference agrees that the application by States Parties of positive approaches in accordance with the provisions of the Convention is in the interest of all States Parties and that any non-compliance with its provisions could undermine confidence in the Convention. Non-compliance should be treated with determination in all cases, without selectivity or discrimination.

Article II

1. The Conference recognises that for any State acceding to the Convention after the entry into force of the Convention, the destruction or diversion to peaceful purposes specified in Article II would be completed upon accession to the Convention. The Conference emphasises that the destruction or diversion to peaceful purposes specified in Article II should be carried out completely and effectively.

2. The Conference notes the importance of Article II and welcomes the statements made by States which have become Parties to the Convention since the Third Review Conference that they do not possess agents, toxins, weapons, equipment or means of delivery referred to in Article I of the Convention.

3. The Conference notes that the submission to the Centre for Disarmament Affairs of appropriate information on destruction by States Parties which had stockpiles and have destroyed them in fulfilment of their Article II obligations and which have not already made such submissions could enhance confidence in the Convention and its objectives.

4. The Conference stresses that States which become Parties to the Convention, implementing the provisions of this Article, shall observe all necessary safety precautions to protect populations and the environment.

Article III

1. The Conference notes the importance of Article III and welcomes the statements which States that have acceded to the Convention have made to the effect that they have not transferred agents, toxins, weapons, equipment or means of delivery as specified in Article I of the Convention, to any recipient whatsoever and have not furnished assistance, encouragement or inducement to any State, group of States or international organisations to manufacture or otherwise acquire them. The Conference affirms that Article III is sufficiently comprehensive to cover any recipient whatsoever at international, national or subnational levels.

2. The Conference notes that a number of States Parties stated that they have already taken concrete measures to give effect to their undertakings under this Article and in this context also notes statements made by States Parties at the Conference about the legislative or administrative measures they have taken since the Third Review Conference. The Conference calls for appropriate measures by all States Parties. Transfers relevant to the Convention should be authorised only when the intended use is for purposes not prohibited under the Convention.

3. The Conference discussed the question whether multilaterally-agreed guidelines or multilateral guidelines negotiated by all States Parties to the Convention concerning the transfer of biological agents, materials and technology for peaceful purposes to any recipient whatsoever might strengthen the Convention. In the development of implementation of Article III, the Conference notes that States Parties should also consider ways and means to ensure that individuals or subnational groups are effectively prevented from acquiring, through transfers, biological agents and toxins for other than peaceful purposes. The Conference notes that these issues are being considered as part of the ongoing process of strengthening the Convention.

4. The Conference reiterates that the provisions of this Article should not be used to impose restrictions and/or limitations on the transfers for purposes consistent with the objectives and purposes of the Convention of scientific knowledge, technology, equipment and materials under Article X.

Article IV

1. The Conference underlines the importance of Article IV. It reaffirms the commitment of States Parties to take the necessary national measures under this Article, in accordance with their constitutional processes. These measures are to ensure the prohibition and prevention of the development, production, stockpiling, acquisition or retention of the agents, toxins, weapons, equipment and means of delivery specified in Article I of the Convention anywhere within their territory, under their jurisdiction or under their control, in order to prevent their use for purposes contrary to the Convention. The States Parties recognise the need to ensure, through the review and/or adoption of national measures, the effective fulfilment of their obligations under the Convention in order, *inter alia,* to exclude use of biological and toxin weapons in terrorist or criminal activity.

2. The Conference notes those measures already taken by a number of States Parties in this regard, for example the adoption of penal legislation, and reiterates its call to any State Party that has not yet taken any necessary measures to do so immediately, in accordance with its constitutional processes. Such measures should apply within its territory, under its jurisdiction or under its control anywhere. The Conference invites each State Party to consider, if constitutionally possible and in conformity with international law, the application of such measures also to actions taken anywhere by natural persons possessing its nationality.

3. The Conference notes the importance of:

- Legislative, administrative and other measures designed to enhance domestic compliance with the Convention;
- Legislation regarding the physical protection of laboratories and facilities to prevent unauthorised access to and removal of microbial or other biological agents, or toxins;
- Inclusion in textbooks and in medical, scientific and military education programmes of information dealing with the prohibitions and provisions contained in the Biological and Toxin Weapons Convention and the Geneva Protocol of 1925.

4. The Conference believes that such measures which States Parties might undertake in accordance with their constitutional processes would strengthen the effeativeness of the Convention, as requested by the Second and Third Review Conferences.

5. The Conference notes that some States Parties, as requested by the Second Review Conference, have provided to the United Nations Department for Disarmament Affairs information on the texts of specific legislation enacted or other measures taken to assure domestic compliance with the Convention. The Conference invites these States Parties, and encourages all States Parties, to provide such information and texts in the future. In this regard the Conference welcomes information provided by States Parties in response to the confidence-building measure agreed to at the Third Review Conference entitled "Declaration of legislation, regulations and other measures". In addition, the Conference encourages all States Parties to provide any useful information on the implementation of such measures.

6. The Conference encourages cooperation and initiatives, including regional ones, towards the strengthening and implementation of the Biological and Toxin Weapons Convention regime.

7. The Conference reaffirms that under all circumstances the use of bacteriological (biological) and toxin weapons is effectively prohibited by the Convention.

Article V

1. The Conference notes the importance of Article V and reaffirms the obligation assumed by States Parties to consult and cooperate with one another in solving any problems which may arise in relation to the objective of, or in the application of the provisions of the Convention. The Conference reiterates its appeal to States Parties made at the Third Review Conference to make all possible efforts to solve any problems which may arise in relation to the objective of, or in application of the provisions of the Convention with a view towards encouraging strict observance of the provisions subscribed to. The Conference notes that this Article provides an appropriate framework for resolving any such problems, and reaffirms that any State Party which identifies such a problem should, as a rule, use these procedures to address and resolve it.

2. The Conference also reviewed the operation of the procedures to strengthen the implementation of the provisions of Article V which were adopted in the Final Declaration of the Third Review Conference and which built on the agreements reached at the Second Review Conference. While noting that these procedures have not yet been invoked, the Conference reaffirmed their present validity. The Conference calls on any State Party which identifies a problem arising in relation to the objective of, or in the application of the provisions of the Convention to use these procedures, if appropriate, to address and resolve it.

3. The Conference reaffirms that consultation and cooperation pursuant to this Article may also be undertaken through appropriate international procedures within the framework of the United Nations and in accordance with its Charter.

4. In accordance with the decision of the Third Review Conference, the Conference reviewed the effectiveness of the confidence-building measures as agreed in the Final Declaration of the Third Review Conference. The Conference notes the continued importance of the confidence-building measures agreed upon at the Second and Third Review Conferences, as well as the modalities elaborated by the *ad hoc* Meeting of Scientific and Technical Experts from States Parties to the Convention, held in 1987.

5. The Conference notes the background information document prepared by the United Nations Secretary-General providing data on the participation of States Parties in the agreed confidence-building measures since the Third Review Conference. The Conference welcomes the exchange of information carried out under the confidence-building measures, and notes that this has contributed to enhancing transparency and building confidence. The Conference recognises that participation in the confidence-building measures since the last Review Conference has not been universal, and that not all responses have been prompt or complete. In this regard, the Conference also recognises the technical difficulties experienced by some States Parties with respect to preparing CBM responses. In this regard, the Conference urges all States Parties to complete full and timely declarations in the future. The Conference notes that the *ad hoc* Group of Slates Parties established by the Special Conference in 1994 is, as part of its continuing work, considering the incorporation of existing and further enhanced confidence-building and transparency measures, as appropriate, in a regime to strengthen the Convention.

6. The Conference stresses its determination to strengthen effectiveness and improve the implementation of the Convention, and its recognition that effective verification could reinforce the Convention.

7. In this regard, the Conference recalls that:

- The Third Review Conference established the *ad hoc* Group of Governmental Experts open to all States Parties to identify and examine potential verification measures from a scientific and technical standpoint.
- The Group held four sessions in 1992-1993 and circulated its report to all States Parties in September 1993.
- A Special Conference was held in September 1994 to consider the report, and decided to establish an *ad hoc* Group open to all States Parties. The Conference considered the work of the *ad hoc* Group under agenda item 12 and its conclusions are reflected in the section of this document entitled "Consideration of the work of the *ad hoc* Group established by the Special Conference in 1994".

8. The Conference stresses the need for all States Parties to deal effectively with compliance issues. In this connection, the States Parties had agreed to provide a specific, timely response to any compliance concern alleging a breach of their obligations under the Convention.

Such responses should be submitted in accordance with the procedures agreed upon by the Second Review Conference and further developed by the Third Review Conference. The Conference reiterates its request that information on such efforts be provided to the Review Conferences.

Article VI

1. The Conference notes that the provisions of this Article have not been invoked.

2. The Conference reaffirms the importance of Article VI, which, in addition to the procedures contained in Article V, provides that any State Party which finds that any other State Party is acting in breach of its obligations under the Convention may lodge a complaint with the United Nations Security Council. The Conference notes that the provisions of Article VI will be taken into account, as appropriate, for any future verification regime resulting from the consideration by the *ad hoc* Group of a system of measures to promote compliance with the Convention. The Conference emphasises the provision of Article VI that such a complaint should include all possible evidence confirming its validity. It stresses that, as in the case of the implementation of all the provisions and procedures set forth in the Convention, the procedures foreseen in Article VI should be implemented in good faith within the scope of the Convention.

3. The Conference invites the Security Council to consider immediately any complaint lodged under Article VI and to initiate any measures it considers necessary for the investigation of the complaint in accordance with the Charter. The Conference reaffirms the undertaking of each State Party to cooperate in carrying out any investigations which the Security Council may initiate.

4. The Conference recalls, in this context, United Nations Security Council resolution 620 (1988), which at the time encouraged the United Nations Secretary-General to carry out prompt investigations, in response to allegations brought to its attention by any Member State concerning the possible use of chemical and bacteriological (biological) or toxin weapons that could entail a violation of the 1925 Geneva Protocol or of any other applicable rule of international treaty or customary law. The Conference also recalls the technical guidelines and procedures contained in Annex I of United Nations document A/44/561 to guide the United Nations Secretary-General on the timely and efficient investigation of reports of the possible use of such weapons. The States Parties reaffirm their agreement to consult, at the request of any State

Party, regarding allegations of use or threat of use of bacteriological (biological) or toxin weapons and to cooperate fully with the United Nations Secretary-General in carrying out such investigations. The Conference stresses that in the case of alleged use the United Nations is called upon to take appropriate measures expeditiously, which could include a request to the Security Council to consider action in accordance with the Charter.

5. The Conference invites the Security Council to inform each State Party of the results of any investigation initiated under Article VI and to consider promptly any appropriate further action which may be necessary.

6. The Conference notes that the procedure outlined in this Article is without prejudice to the prerogative of the States Parties to the Convention to consider jointly the cases of alleged non-compliance with the provisions of the Convention and to make appropriate decisions in accordance with the Charter of the United Nations and applicable rules of international law.

7. The Conference notes that provisions for investigating alleged breaches of the Convention, including measures for the investigation of alleged use of biological and toxin weapons, continue to be considered by the Ad Hoc-Group of Slates Parties, in accordance with its mandate.

Article VII

1. The Conference notes with satisfaction that these provisions have not been invoked.

2. The Conference reaffirms the undertaking made by each State Party to provide or support assistance in accordance with the Charter of the United Nations to any Party to the Convention which so requests, if the Security Council decides that such Party has been exposed to danger as a result of violation of the Convention.

3. The Conference takes note of desires expressed that, should a request for assistance be made, it be promptly considered and an appropriate response provided. In this context, pending consideration of a decision by the Security Council, timely emergency assistance could be provided by States Parties if requested.

4. The Conference takes note of the proposal that the *ad hoc* Group might need to discuss the detailed procedure for assistance in order to ensure that timely emergency assistance would be provided by States Parties if requested.

5. The Conference considers that in the event that this Article might be invoked, the United Nations, with the help of appropriate intergovernmental organisations such as the World Health Organisation (WHO), could play a coordinating role.

Article VIII

1. The Conference reaffirms the importance of Article VIII and stresses the importance of the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925.

2. The Conference acknowledges that the 1925 Geneva Protocol, by prohibiting the use of bacteriological methods of warfare, and the Biological and Toxin Weapons Convention complement each other.

3. The Conference reaffirms that nothing contained in the Biological and Toxin Weapons Convention shall be interpreted as in any way limiting or detracting from the obligations assumed by any State under the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare.

4. Noting the actions in support of the Protocol taken by the Security Council and General Assembly of the United Nations, through Security Council resolution 620 (1988) and General Assembly resolutions 41/58 C, 42/37 C, 43/74 A, 44/115 B and 45/57 C and recalling the solemn reaffirmation of the prohibition as established in the Protocol, issued by the Conference of the States Parties to the 1925 Geneva Protocol and other interested States held in Paris from 7 to 11 January 1989, the Conference appeals to all States Parties to the Geneva Protocol to fulfil their obligations assumed under the Protocol and urges all States not yet Parties to the 1925 Geneva Protocol to accede to it without delay.

5. The Conference stresses the importance of the withdrawal of all reservations to the 1925 Geneva Protocol related to the Biological and Toxin Weapons Convention.

6. The Conference welcomes the actions which States Parties have taken to withdraw their reservations to the 1925 Geneva Protocol related to the Biological and Toxin Weapons Convention, and calls upon those States Parties that continue to maintain pertinent reservations to the 1925 Geneva Protocol to withdraw those reservations, and to notify the Depositary of the 1925 Geneva Protocol of their withdrawals without delay.

7. The Conference notes that reservations concerning retaliation, through the use of any of the objects prohibited by the Biological and Toxin Weapons Convention, even conditional, are totally incompatible with the absolute and universal prohibition of the development, production, stockpiling, acquisition and retention of bacteriological (biological) and toxin weapons, with the aim to exclude completely and forever the possibility of their use.

Article IX

1. The Conference reaffirms that Article IX identifies the recognised objective of effective prohibition of chemical weapons. The Conference welcomes conclusion of the Convention on the Prohibition of the Development Production, Stockpiling and Use of Chemical Weapons and on Their Destruction, which was opened for signature on 13-15 January 1993 in Paris.

2. The Conference welcomes the fact that sixty-five instruments of ratification have now been deposited, and that the Convention will therefore enter into force on 29 April 1997.

3. The Conference stresses the importance to the Convention that all possessors of chemical weapons, chemical weapons production facilities or chemical weapons development facilities should be among the original parties to the Convention and, in this context, the importance of the United States of America and the Russian Federation, having declared possession of chemical weapons, being among the original States Parties to the Convention.

4. The Conference calls upon all States that have not yet done so to sign and/or ratify the Convention without delay.

5. The Conference notes that the Preparatory Commission for the Organisation for the Prohibition of Chemical Weapons, at its fourteenth session (22-26 July 1996) entrusted the Chairman of the Commission, in close consultation with its member States, with the task of convening, as necessitated by circumstances in connection with the occurrence of the trigger point, a meeting of the Commission to provide appropriate guidance.

Article X

1. The Conference once more emphasises the increasing importance of the provisions of Article X, especially in the light of recent scientific

and technological developments in the field of biotechnology, bacteriological (biological) agents and toxins with peaceful applications, which have vastly increased the potential for cooperation between States to help promote economic and social development, and scientific and technological progress, particularly in the developing countries, in conformity with their interests, needs and priorities

2. The Conference, while acknowledging what has already been done towards this end, notes with concern the increasing gap between the developed and the developing countries in the field of biotechnology, genetic engineering, microbiology and other related areas. The Conference urges all States Parties actively to continue to promote international cooperation and exchange with States Parties in the peaceful uses of biotechnology, and urges all States Parties possessing advanced biotechnology to adopt positive measures to promote technology transfer and international cooperation on an equal and non-discriminatory basis, in particular with the developing countries, for the benefit of all mankind. At the same time, the Conference stresses that measures to implement Article X need to be consistent with the objectives and provisions of the Convention.

3. The Conference recalls that the States Parties have a legal obligation to facilitate and have the right to participate in the fullest possible exchange of equipment, materials and scientific and technological information for the use of bacteriological (biological) agents and toxins for peaceful purposes and not to hamper the economic and technological development of States Parties.

4. The Conference emphasises that States Parties should not use the provisions of the Convention to impose restrictions and/or limitations on transfers for purposes consistent with the objectives and provisions of the Convention of scientific knowledge, technology, equipment and materials.

5. The Conference notes that existing institutional ways and means of ensuring multilateral cooperation between the developed and developing countries would need to be developed further in order to promote international cooperation in peaceful activities in such areas as medicine, public health and agriculture.

6. The Conference reiterates its call upon the Secretary-General of the United Nations to propose for inclusion on the agenda of a relevant United Nations body, before the next Review Conference, a discussion and examination of the means of improving institutional mechanisms

in order to facilitate the fullest possible exchange of equipment, materials and scientific and technological information regarding the use of bacteriological (biological) agents and toxins for peaceful purposes.

7. The Conference recommends that invitations to participate in this discussion and examination should be extended to all States Parties, whether or not they are members of the United Nations or concerned specialised agencies.

8. The Conference, at the same time, notes that the *ad hoc* Group of States Parties was mandated by the Special Conference in September 1994 to consider specific measures designed to ensure effective and full implementation of Article X, which also avoid any restrictions incompatible with the obligations undertaken under the Convention, emphasising that the provisions of the Convention should not be used to impose restrictions and/or limitations on the transfer for purposes consistent with the objectives and the provisions of the Convention of scientific knowledge, technology, equipment and materials.

9. The Conference takes note of the significant steps forward in promoting cooperation in the biological field taken by the United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil, in 1992, including the adoption of Agenda 21 and the Rio Declaration, and by the Convention on Biological Diversity, and underlines their importance in the context of Article X implementation.

10. The Conference shares the worldwide concern about new, emerging and re-emerging infectious diseases and considers that the international response to them offers opportunities for increased cooperation in the context of Article X application and of strengthening the Convention. The Conference welcomes the efforts to establish a system of global monitoring of disease and encourages States Parties to support the World Health Organisation, including its relevant newly established division, the FAO and the OIE, in these efforts directed at assisting Member States to strengthen national and local programmes of surveillance for infectious diseases and improve early notification, surveillance, control and response capabilities.

11. The Conference urges the use of existing institutional means within the United Nations system and the full utilisation of the possibilities provided by the specialised agencies and other international organisations, and considers that the implementation of Article X could be enhanced through greater coordination among international cooperation programmes in the biological field for peaceful purposes

conducted by States Parties, specialised agencies and other international organisations.

12. The Conference urges States Parties, the United Nations and its specialised agencies to take further specific measures within their competence for the promotion of the fullest possible exchange of equipment, materials and scientific and technological information for the use of bacteriological (biological) agents and toxins for peaceful purposes and of international cooperation in this field. Such measures could include, *inter alia:*

1. Transfer and exchange of information concerning research programmes in biosciences and greater cooperation in international public health and disease control;
2. Wider transfer and exchange of information, materials and equipment among States on a systematic and long-term basis;
3. Active promotion of contacts between scientists and technical personnel on a reciprocal basis, in relevant fields;
4. Increased technical cooperation and assistance, including training programmes to developing countries in the use of biosciences and genetic engineering for peaceful purposes through active association with United Nations institutions, including the International Centre for Genetic Engineering and Biotechnology (ICGEB);
5. Facilitating the conclusion of bilateral, regional and multi-regional agreements providing, on a mutually advantageous, equal and non-discriminatory basis, for their participation in the development and application of biotechnology;
6. Encouraging the coordination of national and regional programmes and working out in an appropriate manner the ways and means of cooperation in this field;
7. Cooperation in providing information on their national epidemiological surveillance and data reporting systems, and in providing assistance, on a bilateral level and/or in conjunction with WHO, FAO and OIE regarding epidemiological and epizootical surveillance, with a view to improvements in the identification and timely reporting of significant outbreaks of human and animal diseases;
8. The promotion of programmes for the exchange and training of scientists and experts, and the exchange of scientific and technical information in the biological field between developed and developing countries.

13. The Conference considers that a worldwide data bank might be a suitable way of facilitating the flow of information in the field of genetic engineering, biotechnology and other scientific developments. In this context, the Conference underlines the importance of monitoring all related developments in the field of frontier science and high technology in the areas relevant to the Convention.

14. The Conference requests the Secretary-General to collate on an annual basis, and for the information of States Parties, reports on how this article it being implemented.

15. The Conference welcomes the information provided by a number of States Parties on the cooperative measures they have undertaken towards fulfilling their Article X obligations and encourages States Parties in a position to do so to provide such information.

16. The Conference welcomes efforts to elaborate an international programme of vaccine development for the prevention of diseases which would involve the scientific and technical personnel from developing countries that are States Parties to the Convention. The Conference recognises that such a programme will not only enhance peaceful international cooperation in biotechnology but also contribute to improving health care in developing countries assist in establishing systems for worldwide monitoring of communicable diseases, and provide transparency in accordance with the Convention.

17. The Conference calls upon all States Parties in a position to do so to fully cooperate with the developing States Parties to the Convention in the area of promotion and financing the establishment of vaccine production facilities. The Conference recommends further that the relevant multilateral organisations and world financial institutions provide assistance for establishment and promotion of vaccine production projects in these countries.

Article XI

1. The Conference notes that the Islamic Republic of Iran has formally presented a proposal to amend Article I and the title of the Convention to include: explicitly the prohibition of use of biological weapons.

2. The Conference notes that the Depositaries are notifiying all States Parties of the proposal. The Conference encourages all States Parties to convey their views to the Depositaries on whether the Convention needs to be amended to make clear explicitly that the use of biological weapons is effectively prohibited.

3. The Conference requests the Depositaries to take such measures as may be requested by a majority of States Parties, including the option of convening a conference open to all States Parties to the Convention at the earliest appropriate opportunity to take a decision on the proposal, should a majority of the States Parties so decide.

4. The Conference meanwhile reaffirms the importance of Article XI. In this context the Conference underlines that the provisions of Article XI should in principle be implemented in such a way as not to affect the universality of the Convention.

Article XII

1. The Conference decides that a Fifth Review Conference shall be held in Geneva at the request of the majority of States Parties, or in any case, not later than 2001.

2. The Conference decides that the Fifth Review Conference shall consider, *inter alia,*

- The impact of scientific and technological developments relating to the Convention;
- The relevance of the provisions of, and the implementation of the Chemical Weapons Convention on the effective implementation of the Biological and Toxin Weapons Convention, duly taking into account the degree of universality attained by such conventions at the time of the Fifth Review Conference;
- The effectiveness of confidence-building measures as agreed at the Second and Third Review Conferences;
- The conclusions of a Special Conference, to which the *ad hoc* Group shall submit its report, including a legally-binding instrument to strengthen the Biological and Toxin Weapons Convention, which shall be adopted by consensus, to be held as soon as possible before the commencement of the Fifth Review Conference; and further action as appropriate;
- The requirement for, and the operation of, the requested allocation by the United Nations Secretary-General of staff resources and other requirements to assist the effective implementation of the relevant decisions of the Fourth Review Conference.

3. The Review Conference recommends that conferences of States Parties to review the operation of the Convention should be held at least every five years.

Article XIII

The Conference notes the provisions of Article XIII and, while emphasising that the Convention is of unlimited duration and applies at all times, expresses its satisfaction that no Stale Party to the Convention has exercised its right to withdraw from the Convention.

Article XIV

1. The Conference notes with satisfaction that a number of States have acceded to the Convention since the Third Review Conference.

2. The Convention calls upon States which have not yet ratified or acceded to the Convention to do so without delay and upon those States which have not signed the Convention to join the States Parties thereto, thus contributing to the achievement of universal adherence to the Convention.

3. In this connection, the Conference requests States Parties to encourage wider adherence to the Convention.

4. The Conference particularly welcomes regional initiatives that would lead to wider accession to the Convention.

5. The Fourth Review Conference appeals to those States Parties to the Biological and Toxin Weapons Convention which have taken part in the Conference to participate in the implementation of provisions contained in the Final Declaration of this Conference. The Conference also appeals to all States Parties to participate actively in the *ad hoc* Group of States Parties, with a view to the early completion of its work to strengthen the Convention.

Article XV

The Conference notes the importance of this Article as well as the importance of the legal status of the languages of the Convention and United Nations system in the work of the *ad hoc* Group established by the Special Conference in 1994.

Consideration of the work of the *ad hoc* Group established by the Special Conference in 1994

The Conference welcomes the report on the progress of the *ad hoc* Group as contained in BWC/AD HOC GROUP/32 and notes in particular the following:

- The Special Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (September 1994) agreed to establish

an *ad hoc* Group open to all States Parties to consider appropriate measures, including possible verification measures, and draft proposals to strengthen the Convention.

- Since its establishment, the *ad hoc* Group has held one short organisational session and four substantive sessions of a duration of two weeks each.
- In accordance with its mandate, as contained in the Final Report of the Special Conference (BBC/SPCONF/1), the *ad hoc* Group has been considering appropriate measures, including possible verification measures, to strengthen the Convention. Where relevant, consideration of issues has sought to build on the considerable body of technical work connected with strengthening the Biological and Toxin Weapons Convention regime undertaken by the *ad hoc* Group of Technical Experts to Identify and Examine Potential Verification Measures from a Scientific and Technical Standpoint (VEREX) in 1992 and 1993.
- The *ad hoc* Group has made significant progress towards fulfilling the mandate given by the Special Conference, including by identifying a preliminary framework and elaborating potential basic elements of a legally-binding instrument to strengthen the Convention.
- Nevertheless, the *ad hoc* Group was not able to complete its work and submit its report including a draft of the future legally-binding instrument to the States Parties for consideration at the Fourth Review Conference. In this context it is noted that the cumulative period allocated to substantive negotiations in the *ad hoc* Group has been eight weeks.

The Conference Welcomes the decision of the *ad hoc* Group, in order to fulfil its mandate, to intensify its work with a view to completing it as soon as possible before the commencement of the Fifth Review Conference and submit its report, which shall be adopted by consensus, to the States Parties, to be considered at a Special Conference. The Conference encourages the *ad hoc* Group to review its method of work and to move to a negotiating format In order to fulfil its mandate.

The Conference notes that the *ad hoc* Group is considering, as part of its continuing work, definitions of terms and objective criteria, such as lists of bacteriological (biological) agents and toxins, their threshold quantities, as well as equipment and types of activities, where relevant for specific measures designed to strengthen the Convention.

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PROLIFERATION OF WEAPONS SYSTEMS AND DISARMAMENT ISSUES WITH PARTICULAR REFERENCE TO PROHIBITION OF BIOLOGICAL, CHEMICAL AND OTHER WEAPONS OF MASS DESTRUCTION

Today, when transition to a new international order has appeared on the agend of international policy, and order based not on mutual military threat, but on its guranteed absence, when the cold war between the East and West is gradually becoming a thing of the past, practically all of use have the impression that the threat of use of weapons of mass destruction is also disappearing. Indeed, until recently, this impression was not misleading, because most of the stocks of such weapons were and still are in the hands of major cold-war protagonists.

Howevr, the Gulf crisis has reminded us of the dangers with which weapons of mass destruction and their means of delivery are fraught, and has demonstrated the seriousness of the problem of their proliferation. On the one hand, this crisis has brought to light a number of weak spots in the system of international security established over the last several decades. On the other, it has shown the ability of the international community to react adequately, on the whole, to emerging threats. Unfortunately, events went so far that the response had to take the form of force with respect both to the liberation of Kuwait and the elimination of certain types of weapons in Iraq itself— the latter process amounting, in fact, to forced disarmament. Although under specific circumstances such an approach is justified, it must, naturally, be considered only as an exceptional, extraordinary approach and in no way the usual means of ensuring security and arms limitation.

A major lesson to be learned from the recent events is the need to attach priority attention to the problem of proliferation of various types of weapons, primarily weapons of mass destruction and their means of delivery. Here, there recently emerged a certain discrepancy between the concerns of the international community, on the one hand, and some slowness or indecisiveness and, perhaps, a certain complacency at the level of global, intergovernmental organisations, on the other. In future, this problem ought to receive serious attention on the part of such organisations as, for example, the United Nations.

The problem of proliferation of weapons of mass destruction is, no doubt, complicated and multidimensional, and varies according to regional peculiarities and the specific types of weapons involved. It is thus natural that the mechanisms to solve proliferation are different.

As far as nuclear weapons are concerned, there is in place a rather solid, time-proven regime of non-proliferation. However, it is not universal. Indeed, it needs further strengthening. Although not many countries have remained outside the framework of the non-proliferation Treaty, many of those that do so have well-developed nuclear programmes and increasingly act as "new" or potential nuclear suppliers. This issue has recently acquired a new dimension. In the past, the very participation of a non-nuclear State in the non-proliferation Treaty was viewed everywhere as substantial proof of the exclusively peaceful nature of its nuclear programme. At present, however, it is evident that this is not necessarily true—a situation that is reflected in Security Council resolution 687 (1991).

Another important aspect of the nuclear non-proliferation Treaty is the fact that—virtually from the moment it was concluded—it has been criticised as "discriminatory", dividing the international community into two uneven and unequal parts: those with the right to have nuclear weapons and those without such a right. However, the facts prove that, on the whole, the regime lives up to its goal. Still, additional efforts are needed to ensure that it remains in place after 1995, when the question of its extension will be addressed.

There is no special regime or special non-proliferation mechanism in respect of biological weapons, another type of weapon of mass destruction. There does exist a general prohibition regime based on the 1972 Convention, which, of course, has an important "non-proliferation" function as well. However, in spite of the fact that the Convention places all parties on an equal footing, without dividing

them into "haves" and "have notes", universal adherence has yet to be achieved. This fact is worth mentioning in the light of assertions that the nuclear non-proliferation treaty is discriminatory. Moreover, the Convention has practically no effective verification mechanism. Some openness and confidence-building measures, adopted at the 1986 Review Conference, do have a positive potential. However, only a limited number of parties to the Convention participate in their implementation, and the measures themselves need further development. It does not seem to be a coincidence that there have recently been proposals to set up a special non-proliferation mechanism with respect to biological weapons.

The problem of chemical weapons proliferation has recently acquired special and, no doubt, justifiable importance. Here, as in no other field, one may observe parallel efforts being taken in a number of areas. Many States have adopted and enacted, although not always with equal effect, laws and regulations on export control. Exporters' groups, of which the "Australian Group" is the best example, have been set up with the primary purpose of ensuring that the supply of chemicals and—most recently—technologies from member countries of such groups do not lead to the proliferation of chemical weapons.

The joint Soviet-American statement on non-proliferation, adopted at the Washington summit on 1 June 1990,[1] may be cited as an example of attempts to harmonise approaches to the chemical weapons non-proliferation problem. This statement contains general approaches and defines joint and parallel activities by the USSR and the United States in this field. It also contains the Soviet-United States appeal to all countries to join in taking effective measures to stop the proliferation of chemical weapons.

Measures have been taken under the aegis of the United Nations to strengthen the 1925 Geneva Protocol, *inter alia,* by establishing under the Secretary-General a special mechanism to investigate breaches of the Protocol.

However, experience has shown that such measures can bring about only limited results. Thus, at present there is a general understanding that a really solid and long-term guarantee of the non-proliferation of chemical weapons can be provided only by conclusion of a universal convention on their complete prohibition and elimination. Such a draft convention is being elaborated at present in negotiations in the Conference on Disarmament in Geneva, and recent events provide the basis for hope that these negotiations may be successfully completed in the near future.

The "newest" of the non-proliferation problems concerns missiles and missile technology. A number of States, including the Soviet Union, implement measures at the national level to control the export of missiles and missile technologies. As yet, there exists only one rather limited international mechanism of missile technology control, the Missile Technology Control Regime, in which a number of leading countries of the West participate. Naturally, the question has been raised of broadening the regime's geographical sphere of coverage by, *inter alia*, involving the Soviet Union, a leading space Power. In spite of a number of substantial flaws in the regime, the Soviet Union has supported its basic goals and expressed willingness to consider all aspects of its official accession to it. However, additional obstacles have emerged. First, the Soviet Union has not enjoyed the same status with respect to information exchange as have the other participants. Secondly, progress in this direction has been slow owing to the restrictions imposed by the rules of the Co-ordinating Committee for Multilateral Exports with respect, *inter alia*, to the use of Soviet rockets to launch other countries' satellites.

One of the major problems in the area of missile non-proliferation is the fact that more and more States are showing a justifiable interest in peaceful space research, and some of them want to establish their own industrial capability to launch satellites into Earth orbit. However, it is extremely difficult to make a distinction between military and peaceful space technology. In the mid-1950s international cooperation was established in the field of the peaceful use of nuclear energy, and an organisation was created—the International Atomic Energy Agency—for dealing with, among other things, the provision of materials, services or equipment under safeguards. However, in the area of missiles such a mechanism does not yet exist. It seems that this problem may become a priority issue in United Nations activities in the field of disarmament.

In spite of all the diversity of problems and conditions involved in the question of non-proliferation—in particular of weapons of mass destruction—I still believe it is possible to distinguish certain common aspects.

First, geographical proliferation of weapons of mass destruction and of their means of delivery always has a very negative bearing on conditions of security in the regions where such weapons emerge, and on global security in general. Eventually, it means, to some extent, a "subtraction" from the security of the very State that acquires this or that type of weapon.

Secondly, there are a number of dangerous "hot" spots on the political non-proliferation map, which, in their outline and location, often coincide with areas of unsettled crises and conflicts. These circumstances should be most seriously taken into account in the context of any further efforts in the field of non-proliferation.

Thirdly, the problem of non-proliferation is always a problem of the relationship between peaceful and military applications of relevant technologies. If, in establishing a regime to prevent the proliferation of this or that type of weapon, we also limit the peaceful economic and technological development of States, we will create a regime that can hardly endure. Thus an element of cooperation in the peaceful use of technology and scientific achievements must be included in any regime of non-proliferation and prohibition.

In this context it would seem appropriate to reflect on the possible creation of a special fund to promote the development of advanced technologies in developing countries; such a fund could finance appropriate peaceful programmes in countries renouncing the acquisition of weapons, especially weapons of mass destruction and the means for their delivery.

This brings us to the fourth aspect: the problem of non-proliferation can be successfully resolved only through a broad, intensive dialogue between suppliers and receivers, between countries possessing advanced technologies and developing countries. What is required to deal with this problem, as with most other problems in the area of arms limitation, is openness. This is important for both suppliers and receivers of technologies. Ensuring such openness is not easy: it has not yet transcended the narrow framework of groups of States. Setting up a United Nations registry of arms transfers would seem a practical step in that direction.

In the light of the conflict in the Persian Gulf and the need to prevent similar situations from occurring in the future, it may be worthwhile to consider establishing under the United Nations a mechanism to foresee crisis situations and identify hot spots where there is proliferation of the most dangerous types of weapons. Such a mechanism could be set up under already existing structures, such as the Security Council, the Department for Disarmament Affairs, the Office for Research and the Collection of Information, or directly under the Secretary-General.

Staff might include highly qualified experts who, on the basis of information acquired by the United Nations from various sources, for

example, the weapons trade register, the Organisation's standardised reporting system on military budgets, and the control mechanism to strengthen the 1925 Geneva Protocol, could provide accurate prognoses as to the possible emergence of conflict situations in certain regions and develop appropriate recommendations in this regard. At the same time, this mechanism would "feel the pulse" as to the proliferation of weapons, especially those of mass destruction and their means of delivery and would prepare, if need be, recommendations. Such recommendations might include, *inter alia,* a warning by the Secretary-General or the Security Council to parties to conflict situations or to "proliferators", in which they would be informed of possible international sanctions that might be taken against them.

Last but not least, one cannot ignore the fact that the very question of the non-proliferation of weapons raises the problem of dividing States into two categories: those possessing and those not possessing such weapons. The problem has been very prominent with respect to the non-proliferation of nuclear weapons. Nevertheless, experience has shown that the majority of States have adhered to the Treaty on the Non-Proliferation of Nuclear Weapons precisely because they consider it to be a real means for strengthening their own security, both at the regional and the global level. Yet, what is also required to ensure a safe future for the Treaty is real progress in nuclear disarmament. Primarily, this means that progress must be made in resolving the issue of the complete prohibition of nuclear tests, as well as the problem of the production of fissionable materials for weapons purposes.

The road to a nuclear-free world can be neither easy nor short. Nuclear weapons are rooted too deeply in today's system of international security for them to be painlessly withdrawn all at once. First of all, the system itself should undergo drastic changes and the nutrient medium for the concept of nuclear deterrence should disappear.

The fact that the renunciation of the concept of deterrence through weapons of mass destruction is possible in principle is being attested to by the passing away of the concept of chemical deterrence—a process which, I believe, is taking place now, thus opening the way for the earliest complete prohibition of chemical weapons.

The conflict in the Gulf has shown the specious character of the assertion, on the one hand, that chemical weapons can play the role of a counterbalance to nuclear weapons and, on the other, that only possession of chemical weapons, making a retaliatory strike possible, can prevent an enemy from employing these weapons. In short, for

the first time in many years a situation has now emerged in which it is quite possible to resolve two problems at once—the problem of the non-proliferation of chemical weapons and the problem of their complete prohibition.

THE CONVENTIONAL ARMS MARKET AFTER IRAQ: PROSPECTS FOR CONTROL

The recent war with Iraq has sparked renewed interest in controls on the international arms trade. Years of unregulated arms sales to Iraq, many argue, contributed to Iraq's ambitions for hegemony and the inexorability of war. Unless curtailed, arms suppliers will now find new clients who may prove even more dangerous than Saddam Hussein.

Are the dangers of arms proliferation now so clear that countries will finally cooperate to establish an international system of restraint? The only possible answer is "It depends". The post-Iraq policy environment is rife with perils and promises: for each indication of support for tighter regulations on arms sales, there are equal signs that such an objective will prove ever more elusive in coming years.

In May 1991, the Bush Administration announced a new arms control initiative for the Middle East, calling for a regional ban on ballistic missiles and on nuclear and chemical weapons, and for a meeting of the five permanent members of the United Nations Security Council to develop guidelines to restrain the global sale of conventional armaments. Less than a week later, French President Francois Mitterrand proposed a similar initiative, while the Government of Canada pressed for a summit among the large Powers to develop a new regime of arms transfer restraint. These initiatives were heralded as evidence of a new departure in international arms sales policies.

But, appearances may prove deceiving. There is still little consensus within the United States or the international community about the relative desirability of significant controls on conventional weapons. Conventional arms transfer restraint has never proven a fruitful endeavour for international diplomacy, certainly as compared to the regulation of nuclear or even chemical weapons. The nuclear non-proliferation regime was based on the exclusive nuclear capabilities maintained by the super-Powers for many years and is held together by a widespread consensus about the unique danger of nuclear weapons. In the case of chemical (and biological) weapons, eliciting multinational support for a restraint regime is possible in large measure because of

the less than compelling military utility of these weapons and the moral opprobrium raised by the grave risks they pose to non-combatants.

The proliferation of conventional technologies shares few of these attributes: the exclusive ownership of all but the most advanced armaments is already shattered, the dangers of proliferation are disputed by many, and the perceptions of utility overwhelm any moral opprobrium. The only formal conventional arms restraint regime, the Missile Technology Control Regime (MTCR), restricts the sale of ballistic missiles and has proven workable largely because of the association of those missiles with nuclear or chemical delivery. Problematically, conventional weapons have always been seen as the benign alternative to nuclear proliferation and remain the most common instrument of dissuasion in efforts to stop new States from going the nuclear route.

Before the MTCR was initiated in 1987, there was no formal international apparatus to guide transfers of conventional technologies to developing countries. There is still very little interest in a regime that would significantly curtail exports of all but the most advanced weapons or dual-use technologies. Governments, including those that adhere to the MTCR and the nuclear non-proliferation Treaty, have vigorously resisted controls on transfers of combat aircraft and non-ballistic missiles, for example, despite their pertinence to the delivery of nuclear weapons and potentially to ballistic missile development.

Will the Iraqi war change this calculus and heighten international interest in regional and global arms control initiatives? While a selective system of restraints on the supply of certain key technologies may be feasible, a comprehensive arms control regime will likely prove far more difficult to achieve. Major supply and demand factors will have to be considered, and the relative feasibility and effectiveness of alternative approaches must be assessed realistically.

On the positive side, there are several reasons to be optimistic about the prospects for more ambitious supplier efforts at arms restraint in the wake of the Iraqi crisis. Largely unregulated by formal agreement, sales of weapons to the third world amount to a $30 billion annual arms bazaar, with over three dozen suppliers offering advanced weapons. During the recent conflict, coalition forces faced threats posed by weapons of their own design, from modified Soviet Scud B missiles to French Mirage jets to the latent but mercifully unrealised threat of chemical weapons made with West German assistance. Western technology also gave Iraq an independent weapons industry which many believed could have eluded an international embargo. How and

why the industrial world indulged Iraq's military ambitions is now a subject of great controversy and recrimination. Whether this sudden attack of self-examination will be sufficient to prompt durable policy changes, however, remains to be seen.

Another factor in favour of new restraint initiatives is the unprecedented level of cooperation forged among the industrial countries since Iraq's invasion of Kuwait. The *rapprochement* between the super-Powers, in particular, is a promising new element in the geopolitical equation. Assuming that the Soviet Government does not revert to old forms of rivalry with the West in the third world, the United States and the Soviet Union will have a common interest in containing regional instabilities—in part, by restraining arms sales. The joint statement signed in January 1991 by United States Secretary of State James Baker and Soviet Foreign Minister Alexander Bess-mertnykh, for instance, pledged that the two sides would seek a common approach to the quest for peace in the Middle East. The Soviet Union already has indicated it will join the MTCR and is developing ways to regulate the export activities of its own defence industries.

The success thus far of the MTCR in impeding technology proliferation for missile programmes also augurs well for future multilateral cooperation. The regime is credited with helping stop the Argentine-Egyptian-Iraqi Condor II/Badr 2000 programme in 1990, discouraging Chinese sales of the M-9 missile, and forcing the West German Government to crack down on private firms engaged in missile development efforts in both the Libyan Arab Jamahiriya and Iraq.

Another factor favouring a new climate of restraint is the reascendance of multinational institutions. After many years of cynical disregard from most of the leading nations, the United Nations increasingly is being seen as a mechanism for international mediation and conflict resolution. Its role in implementing the disarmament of Iraq pursuant to Security Council resolution 687 (1991) has made it the centrepiece of the development of a post-war security regime in the Gulf. If this trend continues, the United Nations could provide much needed international leadership for encouraging global arms restraint and regional security initiatives.

Growing United States interest in tightening up national export policies is also cause for cautious optimism. In addition to White House backing for new policies, some kinds of arms export controls may find a new source of support within the United States military, especially if an expanded American military presence is maintained in the Persian

Gulf region. Heavily armed countries which are politically unstable could pose a direct risk to the security of United States personnel and military technology deployed overseas.

Conventional arms restraint has certainly received heightened attention in the United States Congress and among private commentators, with considerable support for a comprehensive arms embargo on the Middle East, "from Marrakesh to Bangladesh", as one analyst put it. Congressional actions have included several versions of such an initiative, including a bill introduced by Senator Joe Biden (D-Del.) calling for a 60-day moratorium on arms sales to the Middle East to allow suppliers time to develop a restraint regime.

Similarly, West European Governments have undertaken steps to tighten their oversight and control over arms exports. Germany, Belgium, and France have all discussed the creation of new domestic apparatus aimed at this objective, while the European Community agreed in May 1991 to publish an annual arms trade registry to allow public scrutiny of the military sales of participating members.

Renewed interest in international arms restraint, however, will have to compete with other factors which may impede attainment of such a goal. As has happened repeatedly in the past, the political interest in restraint may be outstripped by structural imperatives which favour permissive export policies. The most critical factor militating against more stringent supplier controls is the changing and increasingly diffuse character of the international technology market. Protectionist instruments, like the missile cartel, work only in proportion to the clout of the members and their relative monopoly on the controlled products. Over thirty countries produce weapons, and over a dozen of these can produce missiles. Several, such as China, the Democratic People's Republic of Korea, and Brazil, are unapologetic about their permissive missile export policies, and have indicated they will not become members of the MTCR or any other restraint regime until they have a more equal share of the arms market. In other areas of weaponry, including fighter aircraft and naval vessels, the number of potential exporters is much larger and the consensus in favour of controls even weaker.

Trends in the technology market presage declining control by Governments over the disposition of defence-related innovations. Critical technologies vital to defence, from supercomputers to biotechnologies to fibre optics, are increasingly commercial in origin. As developing countries establish their own weapons industries, they become capable

of tapping into new sources of commercial and dual-use goods outside of great-Power constraints. In the future, an ever-shrinking percentage of technology will be subject to any direct governmental controls, testing the viability of cartels for all but a select number of the most advanced technologies.

The trends toward the economic integration of Europe, multinational defence cooperation, and liberalised trade between East and West also will have serious implications for developing countries' access to military technology. Given most industrial countries' dependence on exports, the easing of trade barriers among them may raise the level and volume of defence technology available for purchase globally. In the absence of disincentives, former Eastern European bloc States may increasingly try to benefit from Western technology and lessened Soviet control of their military sectors by seeking military clients of their own. Czechoslovakia's negotiations with the Syrian Arab Republic in June 1991 to sell tanks is a case in point. The migration of expertise also is defying national boundaries. Since the beginning of the policy *of perestroika*, for example, dozens of Soviet nuclear engineers have apparently found their way to India and Pakistan.

With narrowing constraints on domestic investment in defence and increasing foreign penetration of the United States market, industrial countries' defence industries may also seek a larger share of the global arms market. Many in industry and Government believe that marketing weapons globally is the only way expensive national research and development programmes for futuristic technologies, such as stealth, can be made affordable. Without higher export revenues, rising weapon costs could require an unlikely increase in governmental subsidies to companies involved in advanced research and development. How the advanced States decide to support their own high-technology sectors could thus have consequences for technology diffusion. A deepening dependency on exports of dual-use technologies could force a State to liberalise arms and technology export policies in a manner that might not reflect its long-term foreign policy and military objectives. A policy that sought to subsidise the costs of national security and sustain nations' economic competitiveness by enhancing the capabilities of smaller States to wage war with advanced weapons would seem a paradox, but it is not out of the question.

Another structural impediment to arms restraint is the central role which arms agreements have come to play in the relations between the developed and developing world. Arms sales, as the leading currency

of international diplomacy for many countries—including the United States and the Soviet Union—are used to indicate friendship or alliances, to encourage positive changes in clients' policies, and to sustain goodwill. A refusal to provide armaments, by contrast, is taken as a sign of disapproval of a Government or its policies. Except for the most advanced technologies, the United States refuses arms requests only from countries with which it has overtly hostile relations. The political dependency on arms exports was recently illustrated in the Bush Administration's $24 billion arms package for Egypt, Saudi Arabia, the United Arab Emirates, Bahrain, and Turkey following the end of hostilities in the Persian Gulf. The apparent conflict between the quest for an arms control regime and these proposed weapons transfers, the Administration hastened to explain, was not real. For all of its seeming irony, selling arms to countries in order to encourage their participation in a peace process has been the mainstay of United States Middle East policy for decades.

Finally, there is a basic question of the priority which will be given to mechanisms that stem weapon proliferation relative to defensive responses, such as promoting anti-tactical ballistic missile programmes for key allies or even deploying strategic defences in the United States. These instruments are not necessarily mutually exclusive, but they represent wholly different approaches to the problem and may ultimately be incompatible. Access to anti-missile technologies can assist States in the development of offensive missiles. For example, the Republic of Korea is believed to have converted the Nike Hercules surface-to-air missile (proven somewhat effective against ballistic missiles as well as against aircraft) to serve a surface-to-surface role.

However challenging the picture may seem, a free market is not the only realistic arbiter of technology transactions. Supplier cartels may seem outmoded and transitory in the light of the rapid transformations under way in the international system. Yet, they do constitute one of the few mechanisms by which advanced countries can influence the pace of international developments, however imperfectly.

And there are several reasons regional powers may have a growing interest in arms restraint. First, the demand for armaments will be tempered by resource constraints. The economic effect of the war against Iraq is taking its toll not only on the coalition partners, but on States throughout the third world which faced higher oil prices for many months. Secondly, there are the obvious military threats which countries

face from missile and other advanced-weapon proliferation in the hands of proximate adversaries, dramatised by the Iraqi war. Even non-combatants are subject to attack when military adversaries are separated only by a common border, and when missiles or non-conventional munitions threaten to move the battlefield to other countries or into population centres.

The politics in the Arab world clearly have changed. The heightened sense of vulnerability and common purpose during the war has brought unprecedented cooperation among Arab countries and forged much stronger relations with the West. One of the more encouraging developments to emerge from the region in recent years is the proposal from Egyptian President Hosni Mubarak to ban weapons of mass destruction from the area. The Mubarak plan urges joint negotiations on all non-conventional forces but does not insist that there be an overt, formal linkage between Israeli nuclear arms and other types of weapons. The proposal is rife with political and technical problems, but has not been dismissed by any State, including Israel. What is most important is that States like Egypt are taking the lead in regional security initiatives.

For now, though, the dialogue among adversaries in the Middle East, the Indian subcontinent, the Koreas and elsewhere is far too embryonic to inspire much confidence about imminent change in arms acquisition policies. And there are other reasons to be sceptical about the prospects for regional arms restraint. One is the likely effect of the success of American technology in the war against Iraq on the demand for advanced weapons among third world clients. Countries may not be able to afford stealth technology for now, but they may certainly seek advanced cluster munitions, fuel air explosives, and sea-launched cruise missiles. Another factor which may mitigate the success of a restraint regime is the growing number of competitive arms suppliers. With China, Israel, and even North Korea already serving as fairly significant suppliers of technical assistance to other third world weapon producers, this trend appears to have become a matter of intra-third world diplomacy, potentially circumscribing the ability of the industrial Powers to impose meaningful trade controls.

In the end, the viability of any arms restraint regime will depend on whether it elicits political support from third world countries. Perhaps the greatest impediment to new security arrangements is the perception of discrimination which arises when developed countries seek restrictions on developing countries which they themselves do not honour.

Towards a Regime of Managed Military Trade

Through instruments such as the MTCR, States that retain some control over sensitive technologies can influence demand by raising the financial and political costs of acquiring them. Technology will eventually be diffused to countries determined to achieve certain military capabilities. Trade restrictions, however, can buy time to devise ways to contain the instabilities posed by global militarisation and to address the causes of international conflicts. The added time could also be used to help States develop force postures and doctrines oriented towards deterrence and stability and to devise international norms for managing the risks posed by the diffusion of advanced technologies.

The first priority of a regime to control transfers of sensitive technologies must be to develop simple guidelines that can win wide support, with a short list of targeted technologies and flexible decision-making rules. Many experts have suggested that developed countries could increase their influence by focusing on a few "enabling" technologies, such as guidance technology, certain kinds of computer software, and biotechnologies. The diffusion of these kinds of goods is still so contained that denial of a sale would have a real impact. With the exception of a few categories of items that could be restricted *a priori*, such as biological and chemical agents, decisions about what constitutes sensitive technologies will increasingly have to take into account the specific conditions in recipient States, including their industrial capabilities, local or regional enmities, the sophistication of their military forces, and the overall foreign policy objectives of both suppliers and clients. In turn, understanding these conditions will require more emphasis on shared intelligence, verification and, ultimately, cooperation from the receiving country.

To reform the export control system, building on existing institutions established for coordinating exports would probably be more productive than attempting to establish a wholly new apparatus. For all its imperfections, the Coordinating Committee on Multilateral Export Controls (COCOM) for East-West trade could provide operational lessons about such challenges as identifying and tracking technologies and, although this was its weakest facet, enforcing restraints. With fewer restricted goods, efforts to monitor technology flows with shared intelligence, to impose strict penalties for non-compliance, and to pressure those who are not complying with guidelines could become more effective.

Given the growing complexities of reforming trade guidelines, advanced nations should consider elevating a regime controlling military trade to the status of an international agency, even if membership remains strictly consensual. Such an apparatus could provide the expertise to anticipate transfers of precision-strike systems, anti-satellite systems, and other futuristic technologies that could threaten global stability, and it could help manage their dissemination in a more structured way. This international agency could have several regional sub-groupings, reflecting changes in power alignments in the international system. Although the basic structure could remain, with power in the hands of advanced industrial countries, additional, regional, consultative mechanisms could deepen international understanding about the emerging technology environment.

One basic function an international agency could perform is the maintenance of a comprehensive database for monitoring the technology embodied in civilian and military products. The development of a comprehensive United States export control policy has long been hampered by the absence of such a data bank. In 1989, for instance, the General Accounting Office charged there was no coordination among United States agencies that were supposed to track dual-use technologies available internationally. Without comprehensive information, national and international agencies cannot adjust controls to the realities of the market and cannot consider the effectiveness of alternative policies.

Far greater international and domestic cooperation between industry and Government may also be necessary to identify, let alone monitor, technologies deemed vital to security. As the European countries move to rationalise their high-technology industries by melding commercial and defence activities, for instance, companies will have to do more to ensure the security of their defence-related innovations. The Japanese case also highlights the need for such cooperation. As the world's leading source of sophisticated information technology, Japanese industry dominates what has become a crucial component for a wide range of advanced military missions, including command and control, intelligence, targeting and guidance. Without support from Japanese industry, any control regime could be readily subverted by Japanese exploitation of market opportunities.

A practical model for industry-Government cooperation might be found in efforts to control the spread of chemical weapons. The Chemical Manufacturers Association, whose members account for almost 90 per cent of all chemical production in the United States, has actively helped

devise the terms and mechanisms of a treaty to ban chemical weapons. Without industry's assistance, the Government could not have identified the thousands of items relevant to making chemical weapons or where they are produced, nor could it have evaluated the risks and benefits of alternative treaty limitations and their verification.

One problem which will remain is how to select the technologies that warrant attention, especially as defence innovation becomes increasingly dependent on foreign and United States commercial components and as the pace of dissemination and obsolescence accelerates. The MTCR has managed to come to grips with the synergism among particular dual-use technologies, which, added together, could augment missile production capabilities. In principle, the lists of controlled items compiled for the MTCR could be the basis for a more comprehensive approach to North-South technology diffusion, were there political support for such an objective. There is sufficient flexibility in the existing guidelines to accommodate new kinds of high-risk technologies which may become more widely available in coming years, including equipment pertinent to warhead design, improvements in missile accuracy, and range and targeting capabilities.

Whether the United States and other industrial countries are prepared to offer client States incentives to limit their weapons acquisition programmes and, if so, what kind of incentives, is another unresolved question. Just in the United States, the absence of effective coordination among agencies with jurisdiction over trade policy, security assistance, economic assistance, sensitive technology transfers, space policy and arms control makes it difficult to consider mechanisms from which Washington could gain leverage.

Agencies with responsibilities for international debt management and other concessionary transactions need to be brought into the policy process to see if there may be ways to link financial incentives and military restraints. At a minimum, the policies of the World Bank, the International Development Agency, and other international lending agencies should be reviewed to ensure that assessments of a country's eligibility for credits and loans take into account the influence of its military, including the nature and relative burden of weapons development and production programmes. Although the degree to which aid should be made conditional on military restraint is highly controversial, it is clear that Governments need to find means to connect development assistance activities with other foreign policy objectives.

The international effort since August 1990 to isolate Iraq, as well as growing international concerns about destabilising developments in countries such as Libya, the Islamic Republic of Iran, and North Korea, could be the basis for a selective multinational arms restraint regime in the near term. These countries could be subject to very stringent trade controls and accompanying sanctions, to be observed by all the industrial countries and their major clients. In the longer term, however, export cartels are not a solution for removing the forces that impel countries to acquire advanced weapons. Efforts to restrain weapons acquisitions are more likely to be effective if they are part of broader initiatives to build a genuinely interdependent international system with codified and reliable means of resolving regional disputes peacefully.

In support of such efforts, nations might wish to explore confidence and security-building measures (CSBMs), including information and intelligence exchanges, on-site inspections of defence production and space launch facilities, and prior notification of missile tests. These and other mechanisms which promote consultation among regional rivals could help to ease unwarranted suspicions about missile production efforts, limit their political and military consequences and, possibly, reduce some of the incentives now propelling the expansion of these programmes. Examples of existing regional CSBMs include the agreement between India and Pakistan not to attack one another's nuclear facilities and to begin negotiation of a nuclear-test ban; the process of mutual reassurance taking place between Argentina and Brazil, which includes on-site visits to nuclear facilities and declarations of non-hostile intent; and informal United States proposals to encourage Middle Eastern countries to abjure the first use of ballistic missiles and to give prior notification of missile launches. CSBMs, like a pledge not to use ballistic missiles preemptively or on-site visits, would not endure in a crisis or stop a deadicated missile programme, but they could help to reduce the climate of suspicion among adversaries.

Most proposals for international arms restraint agreements tend to reflect a bias in favour of the great Powers, often with little sensitivity for the ambitions of developing States to become more equal partners in the international system. More far-reaching cooperation may be impeded by the smaller States' perception that the great powers are discriminating against them. Defining common norms that can elicit genuine international support will require taking the objectives of developing countries seriously, and recognising that those interests

are as enduring as they are diverse. In the final analysis, it may be the struggle for political legitimacy that will define the success or failure of a restraint regime. In other words, as long as the large Powers remain reluctant to abide by the restraints they seek to impose on others—from nuclear arms control to controls on their own pace of military innovations—an enduring control regime may remain a chimera.

REGIONAL ARMS RESTRAINT AFTER THE WAR IN THE PERSIAN GULF

Never has the need for developing some significant restraints upon the transfer of sophisticated military technologies to the third world been more clearly perceived than in the aftermath of the Persian Gulf war of 1991. The conflict dramatised the folly of assisting and sometimes encouraging the build-up of a potent military force which is quite out of scale in relation to a nation's defensive needs against its neighbours.

During the 1980s, Iraq spent in the order of $53 billion to build one of the world's largest military establishments. Saddam Hussein acquired a vast arsenal, including 700 advanced jet fighters with some state-of-the-art Soviet MiG 29s and French Mirage Fls, approximately 5,000 modern battle tanks, a wide range of missiles capable of reaching with varying degrees of accuracy targets on land or sea and in the air, assorted other weapons, and chemical and biological capabilities. Almost all of these weapons or their components were acquired directly or indirectly from distant suppliers, principally the Soviet Union and France, but also Brazil and South Africa, and, in the case of some technologies, from the Federal Republic of Germany and the United States. In addition, Iraq engaged clandestinely upon an ambitious nuclear weapons programme.

The high-tech nature of the war, while permitting selective targeting which could be used to limit collateral damage, none the less highlighted the lethality of modern warfare with sophisticated arms such as cruise missiles. While Baghdad's use of Scud missiles was not very successful, it did demonstrate that in any future wars in which longer-range and more effective missile systems were employed, it might become very difficult to keep a conflict from spreading over a wide geographic area.

As a policy issue, the question of restraining arms sales to unstable regions has not had a very receptive audience in the past decade. Although a few prescient analysts pointed out the dangers and risks of the unregulated flow of weapons transfers, decision makers within

Governments and the "realists" within the larger foreign policy community took the view that this was not a problem which could be seriously dealt with in practical terms. Most often one heard the argument that "if one country does not sell a weapon, another country will". Another favourite of the naysayers was to insist upon the absolute economic necessity of arms sales in maintaining defence industries and in supporting employment and national economies. Such arguments were usually stated in the most simplistic terms, as if restraining arms sales was an "all or nothing" proposition. Far too little attention was given to the possibility of *moderating* competition through *the regulation* of the quality and the quantity of arms sales. The beneficial role of arms sales in the creation and maintenance of regional balances was not well analysed or understood.

This will now change. At a minimum a significant effort will be made to build arms restraint into plans and concepts for the future stability of the Persian Gulf region and into attempts to progress towards a settlement of the Arab-Israeli conflict. Both United States Secretary of State James Baker and Soviet President Mikhail Gorbachev have spoken prominently of the need to create an arms control regime in the Middle East. In his testimony before the House Foreign Affairs Committee in February 1991, Baker observed that five Middle East countries had more battle tanks than the United Kingdom or France. The major suppliers after the war, he noted, should ask not only how to prevent Iraq from ever again acquiring such a disproportionate arsenal, but how supply restraints could be developed on the flow of weapons and dual-use technologies into the region as a whole. Prior to the conflict, President Gorbachev, in addressing the United Nations General Assembly in 1988, spoke of the desirability of some international constraints on arms transfers. The conflict has even led to considerable soul-searching in Paris regarding the wisdom of past French practices in pushing arms sales almost without restraint.

The number of nations that manufacture advanced weaponry has grown over the past decade, but remains sufficiently small to organise a system of restraint among the suppliers. The United States and the Soviet Union still dominate the third world arms market, accounting between them for over 60 per cent of all arms transfer agreements and arms deliveries to the third world between 1982 and 1989. In 1989, the Soviet Union accounted for 38 per cent of arms transfer agreements with the third world, the United States 26 per cent, Western Europe (France, United Kingdom, Federal Republic of Germany and Italy) 17 per cent, China 4 per cent, and all others 14 per cent.

Turning to the regions of the third world to which arms have been transferred, we find that the Near East/South Asia received 70 per cent of deliveries in 1986-1989, with all the other regions being relatively small recipients: East Asia/Pacific 13 per cent, sub-Saharan Africa 9 per cent, and Latin America 8 per cent. Within the Near East/South Asia region, the Soviet Union supplied 43 per cent of the arms in 1986-1989, with the United States 15 per cent, France 9 per cent, the United Kingdom 9 per cent, China 7 per cent, and all others the remaining 17 per cent.

The above data indicates quite clearly two aspects of the problem. One is that the Middle East remains the key region if the international community is to seek to restrain arms transfers on a global scale. The other is that a relatively small number of suppliers still have an oligarchic hold on the arms trade. Interestingly, with the exception of Brazil, they were all members of the international coalition which came together in common purpose in resisting Iraq's aggression against Kuwait.

There are, in effect, three arms races under way in the Middle East. To some extent they overlap with each other. The first is between Iraq and the Islamic Republic of Iran, two neighbours which are historical enemies and which will never fully trust each other. The second is between Saudi Arabia, with its junior partners in the Gulf Co-operation Council, and both Iran and Iraq. The latter two seem to alternate in their attempts to dominate the Gulf. The third, between Israel and the Arab States, is especially complex. Israel takes the view that it must be strong enough to defeat any combination of Arab States, which therefore means being substantially more powerful than any one of them. But each Arab neighbour fears having to fight Israel on its own.

The result has been massive expenditures on arms by all of the principal nations of the region—Iraq, Saudi Arabia, the Syrian Arab Republic, Egypt, Iran and Israel— in that order. The cost in terms of the drain on national economies is considerable. Iraq in recent years has spent 25 per cent of its gross domestic product on defence, Saudi Arabia about 20 per cent and Syria and Israel between 10 and 15 per cent.

In addition, Israel, Iraq, Iran and Egypt have felt compelled to develop their own arms industries. In each case the primary incentive has been the desire to reduce dependence upon outside suppliers. Iraq has proven adept at extending the range of its Soviet-supplied missiles. Israel manufactures its own main battle tank, the Merkava. But, given the high technology of imported weapons systems in the region, and

the belief that these nations hold that their security requires a full spectrum of defence capabilities, it is highly unlikely that they will be able to get along by themselves.

Given the diversity of motivations for acquiring arms that is to be found in the Middle East, agreement on some form of restraints will be no easy task. Yet, both an enduring political settlement of the Arab-Israeli conflict and stability in the Persian Gulf are unlikely to be achieved without some form of multilateral restraints on arms transfers, either tacitly agreed upon or negotiated. One reason is that an overall political settlement would not eliminate the long history of distrust. Both Israelis and Arabs would for many years remain highly armed, if only to ensure against a breakdown of the settlement. In such an atmosphere, a large infusion of arms by one side or the other would immediately threaten to undermine the political settlement. Thus without some arms control dimension, a political accord would be vulnerable and uncertain.

The relationship between negotiating a political settlement and multilateral arms restraints in the Middle East needs new analysis and thought. It has long been the conventional view that political agreement must precede restraints on arms. It is, of course, perfectly true that the roots of the Arab-Israeli dispute and of Persian Gulf rivalries are religious and political, rather than military. (Even so an imbalance in the military equation can have dire political consequences.) Nevertheless, a complete political accord need not be a prerequisite for some degree of arms control. Regulating arms transfers into the Middle East could facilitate the process of reaching a political settlement. It could be part of the negotiating process. And it could play a critical role in maintaining the integrity of the political settlement by preventing military deterioration, which could then undermine hard-won political gains.

In the past the supply of arms has often been interwoven with political negotiations. The Camp David accords and the two earlier Sinai disengagement agreements were made "acceptable" through assurance of arms. Conversely, arms have been withheld at certain times by both the United States and the Soviet Union in order either to create pressures for flexibility in negotiations or to prevent either side from acquiring a "war option" that would guarantee its victory at acceptable costs, thereby risking an inducement to conflict. In the post-Gulf-war environment, more attention should be given to the possible role of arms control measures as part of the future negotiating process.

Hypothetically, an arms control framework for regulating the transfer of arms could take three forms: agreement could be reached exclusively among the suppliers; the recipient States within the region could take the initiative and come to an agreement among themselves to limit weapons imports; or there could be an understanding between the suppliers and the recipients.

Realistically, only the third option is likely to be politically feasible. As we have seen, the United States, the Soviet Union, France, the United Kingdom, and China still transfer the large bulk of the actual weapons systems sent to the Middle East. Since many of their weapons are of a degree of sophistication matched by no other suppliers', these countries could theoretically control among themselves a substantial portion of the flow of arms as called for in the first option. But these States are quite vulnerable to pressures from the recipients, either because of their desire to retain political influence with the receiving State or because of their dependence upon oil. In as politically volatile and dangerous a situation as the Arab-Israeli confrontation, one with considerable domestic political overtones for the democratic States, no outside State or group of States that has established an arms supply relationship in that region will want to be charged with changing the ground rules unilaterally in a form of diktat.

The second option, an agreement on restricting arms purchases made solely by the parties within the region, would involve even more insurmountable problems. It will be some time before the political climate among the States in the Arab-Israeli confrontation and in the Persian Gulf will allow this possibility. The necessary degree of common purpose—and confidence—does not exist for such an arms control initiative to be developed and implemented solely by the States within the region.

This leaves the most promising possibility—one that is still enormously difficult to achieve—of an agreement that involves both the suppliers and the recipients. Such an accord would have to be built upon the common assumption that no party is likely to make gains worth the costs in a future conflict. It would have to be seen as stabilising a military balance, and it would have to be part of a more comprehensive approach towards an overall political settlement.

An arms control regime could provide for various types of quantitative and qualitative restraints on transfers into the Middle East. Because of the existing trend towards sending ever more sophisticated military technologies into the area, limits of a qualitative nature would

seem to be especially important. A rough quantitative balance already exists, an objective to which the outside suppliers have paid some attention in the past, and one that would merely have to be carefully maintained. An additional reason for giving priority to restraints of a qualitative nature arises from the geographical proximity of the cities of the opposing parties. The introduction of highly accurate ballistic missiles and long-range precision-guided munitions threatens population centres and would have a very destabilising impact upon the region. A good deal could still be done to limit such weapons systems in the Middle East, in spite of the missiles already introduced into the region in recent years.

The initiative for an accord that includes both the suppliers and the recipients would have to come from the former. Ultimately it is the arms producers who have the power to withhold the weapons. To reach a common understanding on desirable restraints, it would first be necessary for the suppliers to discuss their perceptions of the requirements for stability—or at a minimum, the avoidance of war—in the region. This would in all likelihood necessitate a relatively complete exchange of views on foreign policy goals, the defence needs of the individual States and ways of maintaining the military balance.

Accordingly, what would be desirable is the creation of a continuing forum for discussion and for making informal, perhaps even tacit, agreements, rather than anything resembling the formal negotiation of an accord or treaty. What would be sought is the *coordination* of policies so as to *regulate* the flow of arms into the Middle East in such a way as to avoid creating instability. It would be essential, however, to include the recipients at a second, but nevertheless early, stage. If the agreed restraints were perceived by them to be adversely affecting their fundamental security interests, it is doubtful that the limitations could be made lasting. The security perspectives of the recipient States must therefore be adequately taken into account. But it should not be assumed that they will oppose all restraints, for, having fought four Arab-Israeli wars and with the Persian Gulf conflict of 1991 behind them, these countries have a desire for peace and a common interest in achieving it.

A very limited step in this direction was undertaken in 1950, following the signing of the Tripartite Declaration by the United States, France, and the United Kingdom. Concerned that an arms race was developing in the area after the war of 1947-1949, these three countries undertook to regulate the flow of arms to the Middle East, which, at the time, they monopolised. This was done through the establishment

of the Near East Arms Coordinating Committee, which was quite effective in controlling the transfer of arms until 1955, when the Soviet Union negotiated the Czechoslovak arms deal with Egypt. Although Israel and the Arab States at one time or another voiced their discontent, they also saw some advantages in the arrangement. The nationalisation of the Suez Canal and Nasser's turn towards the Soviet Union for arms led to dramatically altered circumstances, and the restraints broke down. The clear lesson of this attempt at arms control, which was relatively successful until the Soviet Union stepped in, is the necessity of including all the potential major suppliers. The competitive nature of the arms race in the Middle East and the high stakes involved for the outside Powers make a comprehensive approach that includes all the principal arms exporters essential for success.

The Gulf war of 1991 has created a wholly new policy environment for dealing with the question of arms transfer restraint. The need to prevent the emergence of a new regional threat, such as Iraq was allowed to become, is widely acknowledged by most States. The creation of the coalition which passed the United Nations Security Council resolutions indicates the willingness of nations with disparate interests and views to come together in common purpose for the maintenance of international peace and stability. The destructiveness of modern weaponry, even when used in a disciplined and restrained manner, has become evident. Regional arms control should now become a central feature of the diplomacy of the Middle East.

There are some reasons to be at least cautiously optimistic about the prospects for regional restraints on arms transfers.

First, the two principal extraregional protagonists, each for its own reasons, have a clear interest in moderating their competition and indeed are already doing so. For both the Soviet Union and the United States, arms sales have been a key instrument of foreign policy for winning friends in the region. Each was looking over its shoulder, making sure that the other did not gain an advantage. With the end of the cold war the traditional rivalry between the two in third world regions has diminished greatly. In the Persian Gulf crisis they have been generally cooperative. Each has an interest in peace and stability in the Middle East.

Secondly, the Soviet Union is in economic crisis and has begun looking for ways to convert parts of its defence industry—which has used up some of its best technical talent and scarce resources—to civilian and consumer-oriented production. Although some of its arms sales

have resulted in hard currency earnings, a substantial portion has been in the form of long-term loans and credits, with political purposes as the prime motive. Both conservatives and reformers in Moscow now understand the need to give priority to the pressing needs at home.

Thirdly, the United States has consistently found itself being asked to arm both Arab States and Israel in a costly and competitive manner. Although the arms sales to Saudi Arabia are indeed true financial sales, the first opportunity that the Egyptians or Israelis have to ask that their debts be forgiven, as during the Persian Gulf war, the request is made to Washington. Political pressures make it difficult to refuse and the Middle East therefore has become the dominant region, on the order of 70 per cent, of United States assistance. There are many Americans who believe that this money should now be spent on urgent needs in the developing countries or in assisting the economic recovery of Eastern Europe.

Fourthly, the insecurity of Israel and some Arab countries such as Saudi Arabia should have been reduced by the sending of more than 500,000 American troops to the Persian Gulf. This was as clear and concrete a demonstration as could be given that the United States is prepared to support key allies in the region if it really becomes necessary. Israel's high state of defence preparedness is a massive drain on its economy, which is only slightly reduced by earnings through its own arms exports. Regional arms control could in time lead to a less militarised State.

Fifthly, the urgency of the crisis created by Saddam Hussein led to a new sense of cooperation by the States within the region. Such diverse nations as Syria, Saudi Arabia and Egypt came together in the coalition. The willingness of Israel to act in a restrained manner has fostered a newly found respect for it and could in time lead to greater acceptance of the Jewish State within the region.

Finally, the effective use of the United Nations and the creation of an *ad hoc* international coalition against Saddam Hussein shows that cooperative action can be taken in a region containing so many rivalries and political conflicts when there is a common interest. Regional arms restraints could increasingly be seen as an action of common interest.

Viewed realistically, the establishment of restraints upon arms transfers into the Middle East is a most difficult, sensitive, and complex task. Nevertheless there may now be sufficient common interest among the States that would be involved to make the task worth pursuing.

The best approach would be a supplier-initiated, regionally oriented framework for managing the process of arms sales to the Middle East. Consultations among the suppliers should encompass broad foreign policy considerations, possible conflicts within the region, and the suppliers' evaluation of the local balance of military forces. Initiatives from within the region should be welcomed, but it is likely that it would take the prompting of supplier States to get the process started. A collaborative approach should seek to fully involve the regional recipients in making decisions so as to avoid a sense of discrimination or paternalism. There should be intensive discussions between the producers and the potential recipients concerning the purchasers' security problems and defence requirements. The suppliers should respect any regionally developed plans and be responsive when they seem to be conducive to maintaining international security. But, in the final analysis it is the suppliers who have the right to say "no sale!", and they should be prepared to exercise it collectively or individually when necessary.

Multilateral arms restraint cannot of itself prevent a conflict, but it could reduce the risk and help build confidence among the States in the region. Accordingly, arms restraint should be sought in parallel to the negotiations for an Arab-Israeli political settlement. Such restraints could be an important dimension of a comprehensive Middle East settlement, and would help to underpin it. Indeed, arms and politics have become so intertwined in the Middle East that any lasting settlement may well depend upon resttraints on arms sales.

TRENDS IN THE PROLIFERATION OF SOPHISTICATED WEAPONS AND MISSILE TECHNOLOGY AND THEIR IMPLICATIONS FOR INTERNATIONAL AND REGIONAL SECURITY

Introduction

The international political world of 1991 differs radically from that of 1989. The withdrawal of the USSR from the role of chief counterbalance to the political and military power of the United States has produced a major structural change in the international system. It allowed the United States-led coalition to engage in a more interventionist policy towards a developing State, Iraq, than was ever conceivable in the pre-1989 context. The new international order that this coalition has created through its actions in the Persian Gulf is, however, one based on western and northern concepts of international peace and security, and upon the original 1944 concept of the permanent members of the United

Nations Security Council acting as the "five policemen of the world" to impose their vision of collective order upon lesser States.

A parallel and related change has manifested itself in the impact of the Persian Gulf war upon global perceptions of both national military capabilities and the ability of the United States-led coalition to coerce other States. The ability of that coalition to defeat an army and air force of the size and with the equipment possessed by Iraq appears to indicate that the gap between the military capabilities of developed and developing States has been slowly but steadily widening. At the same time, the political impact of the use of Scud missiles by Iraq against population centres was out of all proportion to any conceivable direct military effect.

One question which the war has raised is whether the deterrent effects of weapons of mass destruction are now the only capabilities which can prevent a State from having United Nations Security Council coalition enforcement action taken against it, or whether even weapons such as these are neutralised by those possessed by the existing nuclear weapon States. For, if they are, and no other military option for neutralising such capabilities exists, developing States may have little option but to accept the hegemony of the United States-led United Nations coalition of industrialised States and allies, including Germany and Japan, in the years ahead. While this may arguably enhance the security of smaller States faced with larger regional rivals, it is likely to be seen as detrimental to the security of those States which aspire to positions of regional dominance.

These changes may be counterbalanced in the future by changes in the behaviour of States, from relations based on political power to more cooperative relations. The analysis which follows, however, is written on the premise that most of the "old verities" will continue to operate, if only to sketch out the consequences if such a change does not occur.

The New Sophisticated Weapons Technologies

The Gulf war in the end proved to be "no contest" because a well-trained, professional military force, the core elements of which were accustomed to operating in an alliance context in Europe, was able to utilise most effectively new concepts and technologies of battlefield management. The application of such concepts was made possible by a quiet revolution in communications, reconnaissance, guidance, and command and control technologies, which has been taking place over the last 20 years.

Although many appreciated that this electronic revolution was occurring, its nature made it almost impossible for non-specialists to evaluate it. For this was not a revolution of the type produced by the appearance of the "Dreadnought" or nuclear weapons. The nature of warfare was not changed overnight by the appearance of a new, discrete weapon, which enhanced the power of any State which possessed it. Rather, it was a revolution which augmented the capabilities of a wide spectrum of existing weapons, as well as enabling their use to be directed and coordinated in a much more effective manner.

The application of electronics to weaponry started with the development of radar in the 1940s, but it was only in the 1960s, with the advent of the transistor and the microprocessor, that miniaturised systems offering great computing abilities and operating with relatively low power consumption could be constructed. Many of the components used were developed through commercial processes for civil purposes. The rate of change in the capabilities of these components was astounding, with each successive generation arriving two to five years after the last. As time went on, much of the production capability for these components was to be found not in the established European industrialised States and the United States, but rather in States on the Pacific rim such as Japan. Traditional concepts of self-sufficiency in indigenous weapons production proved increasingly difficult to implement for all States, including the United States, as production of electronic components moved elsewhere from that country and Europe, for example, to Japan, the Republic of Korea and Singapore, and also to Taiwan, province of China.

These new electronic technologies have had two major impacts. The first was upon the capabilities of existing military hardware and the second upon the ability of commanders to control and coordinate warfare in a centralised manner on the electronic battlefield. On land, they led to much more precise aiming systems for tank guns and air- and ground-based anti-tank missiles; in the air, to much more precise navigation and weapon-aiming systems in aircraft operable in all weathers; and at sea, to the passing of the gun and to the development of the missile as the major defensive and offensive capability of warships. At the same time they made possible new types of hardware, in particular very accurate mobile ballistic missiles with a capability of destroying reinforced concrete bunkers and other hard targets; small and accurate cruise missiles which could be launched from air, sea or land platforms; and land- and sea-based anti-missile systems. And as more electronics

could be packed into missiles themselves, so the necessity for air platforms to carry advanced guidance systems or for them to penetrate to a target declined. The capabilities of aircraft were further enhanced by the advent of "smart bombs", homing in on a point of light from a laser-designator held by someone on the ground or pointed from the air. These developments also brought forth new electronic countermeasures to confuse or destroy radars and divert missiles from their targets.

These changes did not, however, necessarily enhance the ability of the majority of States to strike effectively beyond their borders. The trend was towards smaller aircraft with less range but the ability to carry heavier external loads of ordnance, fuel and electronics, rather than the development of large, long-range bombers. Although in-flight refuelling for aircraft had been developed from the 1940s onwards, only the air forces of the advanced industrialised States have routinely utilised it fully and have significant fleets of tanker aircraft to support it. Among others, Argentina, Brazil, Egypt, India, Iraq, Israel, Pakistan, Saudi Arabia, the Democratic People's Republic of Korea and the Republic of Korea, as well as Taiwan, have aspired to develop or acquire long-range booster technology as a basis for ballistic missiles. However, difficulties over the development of re-entry and guidance technology have prevented these efforts from being translated into accurate and viable military weapons, rather than inaccurate weapons of political terror.

It was in the technological infrastructure of warfare, however, and in particular in the exploitation of space, that the most significant changes were taking place. The space satellite spawned many developments with significant military applications: real time reconnaissance vehicles sending TV pictures of any location on the planet back to receiving stations on Earth, and also operating in the infrared and other spectrums to penetrate physical camouflage; portable satellite dishes enabling secure voice and data transmissions to occur over thousands of miles; navigation satellites enabling ships, missiles, aircraft and soldiers to fix their position within metres; and intelligence satellites eavesdropping on communications links.

These capabilities, together with those aloft in aircraft such as the United States Airborne Warning and Control system (AWACS) and its Joint Surveillance Target Attack Radar System (JSTARS), gave a commander an unparalleled ability to see into the territory of his opponent. and gave him the fullest possible information upon which

to make command decisions. Such decisions could themselves be simplified by the use of expert systems which preselect what is deemed the significant from the insignificant information in the mass of data available to a commander. They also enabled many different types of force to be operated in an area without interfering with each other, thus allowing an unprecedented level of coordination of offensive and defensive actions and concentration of fire-power to occur. Above all, by no longer requiring all necessary capabilities for offensive and defensive action to be carried on a single platform, they have generated tremendous force multiplier effects — a development which means that the capabilities of the whole are no longer the sum of its parts. It is in the main this force multiplier effect of electronics that distinguishes the military capabilities of the advanced industrial States from those of all others.

The Dissemination and Proliferation of Sophisticated Weapons Technologies

The cold war was largely responsible for forcing the pace of the development and procurement of these new military capabilities, and also for encouraging their competitive dissemination to European allies and to clients around the world. What started as the transfer of surplus Second World War equipment gradually evolved into a traffic in weapons that were in the inventory of the industrialised States, and then into the sale of the most advanced equipment, which in some cases was not even in service with the vendor's national forces. At the same time, a key issue became the electronic capabilities built into equipment: whether "degraded" versions of this should be fitted to export models, and whether key force multiplier equipment, such as AWACS, should be transferred at all.

While this was taking place, the prospects for new suppliers to enter the market declined. The United States and the USSR have dominated the arms transfer market since the 1950s, with European States such as France and the United Kingdom playing a lesser role. Attempts by States outside this group to develop new advanced military hardware, rather than licence-produce it or adapt existing designs, have not been successful. Indigenous development and production by developing States appears to lead to their having less capable systems, even if this approach gives them reduced dependence upon supplier States for their defence capabilities.

As a consequence, there has been a surprising stability in the supplier base for new military systems over the last 40 years, with new suppliers

only making inroads into less technologically advanced areas, such as military training aircraft and armoured cars. At the same time, there has been a desire on the part of several States to licence-build or assemble existing designs originating in the industrialised States, and then produce indigenous developments of them.

Some attempts have been made by certain developing States to place satellites into orbit, and to develop indigenous missiles of the 1950s generation or adapt existing Soviet designs. As yet, however, no attempt appears to have been made to disseminate or licence-produce the new generation of cruise missiles (which would be ideally suited for the delivery of chemical munitions).

The pattern which thus emerges from this brief survey of weapon proliferation is one in which the majority of dissemination has been from the United States and the USSR to allies and clients. The sources of this technology have been widening, however, especially as more components for advanced military systems are produced by the Pacific rim States, while no significant new suppliers have emerged from among the developing States. Yet, it is clear that a market also exists for offensive systems that would be judged obsolete by the advanced industrial States, such as first generation ballistic missiles, like the Chinese-supplied missiles in Saudi Arabia, even if their precise utility is often obscure. Such systems can threaten direct destruction upon the cities of a potential enemy, no matter how far away. One presumes that it is this possibility which recently led the United States to start to reorient its Strategic Defense Initiative (SDI) programme away from countering the threat of a massive USSR missile attack to countering missile threats from developing States against the continental United States and its allies and clients.

Regional Security in the Post-Cold War

The heart of the global security (or some would argue insecurity) structures that persisted from the late 1940s to 1989 was the division of Europe and the ideological and military confrontation there between the United States- and USSR-led alliances. In 1991 this confrontation is in the process of rapid dissolution. The outlines of a new security structure for Europe have yet to emerge, but what is already apparent is that these changes will lead to a reduction in the size of the standing armies of Europe; to considerable uncertainties over the roles, composition, training objectives and future equipment needs of those forces; to a significant reduction in the size of the European arms

market; and to consequent pressures upon the defence industries based both there and in the United States and the USSR to either export or transform themselves into civil producers—or face bankruptcy. It also remains unclear how these changes would affect the ability of any future United States-led coalition both to be seen to be capable of mounting future military operations of the type undertaken in the Persian Gulf area and to be actually capable of doing so.

Three regions retain the seeds of acute conflict and of potential arms races: the Middle East, South Asia and North-East Asia. In the Middle East, the demand for advanced weaponry to reinforce national security remains high in the Syrian Arab Republic and Saudi Arabia, where it is backed by oil revenues, as well as in Israel. In South Asia, the tensions between Pakistan and India show no overt signs of abating, with an added dimension generated by their latent nuclear weapon capabilities. In North-East Asia the North Korea leadership is isolated, as to a lesser extent is that of China, and threats of uncooperative behaviour, be it over non-acceptance of International Atomic Energy Agency (IAEA) safeguards, nuclear proliferation, or missile sales to the Middle East, may appear to them to be one way of acquiring leverage in this new international system.

In these three regions, indigenous conflict resolution and management mechanisms may be non-existent or unable to hold conflict in check, unlike the European, South American and African cases. This raises the question of the changes in the international security system which might enhance stability in these regional systems. Four such developments seem relevant: the provision of security assurances; the negotiation of regional arms limitation agreements; the creation of supplier controls on the flow of weapons to the region; and the threat or actual use of military intervention.

The International System and Regional Security

Security Assurances

An alliance is a traditional method of increasing the military capabilities of a State, and this arrangement has become so institutionalised in Western Europe that any other way of approaching security appears unthinkable. In the cold war system, security assurances could be sought from one or the other bloc leader and, if given, could be relied upon. In the world of the 1990s, however, the competitive incentives for offering and sustaining such assurances seem likely to be lacking.

Although United States actions in the Persian Gulf will make its security assurances more credible, there will undoubtedly remain a concern that the people of the United States will not wish to sustain the role of world policeman indefinitely. Moreover, its continuing budget deficits suggest that the United States may not have the economic base to do so, unless a way can be found for institutionalising in an acceptable fashion the cost-sharing arrangements negotiated during the Persian Gulf crisis. The alternative is for the United Nations Security Council to provide such guarantees and to operate as an enforcement agency. Can the United Nations Military Staff Committee now be revived to implement such policies? And what would be the nature and composition of such United Nations forces? How could they be financed and armed? To whom would their members owe allegiance? Security assurances thus appear useful, short-term methods of sustaining regional security, but their long-term utility must remain in doubt, owing to uncertainties over the willingness and ability of those providing them to actually implement them.

Regional Arms Limitation Agreements

The major problem facing all arms limitation agreements in the post-1989 world is their conceptual basis. Bilateral United States-USSR nuclear arms control negotiations from 1970 onwards could operate on the basis of sustaining crisis stability, reducing perceptions of a threat of surprise attack and retaining rough parity of numbers of launch vehicles or warheads. Similarly, the negotiations on mutual force reduction in Central Europe and later on the talks on conventional armed forces in Europe could proceed on the basis of rough equality of numbers on either side of the geographical line between the two blocs. Of equal significance, however, may have been the confidence-building measures instituted under the Conference on Security and Co-operation in Europe (CSCE), which, among other things, sought to alleviate fears of surprise conventional invasions being mounted under the guise of exercises.

In Europe now, and in most other areas of the world, the problem confronting arms limitation agreements is what to limit and on what basis. What is more difficult to evaluate, however, is what might constitute a stable and safe military relationship between the States involved, one that could be sustained by arms limitation measures.

There does seem some case for arguing for limitations on fixed-site missiles, the existence of which may create incentives for pre-emptive

attacks, and on longer-range attack aircraft, as well as on the overt possession of nuclear weapons. The new electronic technologies pose something of a dilemma, however. On the one hand, they may make activities within the borders of a potential enemy more transparent, thus providing assurances that mobilisation for an attack is not taking place, and by doing so deter such an attack, but on the other hand, they could make an attack more effective.

Underlying the difficulties facing arms limitation agreements is a more profound issue: how to identity the capabilities that differentiate an effective military capability from a less effective one. One implication of the Persian Gulf war is that counting numbers of apparently similar weapons may give little indication of their true capabilities. Indeed, it may legitimise the superiority of the State with more advanced systems and an effective electronic infrastructure. Thus, the task for the future may be to try to bring such qualitative dimensions of weaponry into arms limitation negotiations and agreements, perhaps through restrictions on testing, operational simulations and exercises.

Supplier Controls on the Flow of Weapons

It was recognised as early as 1918, during negotiations on the establishment of the League of Nations, that effective enforcement action by an international organisation would be feasible only if arrangements were made to limit the armaments of those States against which such action might be taken. Given that the majority of Iraq's advanced armaments were transferred to it from other States, though some of its missiles appear to have been indigenously produced, there has been a strong move in the United Nations and elsewhere since the end of hostilities to place restrictions upon exports of arms to the Middle East region and on a global basis. However, a number of issues need to be addressed before such restrictions can be implemented.

The first quite simply concerns the criteria to be used to allow or disallow transfers of arms. In particular:

- Is a distinction to be made between offensive and defensive hardware, or between stabilising and destabilising equipment, so that, for example, United States Patriot anti-missile systems may be transferred, but Lance short-range bombardment missiles may not?
- Are transfers to be allowed to allies, but disallowed to others?
- Is licence-production or collaborative production counted as a transfer?

- Are transfers of certain types of hardware to be banned, such as ballistic missiles or AWACS and JSTARS aircraft? If so, is production of these missiles and aircraft also to be banned, and existing stocks destroyed? What sanctions are to be imposed on suppliers breaching the ban?
- How is dual-use equipment to be dealt with, especially when it has a legitimate civil function? To deny it to a State may also involve denying that State's "inalienable right" to technological development.

Underlying these apparently pragmatic questions are other issues. They relate to the nature of the existing nation-State system and its theoretical and actual modes of operation. All States have a right to make preparations to sustain their national security and to determine for themselves the arms and military manpower they need for this. It would be a denial of that sovereignty for others to make that judgement for them. The only constraint on this right is the international ethical and practical opposition to non-conventional weapons of mass destruction, which has resulted in sustained efforts to impose global bans upon them. It follows logically from this that all States have a right to ask for conventional arms from others and to produce them indigenously. Equally, however, no State has a duty to supply arms to others if it does not choose to do so.

The existence of such rights and duties inevitably leads to contradictions. By denying weapons to a recipient State, a supplier may reduce its security, while the recipient has no method of reciprocally denying security to the supplier. Thus, any system of arms transfer constraints will inevitably be viewed as challenging the national sovereignty of would-be recipient States and enhancing the supplier's power over other States.

The United Nations system, as seen from the General Assembly, is one based on the sovereign equality of States. As viewed from the Security Council, however, it is one where the most powerful States act as a global executive authority. The year 1991 has seen the Security Council starting to play some of the roles the founders of the United Nations, in 1944, intended it to play. The international political system that can now be argued to be emerging is one in which small and relatively powerless States are likely to be subject to enforcement action unless they conform to the rules laid down by the more powerful, and one in which restrictions upon the armaments of such lesser States will be seen as acceptable and legitimate in the interests of regional

stability and global order, whatever their implications for more traditional ideas of State sovereignty.

This still leaves the practical problem of which transfers and indigenous production to prevent and why. As the case of Iraq has indicated, bans on the possession of weapons of mass destruction and ballistic missiles with ranges of more than 70 kilometres seem likely to generate support. There continues to be a dilemma, however, over whether such bans should be imposed ones, with the permanent members of the Security Council and some of their allies retaining the capabilities denied to others, or consensual bans. In addition, there is the issue of how to handle the civil applications of many of these technologies. Space satellites are a case in point, for would all States have a right to launch those with military, as well as civil, applications? Regimes similar to the nuclear non-proliferation regime would seem to provide some guide with regard to how to proceed, yet the history of this regime indicates that any apparent legitimisation of the possession of a military technology by some but not by others is bound to generate acute political difficulties.

A further practical and philosophical question is whether both transfers of weapons and their indigenous production should be banned, or just transfers alone. Again, a ban on one but not the other is blatantly discriminatory, but many would regard it as justified in the new circumstances, especially if it facilitates enforcement actions.

One oddity of this situation is that in a world where the market economy, democracy and self-determination are seen to have triumphed, there is now a strong thrust to impose limitations on the market in arms. In part this is possibly a reaction to an uneasy feeling that the new electronic military technologies are taking control of weapons development and manufacture away from traditional national armaments processes and into areas that are neither national nor entirely military: the "merchants of death" may be about to make a reappearance, and the State has to reassert itself in this context. In part it is also a concern that conventional technology may be used to deliver weapons of mass destruction. The latter has been the overt justification for attempting to expand the Missile Technology Control Regime (MTCR) beyond its Western founder supplier States.

Military Intervention

The clear message emerging from the Iraq-Kuwait crisis is that external intervention legitimised by United Nations Security Council

resolutions is now feasible. This realisation seems likely to have two different effects. On the one hand, it should deter States contemplating challenging the United States-led coalition's interpretation of the "new international order". For example, it might give a State the message that if it aspires to acquire nuclear weapons, it had better keep its facilities clandestine and not give the United States or one of its coalition partners any excuse—such as involvement in a conflict—to destroy them. On the other hand, it raises the question of how long the United States will have the political will and resources to sustain the role of military coalition leader, and at what point the coalition of interests it has capitalised upon, in particular the consensus among the permanent members of the Security Council, will start to erode. Will there ever again be such an uncomplicated political and military context for intervention as the crisis in the Persian Gulf proved to be, with minimum casualties among the intervening forces? What will happen if the next situation deteriorates into a Vietnam or Afghanistan?

Conclusions

The last two years have seen two revolutions take place in parallel. One has been the withdrawal of the USSR from Eastern Europe and the emergence of new democratic regimes there, as well as the slow dissolution in the West of the image of the USSR as an ideological enemy. The second has been the harnessing of electronics and space satellites to conventional weaponry, a development that, in the hands of a well-trained professional military, has produced a force multiplier effect that appears almost impossible to evaluate in advance.

Taken together, these changes suggest that a new international system may now be emerging, based upon the threat of international enforcement action led by the United States and legitimised by the United Nations Security Council. Such a system would, however, be discriminatory and based upon concepts of order held by States in the industrialised world. Regional security organisations seem likely to develop in several areas, as envisaged in the Charter of the United Nations, but in others they may need to be underpinned by external security guarantees and other forms of external intervention. Arms limitation agreements may form part of these security systems, but they seem unlikely to involve traditional counting of equal numbers of like systems on either side. Rather, they may be based on such activities as confidence-building measures and measures to provide greater transparency, as well as on establishment of demilitarised zones.

Global attempts to limit arms transfers and production seem likely to be part of this new international system, especially given significant reductions in defence expenditure by the United States, the USSR and European States. These will be predominantly imposed supplier controls of a discriminatory nature, though some attempts may also be made to build consensual regimes around them.

How long such a power-political, rather than cooperative and consensual, regime based on United Nations Security Council resolutions will survive is open to debate. It threatens to change the United Nations in a fundamental way. For many years, the General Assembly has been used by the leaders of developing States to attempt to impose constraints upon the developed States, especially the United States. Now that State and its associates may, in turn, be able to use the Security Council to impose constraints upon the rest of the world. Enforcement action, in support of the vision of international and regional stability and security held by the dominant global coalition, now appears feasible against most developing States. This will have the positive effect of enhancing the security and autonomy of military weak developing States, such as Kuwait, but will place significant limitations on the aspirations of the larger and stronger States which have been leaders of the developing world. The danger is that unless new processes and institution foe conducting world politics can be rapidly agreed upon, these regional Powers will feel alienated from this new system. The challenge that now faces the international community is to construct a new regime while yet avoiding such alienation.

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THE PARIS CONFERENCE ON THE PROHIBITION OF CHEMICAL WEAPONS

Among the various activities of the international community with regard to disarmament in all its forms, chemical disarmament holds a place of its own. As early as the end of the nineteenth century the use of chemical weapons was widely condemned and, after the cruel experiences of the war of 1914, it was outlawed internationally under the Geneva Protocol of 1925.

This continuing legal and moral proscription has not always been respected. Moreover, experience has shown the need for a total prohibition which is the *raison d 'etre* of the current negotiations in the Conference on Disarmament. The successes and limitations of the efforts made in the last hundred years to prohibit chemical weapons are indicative of a particular trend to which the recent Conference of States Parties to the Geneva Protocol of 1925 and other interested States, held in Paris from 7 to 11 January 1989, has made a further and highly instructive contribution.

While caution is called for after so many shortcomings in this and other sectors of multilateral disarmament, the facts speak for themselves and serve to highlight the unprecedented and, indeed, historic character of that meeting. Convened in three months, the Paris Conference brought together 149 States, of which 80 were represented at the ministerial level, and it adopted a short but compact comprehensive document which lays down specific guidelines for all matters pertaining to chemical weapons.

Such an unusual assembly would probably not have been possible had it not been for a particular combination of circumstances: the end of a war of eight years between Iraq and Iran, marked by the repeated use of chemical weapons; Security Council resolution 620 of 26 August

1988 condemning that use; and the tragic plight of the Kurdish populations after the cease-fire agreement between the two belligerents. It must also be borne in mind that the Paris Conference would not have been so successful without the discreet but important work carried out in the Conference on Disarmament since the introduction of a future developments draft text in 1983.

Nevertheless, all these events which contributed to the convening of the Conference were not sufficient to guarantee a productive out come. Accordingly, in order to have a clearer understanding of the implications, we must start by considering the preparations for the Conference before examining its actual proceedings and evaluating its results.

The Preparations

Several projects for a global conference on chemical weapons had been contemplated since the middle of 1988, but in a very different context: this was the case, in particular, of the Yugoslav proposal, submitted at the third special session of the General Assembly of the United Nations devoted to disarmament in June, to organise a United Nations conference, after the text of the convention was finalised, in order to collect the largest possible number of signatures from the outset. This proposal was taken up again in September by Egypt at the Conference on Disarmament in Geneva.

The accelerated pace of events during that summer brought this idea directly and immediately to the fore on the ground that the urgent situation called for speedy action. That was the reason for the idea put forward by President Reagan in his address of 26 September at the forty-third session of the United Nations General Assembly and taken up again three days later by Francois Mitterrand, the President of France, in his address in the same forum. In his statement, President Mitterrand emphasised the particular situation of France as depositary of the Geneva Protocol of 1925 and made three important observations to the effect that France did not possess and did not produce chemical weapons, renounced all production after the entry into force of the convention, and was prepared to decide on sanctions in the context of the United Nations in the event of a further use of these weapons.

On these bases, which were rapidly and enthusiastically endorsed, France proceeded, in the first half of October, to consider the following very clear options: the Conference should be convened within the shortest possible time in order to take advantage of the manifest mobilisation

of the international community; given the need to act quickly, an *ad hoc* Conference should be convened, different from the usual pattern of United Nations conferences for which well-established procedures involve preparations of approximately one year; choosing a period during which the Conference on Disarmament, the forum for negotiation on chemical weapons, would not be in session, in order to avoid all interference; and, lastly, opening of the Conference to all interested States, including those which had not yet acceded to the Protocol of 1925.

Before the official announcement of the dates on 20 October, all these details were transmitted to the Secretary-General of the United Nations, who warmly welcomed them and instructed his services to give full support to the project. From the outset this very favourable response ensured excellent co-operation with the competent services of the United Nations Secretariat.

Initiation of the project at the start of the First Committee's session enabled the preparatory work to begin immediately with all the delegations present in New York. In many ways, and thanks to the good will of all, it was possible at the regular session of that Committee to organize, without any specific decision, a *de facto* preparatory committee, which served the delegations as a forum for numerous consultations.

The work in New York was carried out in two stages. The first stage was to finalise the so-called "omnibus" resolution 43/74 C, introduced by Canada and Poland, which contains several positive references to holding the Paris Conference. The drafting of the relevant parts of this document, and the drafting of resolution 43/74 A, introduced by Australia and dealing more specifically with the prohibition of use and with the procedure for investigation to be carried out by the Secretary-General of the United Nations in response to allegations of use, actually made it rapidly possible to test the receptiveness of States. The two draft resolutions were, of course, intended to elicit a consensus, even if only to consolidate the breakthrough, achieved the year before in that connection and marked for the first time by the adoption, without a vote, of the resolutions on chemical weapons. But, the impact of recent developments in the Iran/Iraq conflict made the quest for unanimity even more delicate and more necessary. Simultaneous adoption of these two texts, presented by the Chairman of the First Committee, Ambassador Roche of Canada, made it possible to form some idea of the balance needed for the Paris Conference between an

explicit and specific reference to the recent events and the necessity of involving all members of the international community in the definitive prohibition of chemical weapons.

The second stage was "informal multilateral consultations" on preparations for the Paris Conference, which began on the same day as the adoption of the two resolutions, on 16 November (but not beforehand so as not to interfere with the work on these important documents). Three open-ended meetings, organised outside the First Committee with the active and valuable collaboration of the Secretariat services of the United Nations, made it possible, without procedural constraints, to muster about 100 delegations in order to select the most appropriate topics for the Paris Conference and to consider its proceedings and organisation. The French delegation, which as host country, presided over these meetings, had emphasised, when announcing on 20 October the dates of the Conference in the First Committee, the close link which, in its opinion, existed between reaffirming the Geneva Protocol of 1925 on the prohibition of use and the impetus to be given to negotiating a convention on total prohibition. After this link was confirmed in resolution 43/74 C, it proposed, at the start of these consultations, that the work should be focused particularly on five topics: reaffirming the Protocol; starting from a general condemnation; giving an impetus to the Geneva negotiations, taking into account the risk of proliferation; and, finally, supporting the role of the United Nations, in particular that of the Secretary-General. After some 50 delegations had made their statements at these three meetings in New York, France drew up an informal list of the topics and proposals which had been discussed on that occasion, in order to provide the respective capitals with an initial inventory of the facts before continuing the political preparatory work. The French delegation had also pointed out that, in its opinion, it would be advisable to prepare, stage by stage, a short but comprehensive final document of a political nature, which would be drafted during the Conference itself.

At the end of that session of the First Committee of the General Assembly—an irreplaceable forum which facilitated the preparations for the Paris Conference in a very short time—the work was transferred to Geneva and to the various capitals. In order to obtain the opinions, reactions and suggestions of the governmental authorities directly, the host country then organised, from 20 November to 20 December, a dozen missions to non-aligned countries and China, headed by Ambassador Claude Arnaud, counsellor to President Mitterrand, who

then assumed the functions of Secretary-General of the Conference. At the same time, all the capitals were consulted on the draft rules of procedure of the Conference, which were established on the basis of the rules of procedure in force in the General Assembly, and on the composition of the Bureau.

The resumption, at the end of November in Geneva, of the intersessional work of the *ad hoc* Committee on Chemical Weapons of the Conference on Disarmament also made it possible, in mid-December, to organise a further series of three informal, multilateral meetings of consultation at which France proposed a "draft working paper," which, in addition to incorporating the above-mentioned five topics, was intended to include all the topics put forward at the New York consultations. This draft served as a basis for the work and statements of the 90 delegations present. At the end of these consultations, the delegation of the host country announced that it would, on 3 January, distribute the amended and fuller text of the "working paper" as a basis for the draft final document to be prepared by the Committee of the Whole of the Paris Conference.

The Conference

At the inaugural meeting on 7 January 1979, a short statement by Federico Mayor, Director General of UNESCO, was followed by an address by Secretary-General Javier Perez de Cuellar, who pointed to the particular character of chemical weapons as "more horrifying and more barbarous than others" and whose rejection long ago had led to codification of the prohibition of their use. He then referred to the investigative work being carried out under his authority in response to allegations of use in order to emphasise the need to improve the procedures—so as to ascertain the facts more quickly and more accurately— and added that the updated procedure would be more effective in deterring resort to chemical weapons. He considered that the resolutions adopted by the General Assembly showed recognition of the fact that world-wide elimination of these weapons would not impair the security of any country and that, on the contrary, the international community would have everything to lose if such weapons were commonplace. While acknowledging the complexity of the problems arising from a total and definitive prohibition, he considered that it was necessary to expedite the negotiations in Geneva and noted the close link between the 1925 Protocol and the future convention.

President Mitterrand then welcomed the 149 countries participating in the Conference, on behalf of the French people, and noted that the

rapidity with which it had been convened testified to universal support of the recent demand that the world should be rid of the threat of chemical weapons. He stated that the additional manifestation in furthering of the disarmament effort had been strengthened by a sense of irreversibility in face of the ravages inflicted by that weapon.

> "We have recently witnessed the horror of that weapon; let us not go over it again. It is not a matter of forgetting; what we need is to lay down the law so that it will never happen again. Your presence here shows that awareness of the danger is very widespread and deeply felt."

After commending the perseverance, vigilance and conciliatory spirit of the negotiators working on the draft convention on total prohibition, he recalled that the purpose of the Paris Conference was not to conclude the convention, nor even to hold technical discussions on the numerous questions under consideration at Geneva, the great difficul- ties of which must not be overlooked, particularly those related to verification and security in the transitional period. He expressed the hope that every participant at Geneva would do his utmost to expedite the work.

He said that the Paris Conference should not analyse the possible shortcomings of the Geneva Protocol of 1925 or seek to rectify them: the Protocol was the only international legal instrument dealing specifically with chemical weapons, and would remain so until the convention entered into force. It would be disastrous to amend it, but it must be confirmed. Before concluding with a reference to the recent or imminent headway made in nuclear and conventional disarmament, with a tribute to the decisive role played by the Secretary-General of the United Nations in changing the world's political climate in the last few years, and with an appeal to condemn chemical weapons unconditionally and irrevocably, he summed up the issues of the Conference in these terms:

> "In my opinion what is expected of those assembled here is the following: a solemn proclamation that States refuse to use chemical weapons and deem it imperative to wipe them from the face of the earth; and a reminder of a legal, political and moral prohibition, an express and fervent determination to prohibit not only the use but also the production, stockpiling and transfer of such weapons. These are the two objectives of our Conference. They are interrelated. Total prohibition will not be possible unless we reaffirm today the prohibition of their use. This prohibition will, in its turn, be all the better guaranteed once their production, stockpiling and transfer are no longer possible. Thanks to the acceleration generated by your Conference, thanks to the commitment

> which will be renewed and enhanced there, the Geneva negotiations will move forward, I hope, with added vigour. Being too serious for us to act hastily or precipitously, the issues dealt with there are also too serious for us to move at a slow pace that would allow dangerous projects time to take shape, and established situations to be perpetuated, while those whose hands are empty would be left unprotected."

At the end of this meeting, the Conference proceeded to elect as its President Roland Dumas, Minister for Foreign Affairs, as had been agreed by the participants. It then adopted its agenda, its rules of procedure and the composition of its Bureau.

So far as the actual debate is concerned, it is difficult to summarise in a few pages the 105 statements made during the five days of the Conference, 60 of which were delivered by the Ministers for Foreign Affairs of the countries on the list of speakers. Repeated references to the expected topics, namely, condemnation of the use of chemical weapons, necessary compliance with the Protocol of 1925 and the importance of the impetus to be given to the work in Geneva for concluding a convention on the prohibition of chemical weapons were included in almost all the statements. This wide concurrence of views laid the ground for the final consensus and made it possible to assess the determination of participating States. At the same time, it did not prevent the participants from expressing various specific points of view, which also contributed to the importance of this meeting.

In this connection it may be useful to outline, by geographical group, the main points of interest raised in the statements of delegations. These groups did not play a particular role in the meeting, but they may serve as points of reference for illustrating the major concerns of the various participants.

The speakers from the group of Western European and other States drew attention, with more or less emphasis, the need to take national action in order to prevent proliferation pending the conclusion of the convention. Some, including the United States, broached directly the question of co-ordinating such activities, whereas others referred *en passant* to the usefulness of informal consultations. Turkey warned against any effort to transfer to the context of chemical weapons a rationale peculiar to the nuclear non-proliferation treaty of 1968. It also criticised the idea of a chemical weapon free zone in the Balkans, proposed by Greece, pointing out that the very mobility of chemical weapons made that idea totally impracticable. Similarly, there were substantial differences of opinion concerning the deadline for signing

the convention. The Vice-Chancellor and Minister for Foreign Affairs of the Federal Republic of Germany thought that it should be possible to conclude it in 1989. Several Western countries, including the United Kingdom, the United States and Japan, warned the Conference of the risk of concluding the convention without solving the pending problems.

The Minister for Foreign Affairs of Spain, speaking on behalf of the twelve countries members of the European Community, expressed the view that recent events had highlighted the urgent need for total elimination and that the Conference ought to give a fresh impetus to the Geneva negotiations; the twelve called upon all participating States to accede to the Protocol and advocated the exchange of information as a measure of confidence. They were also prepared to co-operate with the Secretary-General in the discharge of his responsibilities.

It should also be noted that the statement of George Shultz, Secretary of State of the United States, the first to be delivered in the general debate and only a few weeks after the events in the east Mediterranean connected with the "Rabta affair", was considered by all as a sign of moderation.

In the opinion of the Minister for Foreign Affairs of Sweden, the use of chemical weapons, which was already inadmissible, should become impossible. The reaffirmation in Paris of the prohibition set forth in the Protocol was a first step towards concluding the convention.

As regards the East European States, the most striking statement was the announcement by the Soviet Foreign Minister, Mr. Eduard Shevardnadze, that his country would begin in 1989 to destroy unilaterally part of its chemical stockpile. He also emphasised the urgent need to conclude the convention and stressed the opening which his country had made in the field of chemical weapons in 1988. More generally, all the countries belonging to that group pointed out that the Paris Conference had been held at a particularly propitious time, marked by an improvement in international relations following the Treaty between the United States and the Soviet Union on the elimination of their intermediate-range nuclear forces, and underlined the importance of global action on disarmament. Apart from that general position, however, Romania was the only country to persist, as it had announced in Bucharest, on the idea of a close link between chemical disarmament and nuclear disarmament.

The Eastern European countries also criticised the United States binary programme and the attitude of "other countries" which were

based on the concept of "chemical deterrence". They considered that, with the necessary political will, the convention could be signed as early as 1989, and they all expressed their intention to be signatories from the outset. In the meanwhile they declared themselves in favour of measures for reducing the risks of proliferation either through export controls or chemical weapon free zones.

Following the example of other participants, the speakers from the Middle East and the Maghreb all stressed the need to abide scrupulously by the provisions of the Geneva Protocol of 1925. The Minister for Foreign Affairs of Iran spoke on that point at length, referring to the reports prepared by the Secretary-General's missions of investigation on the use of chemical weapons. All these countries also stressed the need to conclude a convention on prohibition.

The representatives of these countries also drew attention to the danger to the zone created by nuclear armament, which they attributed to Israel. Consequently they requested the establishment of a link between nuclear disarmament and chemical disarmament, owing to the "indivisible character" of security which they believed was affirmed in the Final Document of the first special session of the General Assembly devoted to disarmament.

Some countries, such as Egypt and Algeria, went further, declaring that, pending the completion of the Geneva negotiations, there could be no question of applying to chemical weapons so discriminatory a rationale as that of the non-proliferation treaty on nuclear weapons. The countries of the region which were not members of the Conference on Disarmament also expressed the wish to be associated in the near future with the work in Geneva.

The Israeli Minister for Foreign Affairs drew attention to the danger to the zone deriving from the holding of chemical weapons by certain Arab countries, and recalled the proposal made by his country at the third special session of the General Assembly devoted to disarmament in June 1988 to establish a chemical weapon free zone in the Middle East. That exchange of views gave rise to a lively debate resulting from exercise of the right of reply.

Several of the countries of the African group remarked that the shortcomings of the Geneva Protocol, exemplified by recent events, made the conclusion of the convention more urgent. Cameroon and Zaire announced their intention of acceding to the Protocol. Some countries, such as Ghana, considered that controls on exports of chemical

precursors must be established pending adoption of the convention, while others stated that that was no more than a dangerous and discriminatory stopgap device. Many heads of delegations expanded on the theme that the future treaty should be non-discriminatory by stressing the need to take into account Africa's development imperatives, and the Minister for Foreign Affairs of Senegal emphasised the need to maintain access to civil chemical technologies.

The representatives of the countries of the African group also denounced the destabilising effect of nuclear armament, which they attributed to South Africa, and left the hall during the statement of Foreign Minister Pik Botha as a token of their refusal to recognise the legitimacy of his Government. Several representatives, in particular those of Cameroon, Ethiopia and Zambia, also demanded that the continent should be made a denuclearised zone (the South African Minister did likewise). Lastly, the group was unanimous in condemning the disposal of toxic and nuclear waste in Africa.

The Cuban and Nicaraguan Ministers in the group of Latin American States criticised the action of the United States in the region and the production of binary weapons, and referred to the need to establish a zone free of foreign presences in Central America and the Caribbean. They supported the Soviet proposals on conventional and chemical disarmament and expressed the view that the convention could be concluded in 1990.

All the other heads of Latin American delegations considered that reservations to the Protocol of 1925 constituted an erosion of the existing "international norm" with regard to chemical weapons, and therefore suggested that the States which had entered such reservations should withdraw them. On that occasion the representative of Haiti announced that his country would soon accede to the Protocol without any reservation. As regards the need to conclude the convention as quickly as possible, the head of the Peruvian delegation took the view that States not members of the Conference of Disarmament must be included as observers at the final stage of negotiation in order to avoid any risk of discrimination.

These countries also believed that, in the meanwhile, more attention should be given to the question of vertical non-proliferation than to horizontal non-proliferation, which might deprive the developing countries of open access to civil technology. Ecuador proposed that the United States and the Soviet Union should reduce their chemical

arsenals by 10 per cent and allocate the amounts thus saved to reducing part of the debt of the countries of the third world.

So far as the Asian States are concerned, India and to a lesser extent Pakistan were opposed to any measures for preventing proliferation, whether in the form of export controls or of chemical weapon free zones, because of their discriminatory nature. In their opinion, what was needed was to discard any rationale of the non-proliferation treaty type and to "point the finger" at those who were responsible for vertical proliferation. On the other hand, several States of the region were in favour of applying transitional measures pending the entry into force of the convention, such as the creation of chemical weapon free zones (North Korea, Afghanistan, Laos, Vietnam), the establishment of a moratorium on production (Mongolia), or the declaration of possession of stockpiles (Malaysia).

Noting that the trend of the international situation was favourable to disarmament, the Minister for Foreign Affairs of China expressed the view that the occasion must be seized upon in order to expedite the work in Geneva. The principal countries owning weapons should start to disarm; all countries capable of producing such weapons should stop developing and producing them.

Among the States of the Pacific, Australia and New Zealand recalled that they had withdrawn their reservations to the Protocol of 1925 and they extolled the merits of the South Pacific denuclearisation Treaty, which was a "rampart" against harm to the environment which nuclear weapons, but also chemical weapons, were liable to inflict. The head of the Australian delegation drew attention to the role played by his country in preventing the proliferation of chemical weapons by developing regional consultations and the exchange of information among the Western countries on measures for monitoring the export of sensitive chemical products. The Cook Islands and Papua New Guinea, for their part, had established a link between chemical disarmament and nuclear disarmament.

It must be pointed out that the representative of the Holy See made a distinction in terms of nature between nuclear weapons, which had not made victims since the Second World War, and chemical weapons, which continued to be used against defenceless populations, and which could, *inter alia,* be used by terrorist groups.

While the general debate proceeded, the Committee of the Whole, under the chairmanship of Finland, began its work and, on 8 January,

took note of the draft final declaration prepared by Finland on the basis of the "working paper" distributed on 3 January. Monday, 9 January, was earmarked for the group meetings to enable them to study it in depth, and this also enabled the non-aligned countries to submit all their proposed amendments at the end of the day.

The Chairman of the Committee, Kalevi Sorsa, Minister for Foreign Affairs of Finland, then held very lively consultations and, on 10 January, submitted a new version of the draft Final Declaration. In the light of the various reactions, he announced that consideration of the remaining difficulties would be assigned to a group of "friends of the Chairman" from approximately 25 countries who would confer during the night. With Arno Karhilo, Under-Secretary of State for Foreign Affairs of Finland, in the Chair, this group dealt with the most controversial questions, such as reservations to the Protocol of 1925, ways of giving greater impetus to the Geneva negotiations, the possibility of setting a deadline for signing the convention, the different aspects of non-proliferation, and the relationship between chemical disarmament and general disarmament. A text agreed upon in the group was drawn up about 2.30 a.m. on 11 January; Mr. Sorsa submitted it in the morning for approval to the Committee of the Whole which, after some minor changes and various comments for clarifying positions, endorsed it by consensus.

At the same time, since the general debate had ended, the President of the Conference requested the plenary assembly, on the morning of Tuesday 11 Janaury, to adopt the report of the Credentials Committee. The report included a reference to the communications from delegations concerning the credentials of the delegations of Democratic Kampuchea and South Africa, which, after compromises were reached, did not impede adoption of the document. The representative of Pakistan then mentioned his delegation's reservations concerning the credentials of the Afghan delegation.

In the afternoon of the same day, the President of the Conference requested Mr. Sorsa to submit to the plenary assembly the draft of the final declaration formulated by the Committee of the Whole. Following his report, two delegations wished to make statements and requested that their remarks be included in the record of the Conference.

The Romanian representative recalled the importance which his country attached to the elimination of all types of weapons of mass destruction: any measure for prohibiting chemical weapons must

therefore be part of the process prohibiting that entire category, in particular nuclear weapons.

The Syrian representative presented an argument similar to that of Romania for its application to the regional context; he considered that paragraph 6 of the draft final declaration established indirectly a link between the prohibition of chemical weapons and that of nuclear weapons.

The President of the Conference took note of these statements and pointed out that these two delegations did not object to the Conference's adoption of the final declaration.

After a final clarification resulting from a statement by the representative of Grenada, the President of the Conference read out the text of the final declaration, which was adopted by consensus and included in the Final Act of the Paris Conference.

The Final Declaration

It is not possible to cover in one article all the developments which led up to the last version of the text, and even less possible to appreciate all its implications. In that connection, the first comment that may be made regarding the document is that it is brief, clear and precise, in other words self-sufficient. But, at the same time, it is obvious that each of its sentences is the outcome of compromises which call for some comment.

So far as the overall framework is concerned, the order followed is intended to present a politically coherent sequence: general condemnation of the use of chemical weapons, reaffirmation of the Protocol of 1925, guidelines for the Geneva negotiations, awareness of the danger connected with the existence and dissemination of chemical weapons, the role of the United Nations, and reference to general and complete disarmament.

Paragraph 1 begins with a general reference to peace, security and disarmament and places the more specific question of chemical weapons in the proper perspective. It may be useful to remember in this connection the choice that was made, in the course of preparation and then in the work of the Committee of the Whole, not to have recourse to the rather frequent device of a preamble which might weaken the political message of the Conference and lead to repetition.

The opening sentence is also the outcome of the compromise that was reached concerning the place in the text of the reference to other

aspects of disarmament. Disarmament is taken up mainly at the end, but mentioned at the very beginning before chemical weapons as such are taken up.

This paragraph is of particular importance inasmuch as it embraces a solemn commitment not to use and a condemnation of use emanating from all participating States, including those which did not sign the Protocol of 1925, and therefore confirms the universal character of the norm laid down therein. It goes without saying that its wording was particularly delicate because it was necessary to take into account the difference of status *vis-a-vis* the Protocol, and the reservations entered by certain signatories. The reference to recent events appears as a compromise resulting directly from General Assembly resolutions 43/74 A and C. This is followed by humanitarian assistance, as requested by several delegations, but in general terms in order to cover the past and, if necessary, the future. There could not be any provision for coping with a further use of chemical weapons, which is precisely what has to be avoided.

Paragraph 2 starts with a particularly important sentence which, following the general commitment to non-use in paragraph 1, confirms that the authority of the Protocol of 1925 extends beyond its signatories because all participating States recognise its importance and validity. Then comes the solemn reaffirmation by the States Parties of the prohibition laid down in the Protocol and the appeal addressed to other States to accede thereto. This appeal was both anticipated and answered because, on the occasion of the Paris Conference, twelve countries ratified the Protocol or announced their intention to do so.

Paragraph 3 concerns the current negotiations in Geneva on the future Convention: it is the most substantive paragraph in the Declaration and obviously attracted the attention of delegations quite particularly. After affirmation of the objective to be achieved, it was decided to describe succinctly the main features of the convention without going into detail, so as to avoid a self-defeating accumulation of descriptive details which would have prompted the participants to interfere in the work of the negotiators.

Next comes the key sentence, which calls upon the Conference on Disarmament to "redouble its efforts, as a matter of urgency, to resolve expeditiously the remaining issues and to conclude the convention at the earliest date". The wording, both precise and insistent, of this appeal was the outcome of a long and lively debate on the question of the

date for concluding the work. Was it necessary or not necessary to specify a deadline? Several participants, and in particular the countries belonging to the non-aligned group, proposed mentioning the date of 1990, but allowing for some flexibility. Others, and in particular the countries belonging to the Western group, argued that it was better to avoid specifying such a time-limit which would be artificial and even counterproductive if, for one reason or another, the period could not be strictly adhered to. In this connection the solution agreed upon may be considered a balanced and realistic compromise. The stress is laid heavily on the rapid conclusion of the negotiations without procrastination but also without subjecting the negotiators to an arbitrary constraint; at the same time, the date of 1990 was discussed at length and this debate clearly revealed the general view that the negotiations should be concluded in a few years' time.

The next sentence was drafted with a view to engaging all States in the pursuit of negotiation, while bearing in mind the diversity of their individual situations with regard to chemical weapons and the negotiations. Then comes a particularly significant statement of position which, in fact, recognises the right of each State to join the negotiations while respecting the status of the Conference on Disarmament. This provision was implemented in less than two months with the admission of 10 non-member countries, namely, Bangladesh, Chile, the Republic of Korea and the Democratic People's Republic of Korea, Iraq (which had applied for eight years without success), the Libyan Arab Jamahiriya, the Syrian Arab Republic, Senegal, Tunisia and Vietnam.

Paragraph 4 also gave rise to long and delicate negotiations, because it concerns the controversial subject of "non-proliferation", regarding which the debate in the plenary assembly showed how wide the range of opinions was.

The text adopted consisted in recognising the gravity of the risk while placing the persistence and dissemination of chemical weapons on the same level. It then stresses the fact that the best response is the convention itself and that the efforts made in the meantime by States should be within that context. The campaign against the proliferation of chemical weapons is such that it cannot be separated from total prohibition.

The text of paragraph 5 on the United Nations did not present the same degree of difficulty. It should be pointed out, however, that after general approval of the role played by the United Nations, this paragraph

enumerates the practical implications thereof in precise terms: the third sentence confirms support for the steps taken by the United Nations in conformity with its Charter, which covers the hypothesis of a recourse to sanctions, and the last two sentences are intended to facilitate the specific investigative action of the Secretary-General.

The last paragraph, on general disarmament, contains a double compromise because of its place, as was already mentioned, and because of the wording of the reference to the Final Document of the first special session of the General Assembly devoted to disarmament.

If we now stand back and view the text as a whole as the product of an intensive mobilisation of the international community, we may find that it has these results:

1. The final Declaration first of all reinforces the prohibition concerning the use of chemical weapons. After the repeated violations of the last few years, it will henceforth be much more difficult for a State to consider recourse to such weapons, whatever the circumstances may be. The issue of sanctions has not been directly addressed, but it now appears appropriate in cases of violation.
2. It also provides an organisational outline of the work and responsibilities of multilateral authorities and States in the intermediate period up to the entry into force of the future convention. This coherent distribution of the tasks in the context of a fluid situation is a tool for emphasising the need to conclude as rapidly as possible the current negotiations on the convention for total prohibition. It is, so to speak, the "vanishing-point" which brings the whole picture into focus. Full implementation of this outline is therefore closely linked to the progress of the work in Geneva.
3. The Declaration confirms the specific character of chemical disarmament; more precisely than hitherto, chemical disarmament is based on a legal norm and on a historically recurrent moral reaction; it has universal implications because of the precariousness of partial solutions; it makes it a rule to cover all aspects of chemical weapons including the issue of non-proliferation; finally, it is unconditional, and its progress cannot be dependent on other fields or on the particular case of a given region or State. It must be noted that the "link" between nuclear disarmament and chemical disarmament,

requested by certain countries, was not taken up by the group of non-aligned countries, and the Declaration has subsequently confirmed that chemical disarmament should be sought for itself.

This initial evaluation must not, however, overlook the fact that certain commentators have sometimes criticised the shortcomings of the Paris Conference, even though a partial response can be given.

The Conference encouraged "propaganda" in favour of chemical weapons. There is no doubt that the Paris Conference brought into the limelight the spread of chemical weapons, which has greatly increased in recent years without much notice being taken. In this connection, it may be said that it was not too soon to negotiate total prohibition openly instead of perpetuating a dangerously ambiguous situation.

The Conference did not produce satisfactory results as regards non-proliferation. But the foregoing summary of the gist of the general debate in the Conference has shown to what extent the positions diverge, and the formulation of paragraph 4 shows that a balance was struck on many points; any effort to go further on this subject in the text would have elicited excessive requests and jeopardized other essential aspects of the Declaration.

The Conference polarised opposition between the North, anxious about proliferation, and the South, intent on acquiring what was hastily and mistakenly called the "weapon of the poor". But the substantive and unambiguous content of the Declaration is the best possible refutation of this grotesque argument: the Paris Conference was a success because "the South" wishes, just as much as "the North", to rid itself of a particularly horrendous weapon which, far from preventing war, makes it even crueler. If any difference exists, it concerns the priorities, procedures and deadlines and does not bring two well-defined camps into conflict.

Lastly, the Declaration should have covered other aspects, in particular the question of biological weapons, which was also included in the Protocol of 1925. While it may be replied that the solemn reaffirmation of the Declaration applies also to that category of armaments already prohibited by the Convention of 1972, it is true that a specific appeal for greater vigilance by the international community on this subject would have been useful. At the same time, it must be remembered that this Conference of five days had to cover all the aspects of chemical disarmament and that the inclusion in its agenda

of another item could have affected the quality of work on the main subject.

With all due respect, it may therefore be said that the Paris Conference quite successfully achieved the immediate objectives of its originators. Throughout the preparatory period, they had sought to emphasise consistently what such a forum was capable of doing, and also what it could not or should not do.

At the same time, it is interesting to note that this meeting gave new life to the somewhat out-of-fashion *ad hoc* conference system, in that it differed from the United Nations conference formula which has become the classic and almost exclusive norm in multilateral diplomacy. The Paris experience has shown that, far from being competitive, these two forms could be complementary, and this study has on several occasions emphasised the importance of good co-ordination with the United Nations. While refraining from systemising, it is useful to note that the use of a special procedure for addressing a particular subject rapidly and substantively, and with universal participation, may, in certain circumstances, strengthen the multilateral system and the role of the United Nations.

But, besides these initial results, it is noteworthy that by assembling as it did, in truly unprecedented conditions, the international committee surprised itself in a way. There were quite a large number of sceptics and worriers before the meeting. But, in the evening of the last day, the awareness that a turning point had been collectively achieved was greater than the sense of relief. It is for each participating State now to elucidate an event which, given its magnitude, cannot be explicated immediately. The initial success must now be followed up, and that is the most challenging aspect of the process set in motion by the Declaration of 11 January. The international community has quite clearly vowed that it will be capable, in this sector at least, of overcoming its temptations and contradictions; it must now hold firm. Once the regime of total prohibition in accordance with the convention is implemented, the Paris Conference will have achieved its true objective.

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THE DESTRUCTION, REMOVAL OR RENDERING HARMLESS OF IRAQ'S CHEMICAL WARFARE CAPABILITY

At the begining of 1991, it was widely believed that Iraq possessed a formidable and sophisticated capability to wage chemical warfare. Reports in the international media over many years had documented both Iraq's extensive chemical weapons production capabilities and the role foreign suppliers of both equipment and chemicals play in establishing those capabilities. Moreover, despite being a party of long standing to the 1925 Geneva Protocol, which prohibits the use of chemical weapons in war, Iraq had shown no hesitation about using chemical weapons reports in the international media of Iraqi use of chemical against the Kurds in the 1970s were following, late in 1983, by Iranian complaints to the Secretary- General of the United Nations that Iraq was using chemical weapons against Iranian forces. As a result of investigations carried out by the United Nation over the period 1984 to 1988 and of the continuing interest of the international community in the subject, Iraq's extensive use of chemical weapons in the Iran-Iraq war is by now well documented.

Faced with this situation and the widespread belief that the use of chemical weapons against the Coalition's ground forces was highly probable, Coalition planners placed a high priority on targeting Iraq's chemical warfare assets when Operation Desert Storm commenced on 16 January 1991. These assets were targeted from the outset of the campaign, and the extensive air strikes against the facilities and storage depots known, or suspected, to have been associated with Iraq's chemical warfare programme over the six-week period from the middle of January to the end of February 1991 inflicted considerable damage on them.

The formal end to the hostilities in the Gulf War came with Iraq's grudging acceptance, on 5 April 1991, of Security Council resolution 687 (1991) of 3 April. This resolution placed a number of obligations on Iraq, including, in section C of the resolution, the obligation to accept the elimination of its weapons of mass destruction, that is, its chemical and biological weapons and its ballistic missiles, and to forswear the acquisition or use of such weapons in the future.

Oversight of the elimination of Iraq's chemical and biological weapons and its ballistic missiles was entrusted to a Special Commission (UNSCOM) established specifically for this purpose. The Special Commission was also empowered by resolution 687 (1991) to conduct immediate on-site inspections in Iraq based on Iraq's declarations and the designation of additional locations by the Special Commission itself.

In the area of chemical weapons, Iraq was required:

(a) To accept unconditionally the destruction, removal or rendering harmless under international supervision of its chemical weapons and all stocks of agents and all related subsystems and components and all research, development, support and manufacturing facilities;

(b) To submit to the Secretary General within 15 days a declaration of the locations, amounts and types of all items specified above;

(c) To yield to the United Nations Special Commission possession of all the above-mentioned items for destruction, removal or rendering harmless, taking into account the requirements of public safety; and

(d) To undertake not to use, develop, construct or acquire any of the items listed above.

Iraq was also invited to reaffirm its obligations under the 1925 Geneva Protocol, which it did in its letter of 11 April accepting the terms of the resolution.

Iraq's Chemical Warfare Capabilities: The Size of the Task

Iraq's initial declaration of its chemical weapons (CW) capabilities made on 18 April to the Secretary-General was quite inadequate. After much further probing by the Special Commission, a more detailed picture emerged, and the Executive Chairman of the Special Commission announced on 30 July that the total number of chemical-filled munitions declared by Iraq to the Special Commission was at that stage some 46,000, or over four times the amount in the original declaration of 18 April to the Secretary-General.

Of the 46,000 chemical-filled munitions, some 20,000 are 120-mm CS-filled bombs, which the Special Commission has confirmed were destroyed by the Coalition bombing, as notified by Iraq. The remaining munitions comprise some 14,400 munitions filled with mustard agent (12,634 155-mm artillery shells and 1,775 aerial bombs of various types), and 11,000 munitions filled with sarin (10,780 122-mm rockets, 200 aerial bombs and 16 Al Hussein ballistic-missile warheads) and binary agent (336 aerial bombs and 14 Al Hussein ballistic missile warheads). Many of these were damaged or destroyed as a result of the Coalition bombing. The amounts found by the Special Commission's inspection teams tallied closely with the Iraqi declarations. Further details on this aspect and a fuller description of the munitions are given in annex I.

In addition Iraq declared more than 350 tonnes of bulk chemical agent, said to compose mustard (280 tonnes were declared but only 205 tonnes were found by the Special Commission), sarin (75 tonnes declared, 78 tonnes found) and some "spoilt" tabun (quantity not declared, but subsequently found by the Special Commission to be around 50 tonnes), all stored at the Al Muthanna site.

The detailed survey of the Al Muthanna site carried out by the Special Commission's fifth CW inspection team (UNSCOM 17) in October-November indicated the presence on site, in addition to the agents GA, GB, GF and the GB/GF mixture, of small research-scale quantities of the agents s-butyl sarin, n-butyl sarin and ethyl sarin (GE). UNSCOM 17 also found small amounts of compounds that might be expected from the decomposition of VX consistent with the oral advice of Iraqi officials to the first and second CW inspection teams (UNSCOM 2 and UNSCOM 9) that it had been made in laboratory quantities only. Thus it is clear that Iraq has made a wide variety of CW agents, not all of them declared to the Special Commission.

UNSCOM 11, the third of the Special Commission's CW inspection teams, found 6,400 empty aluminium liners for 122-mm sarin rockets and some CS-filled hand grenades which should have been declared to the Special Commission but were not. Other inspection teams have found small numbers of bomb casings and the like which also should have been declared but were not. In all other respects, however, the findings of the Special Commission's CW inspection teams have been broadly consistent with the Iraqi declarations.

The total quantities of chemical-filled munitions, stocks of bulk agent and precursor chemicals declared by Iraq to the Special Commission are as follows:

Chemical-filled munitions	45,755
Empty munitions	78,675
Tonnes of bulk agent	355
Tonnes of precursors (annex II)	3,173

The amounts discovered in the course of the Special Commission's inspections agree for the most part, but differ in two significant respects: the declaration for the mustard agent (see above) and the declaration for the precursor phosphorus trichloride (see annex II for details).

The amount of chemicals in the munitions is not known exactly, but on the basis of the Iraqi declarations and taking into account the findings of the Special Commission's inspection teams, should be around 200 tonnes. The Special Commission is therefore faced, overall, with the task of ensuring the destruction, removing or rendering harmless of some 134,500 munition casings, 550 tonnes of chemical agent and 3,200 tonnes of precursor chemicals. This is not a large amount when compared with the stockpiles currently held by the United States and the former Soviet Union, but it is a very considerable stockpile for a developing country. The destruction of these assets will be a formidable task for a body with the limited resources of the Special Commission.

Facilities which are also covered under resolution 687 (1991) and which therefore come to the attention of the Special Commission are the Al Muthanna State Establishment, Iraq's declared chemical warfare production establishment, and the production facilities contained therein, and any other undeclared production facilities that may come to the attention of the Special Commission in the light of its inspection activities in Iraq.

The Special Commission's Approach

From the outset, the Special Commission addressed the conceptual basis for the destruction of Iraq's chemical warfare agents and precursor chemicals. Following the first meeting of the Special Commission's Chemical and Biological Weapons (CBW) Working Group, held in New York from 6 to 17 May, the following decisions were taken:

(a) The preferred method of destruction of chemical warfare agents would be incineration, although other processes such as chemical degradation by caustic hydrolysis were not ruled out;

(b) In accordance with the provisions of the draft chemical weapons convention currently being negotiated in the Conference on Disarmament in Geneva (the so-called "rolling text"), methods

of disposal which had been used in the past, such as land burial, dumping at sea and open-pit burning, were categorically rejected;

(c) The destruction process would take place in Iraq;

(d) Wherever practicable, chemical munitions at locations in Iraq would be taken to one central point in Iraq for destruction, rather than destroyed *in situ.* This central destruction point would be the Al Muthanna State Establishment, unless it was found on inspection to be unsuitable for this purpose;

(e) One of the tasks of the first CW inspection, to take place early in June, would be to assess the suitability of the Al Muthanna site for the destruction process;

(f) Those munitions that are too dangerous to be moved would have to be destroyed *in situ,* including, where necessary, by explosive demolition.

At the time of the first meeting of the Working Group, the Special Commission was unaware of the existence of the 20,000 CS-filled mortar rounds, as it did not receive this information until late in May. At its next meeting, late in June, the Working Group decided that, despite the uncertain designation of riot control agents (RCAs) as chemical warfare agents, the mortar rounds should fall within the Special Commission's mandate. The reasons were twofold: first, Iraq had declared them to the Special Commission as part of its chemical weapons stockpile pursuant to resolution 687 (1991); secondly, the quantity and type of munition declared indicated that their likely intended use by Iraq went well beyond mere riot control.

To provide expert advice on the complex web of technical issues which the destruction of chemical weapons presented, the Special Commission established a Destruction Advisory Panel comprising experts on the destruction of chemical warfare agents from Canada, France, the Soviet Union, the United Kingdom and the United States, together with a representative of the World Health Organisation. The Panel met for the first time concurrently with the CBW Working Group late in June. It has now met three times and some of its members have also visited Iraq for detailed discussions with Iraqi officials on the technical aspects of the proposed destruction processes.

The destruction of chemical weapons carried out elsewhere in recent years indicates that it can become an extremely lengthy and expensive process. In carrying out the directive of the Security Council, the Special

Commission is very conscious of the link between section C of resolution 687 (1991) and paragraph 22 of the resolution, that is, the link between the elimination of Iraq's weapons of mass destruction—including, of course, its chemical weapons—and the current ban on the export of oil and other commodities produced in Iraq. This nexus clearly indicates the need for the Special Commission to proceed as quickly as possible with the destruction process, taking account, of course, of public safety as required by the resolution.

Initial Contacts with Iraq

On 9 June 1991 Iraq proposed to the Security Council that it should carry out the destruction of its chemical weapons in accordance with procedures to be agreed by, and under the control of, the Special Commission's technical experts. This proposal by Iraq has formed the basis of the Special Commission's approach to the subject of destruction, and there have been intensive exchanges at the technical level between the Commission and Iraq on this subject.

The first set of technical discussions with the Iraqi experts took place in mid-August. It soon became apparent that the experts had already had considerable experience in the emptying of chemical weapons munitions and the destruction of CW agents; this skill was attained at the end of the Iran-Iraq war when Iraq decided to dispose of munitions which either had gone beyond their normal shelf-life or were leaking. The munitions involved were 155-mm artillery shells and 122-mm rockets. The nerve agent was destroyed by caustic hydrolysis and the mustard by suspension in a solution of calcium hypo-chlorite (bleach).

The Iraqi experts also indicated that they had approximately 200 civilian staff available for the destruction activities, all of whom had been fully trained in the wearing of impermeable protective clothing and respirators and had had previous experience in working with CW agents. The Special Commission has therefore decided to use Iraqi personnel to the greatest extent possible consistent with the directives of resolution 687 (1991), although the utility of bringing in outside contractors or officials from other Governments to assist or even carry out the destruction is also being examined.

Destruction Activities

From an operational perspective, it is convenient to think of the destruction of Iraq's chemical munitions as occurring in the following stages:

(a) Disposal of the declared empty munition casings;

(b) Once the Iraqi declarations to the Special Commission have been verified, transfer of those munitions that are capable of being moved from the declared storage sites to the Al Muthanna site;

(c) Drilling of the filled chemical munitions, draining of the agent contained therein and storage of it in bulk prior to its destruction;

(d) Destruction of the drained munitions casings;

(e) Destruction on site of the bulk agent and the intermediates intended for use in the manufacture of chemical weapons (see annex II).

It is not necessary, of course, for all of these processes to be carried out in sequence, nor is it necessary to await the end of the verification phase of the inspection process in order to commence. Indeed, the destruction process has already begun with the visit of the fourth of the Special Commission's inspection teams to the Al Muthanna site at the beginning of September. That inspection team directed the destruction, by Iraqi personnel, of all unfilled chemical munitions stored at the Al Muthanna site and reconnoitred, selected, and showed to Iraqi officials the locations at Al Muthanna for the collection and storage of bulk agents, chemical munitions and intermediate precursor and other CW-related chemicals and the location for the future destruction operations of chemicals at the site.

In the course of the destruction operations carried out on that occasion, a total of 8,157 unfilled munitions, consisting of six different varieties of bombs, 155-mm artillery shells and 122-mm rockets were destroyed either by crushing with a bulldozer or by cutting up with oxyacetylene torches. Early in October, parts of chemical munitions and 3,672 122-mm rocket warheads were also destroyed. These were the bulk of the unfilled CW munitions at the Al Muthanna site.

At the same time as this process was taking place, the Iraqi authorities were informed that they could commence the transfer of those munitions that could be safely moved from the declared storage sites at various locations in Iraq to the Al Muthanna site. These transfers took place only after the munitions at each location had been inspected by the Special Commission's inspection teams, and they were carried out under procedures laid down by the Special Commission. This process was begun early in September and was virtually completed by mid-November. Those munitions that could not be moved safely will be destroyed *in situ,* probably by explosive demolition.

With the completion of the detailed survey of the Al Muthanna site by the Special Commission's fifth CW inspection team on 9 November, the Iraqi authorities were then instructed to clean up the site in preparation for the next destruction activities. The first of the Special Commission's CW inspection teams, which visited the site in mid-June, found that:

> "Conditions in many areas of the site are hazardous in the extreme. Most major structures on the site have either been totally destroyed or severely damaged as a result of the bombing during the hostilities: few buildings have escaped unscathed. While much unexploded ordnance has been removed, some still remains on the site. The site also contains leaking chemical munitions and the presence of chemical agent was detected in some areas and structures." It concluded that:
>
> "There is a clear need to clean up the site and to commence the destruction process as quickly as possible, bearing in mind the requirement for public safety and the safety of the personnel involved."

In September, a worker at the Al Muthanna site was exposed to nerve agent when a supposedly unfilled 122-mm rocket warhead burst. After a few days in hospital he recovered, but the incident serves as a reminder that the site is an extremely hazardous one and that the destruction process is a protracted and dangerous undertaking.

This clean-up process is now well under way. A particular problem in this respect has been the 6,120 sarin-filled 122-mm rockets stored at Al Muthanna, all of which, as noted above, are leaking. As a temporary expedient pending a final decision on the destruction process to be used for the sarin, the warheads have now been separated from their rocket motors and stored in wooden boxes lined with wood shavings and charcoal at a site designated by the Special Commission downwind of the Al Muthanna site.

The Special Commission has decided that the Iraqi stocks of mustard agent will be destroyed by incineration, as recommended by the CBW Working Group at its first meeting. Deciding on a method for the destruction of the sarin nerve agent has been a difficult and lengthy process for the Special Commission. In its original offer of 9 June 1991 to the Security Council, Iraq proposed neutralisation of the nerve agent by caustic hydrolysis, a method by which, as noted above, Iraqi technical experts later told the Commission in mid-August, they had destroyed nerve-agent stocks at the end of the Iran-Iraq war. The Commission initially had reservations about the Iraqi proposal on the following grounds:

(a) The United States had encountered problems in the past when it had attempted to destroy the nerve agent GB by caustic hydrolysis;

(b) While the hydrolysis of GB was well understood, the hydrolysis of a GB/GF mixture was not understood at all: to the best knowledge of the Special Commission's experts it had never been studied. The problem was compounded by the fact that, in this case, the GB/GF mixture had degraded and thus there were also a large number of degradation products present in the bulk agent. It was also very likely that the presence of GF and the degradation products would cause the hydrolysis mixture to be a two-phase system;

(c) The ability of the Iraqi engineers to carry out the proposed destruction process, taking into account the requirement for public safety, was not at that stage known to the Commission.

When these issues were discussed at the first meeting of experts in Iraq in mid-August, the Iraqi side requested permission to conduct test runs of their proposed destruction processes at two undamaged pilot plants on the Al Muthanna site. A detailed survey of these plants was carried out by the second CW inspection team on 21 and 22 August, and following further technical exchanges and the provision of detailed plans by Iraq for the planned neutralisation process, Iraq was given permission to modify the pilot plant appropriately and to carry out test runs using the precursor D4 as a simulant. These test runs were carried out late in November, the final test run being witnessed by members of the Special Commission.

As with mustard agent, alternative options for the destruction of nerve agents which do not use Iraqi technology and resources are also being examined; a final decision on who will carry out the destruction of the nerve agent has not yet been taken.

The ultimate cost of the destruction process is not known at this stage, but it is likely to be considerable whatever options are chosen. The Special Commission's Executive Chairman has also indicated that the destruction will not be completed before mid-1993.

Disposal of the Precursor Chemicals

It was made clear to Iraq that the intermediates D4 and thiodiglycol would be destroyed. The thiodiglycol will be destroyed by incineration and the D4 by chemical neutralisation. As to the other precursor chemicals—thionyl chloride, phosphorus trichloride, phosphorus

oxychloride and hydrogen fluoride—the Special Commission is prepared to consider, to the extent possible, dealing with these by permitting them to be removed from Iraq. A major consideration underlying this approach was the realisation that destruction of these precursors in the quantities present in Iraq by either incineration or hydrolysis would be a hazardous, lengthy and costly process, giving rise to significant safety and environmental issues; and that removal had much to commend it from the safety, timeliness, economic and environmental aspects. Iraq would of course be required to yield title to these chemicals. On the other hand, Iraq has requested permission to retain a number of these chemicals in the country for legitimate civilian use under the control of the Special Commission. The Commission is considering this request.

Elimination of Other Elements of Iraq's Chemical Warfare Capabilities

In addition to chemical weapons and precursor chemicals, resolution 687 (1991) requires the destruction, removal or rendering harmless of all research, development, support and manufacturing facilities. This is taken of course to embrace not only the facilities themselves but equipment contained in them. The report by the Executive Chairman of the Special Commission on the first six months of the Special Commission's activities notes that:

> "Decisions will have to be taken on a number of dual-use items that have been used or were acquired in order to be used in the prohibited areas. A balance must be found between the requirements of resolution 687 (1991) to destroy, remove or render harmless all such items, on the one hand, and requests from Iraq, on the other, that such items be used for civilian and peaceful purposes."

The facilities in Iraq affected by this provision are the facilities that comprise the Al Muthanna State Establishment, that is, the site at Al Muthanna, the three Fallujah sites, and Muhammediyat stores. Since it produces phosgene, the Al Qa' qa' State Establishment will also be subject to the compliance monitoring regime established by the Security Council under resolution 715 (1991).

In June 1991, the Iraqi authorities requested permission to remove several items of equipment from the stores at the Al Muthanna site to the chlorine plant at Al Fallujah (Fallujah site 2) and the pesticide plant (Fallujah site 3) to enable those plants to produce chemicals for water purification and for pesticide formulation respectively. The Executive Chairman granted these requests, subject to certain strict accounting requirements. The guiding principle that has been established

is that any item of dual-use equipment "tainted" by association with any of Iraq's programmes of weapons of mass destruction shall be liable for destruction unless Iraq requests an exemption.

ANNEX I

Iraqi CW Munitions

Weapon Category	*Agent*	*Declared*	*Found*
Al Hussein ballistic missile	binary sarin	14	14
Al Hussein ballistic missile	sarin	16	16
R-400 aerial bombs	binary sarin	336	336
122-mm rockets	sarin	6120	6352
122-mm rockets[a]	sarin	4660	—
LD-250 aerial bombs[b]	mustard	1100	915
AALD-500 aerial bombs	mustard	675	676
155-mm artillery shells	mustard	12634	12694
120-mm mortar bombs[c]	CS	20000	—

a. Comprising 2,500 at Al Muthanna and 2,160 at Khamisiyah which were destroyed by the Coalition bombing: the numbers are impossible to verify with accuracy.
b. It was impossible to count the 200 LD-250 bombs declared to be at Muhammediyat because of the extensive damage to the facility caused by the Coalition bombing.
c. It was impossible to count the 120-mm mortar bombs declared to be at Muhammediyat because of the extensive damage to the facility caused by the Coalition bombing.

ANNEX II

CW Precursor Declarations

Precursor	*Declared* (*Tonnes*)	*Found* (*Tonnes*)
Intermediates		
Methyl phosphoramidic dichloride(D4)	150	173
Thiodiglycol	144	167
Dual-Use Chemicals		
Sulphur monochloride and sulphur dichloride	6	6
Phosphorus trichloride[a]	2100	1340
Thionyl chloride	273	297
Phosphorus oxychloride	500	596
Total	3173	2579

a. The Iraqis attributed the discrepancy between the declared and found figures for phosphorus trichloride to evaporation and leakage from the containers.

PRINCIPAL TECHNOLOGICAL AND ENVIRONMENTAL ASPECTS OF THE DESTRUCTION OF CHEMICAL WEAPONS

Those countries which, to date, have dealt with the problem of destroying chemical weapons have, as a rule, addressed it in the context of national programmes aimed primarily at the destruction of munitions the condition of which has become critical, and at the destruction of obsolete chemical agents held in storage facilities. As talks progress on global and complete chemical disarmament, the issues connected with the technical solution of this problem are increasingly going beyond national frontiers and becoming the shared concern of all countries throughout the world. The destruction of chemical weapons raises particular apprehension among people who live in the immediate vicinity of storage facilities and in regions where chemical weapons are deployed.

It is essential to guarantee the safety of the destruction methods and the detoxification processes, and to ensure reliable monitoring at all stages of the destruction. The urgency of this problem is stressed in the Agreement between the USSR and the United States on Destruction and Non-Production of Chemical Weapons and on Measures to Facilitate the Multilateral Convention on Banning Chemical Weapons:

> "Each Party, during its destruction of chemical weapons, shall assign the highest priority to ensuring the safety of people and to protecting the environment."

In this context, considerations of confidentiality are of lesser importance than the need for all sides to make certain that the correct technical approach has been adopted to ensure safe and effective operating conditions in facilities for the destruction of chemical weapons. This approach necessitates the fullest possible exchange of information with specialists on such key issues as the methods and specific technologies used for the destruction of chemical weapons and measures to guarantee safety and protect people and the environment.

It was precisely this approach that was demonstrated at the meeting on the destruction of chemical weapons, attended by specialists from 18 countries, held in Geneva from 7 to 10 October 1991. It was stressed that the primary goal of cooperation was to ensure a more comprehensive approach to environmental problems, to select and assess the safest technological processes and to perfect measures for monitoring the operation of facilities.

The decisive criterion for .technological aspects of the destruction process is, thus, that they guarantee to the fullest possible extent safe

working conditions and protection of the environment. The complexity of this problem is due, in large measure, to the diversity of chemical agents, which contain phosphorus, sulphur or arsenic, and also differ in physical, chemical and toxological properties, as well as in the specific construction of the chemical munitions.

Because of this diversity of agents and munitions it is necessary to elaborate, as far as possible, universal methods of destruction. The technology used must take into account the specific features of work with highly toxic substances and must incorporate proven methods and approaches, including the indispensable practical experience of work with highly toxic chemical agents. This last consideration is of particular importance since the experience obtained will make it possible to elaborate and implement measures that will ensure safe working conditions and the protection of the environment. These measures, which will take into account the realities of work with extremely toxic chemicals, include regulations on health, hygiene, fire prevention and environmental protection, as well as legal obligations. The strict regulations governing safety requirements and environmental protection in the USSR ruled out incineration, the most widely used method of destroying chemical agents.

This method had been studied in some detail. The decision to reject the incineration of mustard and lewisite was prompted primarily by the possible formation of the by-products dioxin and benzofuran. This is one aspect of the issue.

Attention must also be given to the safety problem relating to the technological process of incinerating chemical agents. We are dealing with a system that, from a functional point of view, is closely interconnected and operates without interruption. Consequently, disruption of even one parameter of the process could lead to a hazardous situation in which chemical agents might be released into the atmosphere; accordingly, higher demands are made as regards the reliability of the technological equipment and the control system and as regards environmental monitoring.

The method of caustic hydrolysis is also more or less universally used for the destruction of chemical agents containing phosphorus, sulphur and arsenic. The exchange of technical information that took place at the experts' meeting held at Geneva in October 1991 made it apparent that, in the initial stages of developing technological processes for the destruction of chemical weapons, the USSR was not alone in

considering caustic hydrolysis as the principal method and, furthermore, attempts were made to use the process industrially for sarin and soman detoxification. The decision not to continue this work was prompted by the following primary considerations: the large quantity of effluents, which require further obligatory processing, and the reversibility and heterogeneity of the process.

Undoubtedly the most effective and universal ways of disposing of chemical weapons are burial in deep mine shafts or dumping on the seabed. These methods hardly merit consideration, however, if only in view of their unethical nature.

In our opinion, the requirements for the greatest possible safety of working conditions and for maximum protection of the environment are most fully met by a two-stage, intermittent process for the destruction of chemical weapons.

The first stage comprises the detoxification of sarin, soman, VX and mustard agent, leaving a reactive mass of low toxicity; in other words, it accomplishes one of the main tasks, that of irreversibly converting a chemical warfare agent, under smooth and strictly controlled conditions, into a product unsuitable for further military use. In this connection, it should be stressed that this process is conducted on an intermittent basis, ensuring that any hazardous developments will be confined to minimal, strictly limited quantities of the agent being processed.

Facilities for the dismantling of chemical munitions are also equipped to operate on a piece-by-piece basis, thus significantly reducing the magnitude of any hazardous situation. It is at the dismantling stage that the munitions are opened, the chemical agent is removed by vacuum transfer and the surface of the munition casing is degassed. The inner surface of contaminated equipment and piping is subjected to degassing every time dismantling operations are conducted.

The second stage of the process is incineration, or conversion into a product suitable for commercial use, of the substances of low toxicity resulting from the detoxification of the agent. The degassed munition casings are also burned at this stage.

The technological process described above is extremely reliable. It has been tested and proven in the case of the destruction of munitions whose condition had become critical, as well as of various types of chemical munitions either individually or in small batches. In this way, several thousand chemical artillery shells, rockets, mines, aerial bombs

and missile warheads, containing some 300,000 kilograms of chemical agents of all categories, have been destroyed.

The environmental safety and effectiveness of the technological processes have been demonstrated, a number of important parameters have been defined and the reliability and efficiency of the environmental monitoring system have been confirmed by means of the analytical procedures developed.

In Shikhany, in 1987, representatives of the States participating in the Geneva talks demonstrated the destruction of a sarin-filled bomb using a transportable system.

The problem involved in the destruction of lewisite and lewisite-based agents raises rather different considerations. During the disposal of organophosphorus agents, the destruction process results in the formation of inorganic compounds of phosphorus, which constitute vital elements in the natural cycle. The possibility thus exists of such processing with the aim of producing mineral salts for commercial use.

Compounds of arsenic, on the other hand, present a special case, since arsenic is toxic in almost all combinations and, accordingly, must be closely monitored wherever it is present.

For this reason, in designing processes for the destruction of lewisite, one possibility is to create chemical compounds of arsenic with low toxicity, which can then be buried. The process developed in our country for the destruction of lewisite and mustard-lewisite agents is based on a detoxification reaction with molten sulphur in its elemental form, producing a water-insoluble polymer, which is subsequently buried.

The destruction of lewisite can, however, be seen from another point of view, namely as a source of arsenic, which constitutes approximately 30 per cent of the agent. In this context, attention should be given to the processing of lewisite by chlorinating it to yield arsenic trichloride, for subsequent conversion into products for commercial use.

Thus, fairly reliable and developed processes are currently available for dismantling virtually all types of munitions and for the destruction of all varieties of chemical agents.

It should be noted that the technological processes currently recommended for destroying chemical weapons have been arrived at after thorough analysis and laboratory testing of the traditional methods

and numerous alternative procedures for detoxifying chemical agents. Included among the traditional methods are the familiar degassing procedures based on the use of chlorinating agents, alkalis, oxidants and the like.

Noteworthy among the alternative procedures are thermochemical and photochemical destruction of chemical agents in a low-temperature plasma; thermotechnical destruction through adiabatic compression; thermal destruction of chemical agents in a sealed container; destruction of chemical weapons by underground nuclear explosions; and biodegradation of liquid chemical agents.

The directions of research referred to above are of undoubted Value in the processing or destruction of toxic industrial waste and in eliminating the consequences of environmental disasters and accidents through such procedures as the recultivation of contaminated land. In the specific area of destroying stockpiles of chemical weapons, however, and, in particular, of ensuring compliance with the requirements of the draft convention on the prohibition and destruction of chemical weapons, use must be made of the safest technologies, those which cause the least environmental damage and have been proven in practice. The search for new technologies, and their development and testing, will entail postponing the beginning of any wide-scale destruction to the end of the twentieth century, leaving open the risk of the possible use of existing stockpiles, and, at the same time, increasing the dangers attendant upon their storage. The cost of storing stockpiles of chemical weapons will also rise, significantly increasing the overall cost of achieving the noble objective of ridding mankind of chemical weapons.

In conclusion, it should be noted that the process of destroying chemical weapons under strict compliance with safety and environmental protection requirements is more complex and costly than their original production could ever be.

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THE CHEMICAL WEAPONS CONVENTION: A GREAT ACHIEVEMENT IN MULTILATERAL DISARMAMENT

At the end of its 1992 session, the Conference on Disarmament agreed to transmit to the United Nations General Assembly the text of a draft Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction. This constituted a great success for the multilateral disarmament work in general and for the Conference on Disarmament in particular. The chemical weapons Convention establishes an international norm which prohibits all possession and all use of chemical weapons.

When the Chairman of the *ad hoc* Committee on Chemical Weapons, Ambassador Ritter von Wagner of Germany, introduced the result of the negotiations in the Conference on Disarmament, he emphasised that there was no precedent for this global, comprehensive and verifiable multilateral disarmament agreement, which provides for the elimination of the spectre of chemical warfare for all time. He also emphasised that the unique character of this Convention was strengthened by the consistent application of the two principles of overall balance and adaptability to future needs.

Great efforts have been exerted to establish a political and geographical balance in the executive body of the Convention (the Executive Council). The Convention contains a verification system consisting of both routine verification of the chemical industry and the possibility of so-called "challenge inspections" of military and civilian installations. It further contains provisions on assistance and sanctions in case of violations of the Convention as well as provisions on the destruction of chemical weapons and chemical weapons production facilities, including verification arrangements. The Convention further

opens the prospect of increased international cooperation and trade in chemicals between the parties.

It is explicitly laid down in the Convention that its articles shall not be subject to reservations. The fundamental weakness which has characterised the 1925 Geneva Protocol —the reservations—will therefore not hamper this new instrument of international law.

The quest for a ban on chemical weapons has a long history. The systematic efforts to outlaw these weapons, or at least their use, go back more than 100 years. The background is the cruelty of chemical arms, coupled with their relatively limited military value. Towards the end of the nineteenth century, several efforts were made to give armed conflicts a somewhat less inhumane character. It was considered that war should at least not lead to unnecessary suffering, suffering which is out of proportion to the possible military gains.

The Brussels Convention of 1874 on the laws and customs of war prohibited, *inter alia,* the employment of poison or poisoned weapons. At the first international peace conference in The Hague, in 1899, an agreement was signed "to abstain from the use of projectiles, the sole object of which is the diffusion of asphyxiating or deleterious gases". This prohibition was later confirmed in the Hague Convention of 1907.

In spite of these international efforts, gas was extensively used in the First World War. The first large-scale attack with chemical weapons took place near Ypres in Belgium on 22 April 1915. Chlorine from 6,000 canisters was dispersed, and 5,000 unprepared and unprotected soldiers were killed. Later, phosgene and arsenicals were used and, in June 1917, mustard gas as well. The use of gas progressively increased during the war, and nearly 100,000 soldiers were killed and some 1.3 million were wounded by chemical weapons.

It should be noted in this context that the Brussels Convention prohibited only the use of certain projectiles, and thus did not cover the type of chemical warfare which took place in the First World War I, in which gas was dispersed and left to drift with the wind.

The use of chemical weapons in the First World War demonstrated the cruelty of these weapons and reinforced popular demands for a ban on chemical warfare. It also, however, demonstrated the military value of such weapons against an unprepared and unprotected adversary.

The problem of chemical and biological warfare was taken up at several disarmament conferences during the inter-war period, and a

number of expert studies of the issues involved were carried out under the auspices of the League of Nations. At the Naval Conference in Washington in 1922, a treaty was signed by France, Italy, Japan, the United Kingdom and the United States in which they declared that the prohibition of the use in war of asphyxiating, poisonous or other gases and all analogous liquids, materials or devices was part of international law. The treaty did not, however, enter into force.

In 1925 an international conference was convened in Geneva on the initiative of the League of Nations to consider the supervision of the arms trade. One result of that conference was the adoption of the famous 1925 Geneva Protocol (Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare). Up to the conclusion of the chemical weapons Convention, the Protocol has been the most important legal instrument in the field of chemical weapons.

The prohibition of use of biological weapons was also included in the Geneva Protocol. For almost half a century thereafter, chemical and biological weapons were considered together in disarmament efforts.

In fact, the Geneva Protocol has, to a large extent, become a ban on the first use of chemical weapons, because of the reservations which many parties made when they ratified it. Those who made reservations usually declared that they considered themselves bound by the provisions of the Protocol with regard only to other parties to it, and that they would not be bound by the Protocol with regard to an adversary whose armed forces, or the armed forces of whose allies, failed to respect it.

The outlawing of only the use (or first use) of chemical weapons has proved to be insufficient to effectively prevent their use. Experience has shown that as long as chemical weapons exist, there is a risk that they will be used. Only an effective convention outlawing chemical weapons altogether, and adhered to by all States, can rid the world of the threat of these abominable weapons.

The Disarmament Conference which took place in Geneva in 1932-1933 discussed proposals for extending the prohibition contained in the Protocol in various ways, including a total ban on chemical weapons, but the Conference failed to reach agreement on this and other questions.

The first clear violation of the 1925 Geneva Protocol occurred when chemical weapons were used against Ethiopia in 1935-1936. Chemical weapons were also employed against China in the late 1930s.

In the Second World War, however, neither chemical nor biological weapons were used, at least not on a large scale. There were probably several reasons for this. The major Powers had learned from their experiences of the First World War. The fact that they had now acquired expertise and equipment for protection against such weapons meant that the weapons would not have been very effective if employed in the Second World War. Besides, each side had to reckon with the risk of immediate retaliation from the other. It is also likely that the public abhorrence of the use of chemical weapons influenced those Governments which may have contemplated using them. Furthermore, it would be wrong to overlook the existence of the Geneva Protocol, which probably also contributed to the restraint exercised by the countries with chemical-weapon capability during the Second World War.

In the 1940s and 1950s there was a rapid development of nerve gas weapons, which were many times more lethal than the earlier chemical weapons. However, relatively little attention was given to the problem of chemical weapons in the first years after the Second World War, because the advent of nuclear weapons overshadowed everything else.

The United Nations became involved with the question of chemical arms in 1947 in connection with the discussions about the definition of weapons of mass destruction, which came to include "lethal chemical and biological weapons". A resolution containing this definition was adopted by the Security Council in 1948.

Towards the end of the 1950s, several plans for general and complete disarmament were submitted, all of which included the abolition of chemical and biological weapons. This issue was, however, considered secondary to the problem of nuclear arms.

The interest in the problem of chemical and biological warfare revived in the latter part of the 1960s, largely as a result of the war in Vietnam. There was a heated debate in the United Nations about whether tear gases, other irritants and herbicides were covered by the Geneva Protocol. In this debate, which led to no agreement, many arguments were used which had been advanced already in 1930, when the tear-gas issue was first discussed. This question remained open until the very end of the negotiations on chemical weapons. After arduous efforts it was agreed to include in the preamble of the CW Convention a paragraph according to which the States parties recognise the prohibition, embodied in the pertinent agreements and relevant principles of international law, of the use of herbicides as a method of warfare. In

article I of the Convention each State party undertakes not to use riot control agents as a method of warfare.

In 1968 a treaty was proposed in the Committee on Disarmament in Geneva prohibiting the production and possession of biological warfare agents, thereby suggesting that biological and chemical warfare agents be dealt with separately in disarmament efforts. Three years later, the Conference of the Committee on Disarmament (CCD) completed its work on the draft Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction. In December 1971 the United Nations General Assembly commended the draft Convention for signature and ratification. It entered into force in 1975 and now has some 115 parties.

Since the beginning of the 1970s, the question of chemical weapons has been a separate issue in the multilateral disarmament work in Geneva. An *ad hoc* working group was set up in the CD in 1980, but it was not until 1984 that it was given a formal negotiating mandate. This mandate did not, however, allow for the final drafting of the Convention until the beginning of 1990, when the last formal obstacle to completing the work was removed.

After 1984, the negotiators worked on a "rolling text", an evolving draft of the Convention, up-dated every year with provisionally agreed new elements (annex 1) and material for further work (annex 2), parts of which were considered likely to be incorporated into the final version. These texts were included in the annual reports of the *ad hoc* Committee on Chemical Weapons to the Conference on Disarmament.

In 1989, two major international conferences took place outside the CD, which contributed to intensifying the quest for a total ban on chemical weapons. One was held in Paris, with the participation of high-level representatives of 149 States, and another in Canberra, which assembled representatives of Governments and a large part of the world's chemical industry.

Bilateral negotiations between the United States and the former Soviet Union took place in parallel with the multilateral efforts and provided the latter with useful inputs. For example, the provisions in the chemical weapons Convention on the order of destruction build to a considerable degree on a text which was agreed bilaterally between the two leading chemical weapons possessors.

Other important inputs to the text came from the United Nations expert reports on, and the practical experiences of, the United Nations investigations of alleged use of chemical weapons.

Ambitious efforts have been made to involve the civilian chemical industry in this work. Special meetings have been held in the framework of the negotiations with representatives of the chemical industry, and trial inspections have taken place in a number of countries to test the viability of the verification provisions regarding industry as well as military establishments. Furthermore, the Pugwash Study Group on Chemical Weapons and other non-governmental organisations have made useful contributions to the efforts to outlaw chemical weapons.

Among the most difficult political problems was the question of an immediate and total prohibition of the use of chemical weapons from the date of entry into force of the Convention, that is, including the period of 10-15 years required for the destruction of existing chemical weapons. In 1990 the United States and the Soviet Union submitted a joint proposal according to which existing chemical weapons possessors should be permitted to keep two per cent of their arsenals, thereby maintaining a retaliatory capability, until all "chemical-weapons-capable" States had adhered to the Convention. It was in fact only after President Bush's initiative of 13 May 1991, whereby the United States withdrew the so-called "two-percent proposal", that it became clear that the negotiations had definitely entered into their final phase.

The right of retaliation, which several countries had reserved for themselves under the Geneva Protocol, will no longer be valid once they have adhered to the Convention and the Convention has entered into force.

It has been clear for a long time that a complete ban on chemical weapons must be verifiable. There are stockpiles of chemical warfare agents and chemical weapons production facilities in several countries. (According to reports in the international press, it is believed that some 20 States possess or are trying to acquire an offensive chemical warfare capability.) Furthermore, the civilian chemical industry in many countries produces toxic substances in large volumes and has production processes which can be converted to produce chemical warfare agents. Therefore relatively intrusive verification is necessary to establish confidence in compliance with a chemical weapons convention.

From the very outset, the verification issue was one of the most difficult in the negotiations. The Soviet Union and its allies for many years refused to accept the necessary international verification on their

territories, whereas the United States went very far in demanding intrusive and comprehensive verification. This was evident, for example, in 1984, when George Bush, who was then vice-president, submitted a complete draft convention on chemical weapons to the Conference on Disarmament. The attitude of the Soviet Union changed radically under President Gorbachev. The United States also modified its position in this matter; it was no longer a question of "any time, anywhere, with no right of refusal". It gradually became clear, however, that China and a number of developing countries had difficulties in accepting intrusive verification, while the Western European and some other States worked consistently and determinedly for an effective and relatively intrusive verification regime right up until the conclusion of the negotiations.

The outcome of the many years of negotiations on this matter was a true compromise between the demand for effective verification of compliance with the Convention and the need to maintain legitimate secrecy regarding military and industrial matters unrelated to the ban on chemical weapons.

The question of export control of potentially chemical-weapon-related chemical substances and equipment also constituted a very difficult problem. The participating developing countries requested that all discriminatory control as far as parties to the Convention were concerned should come to an end, and that the so-called Australia Group should be dissolved once the Convention entered into force. It was, however, evident that the emerging system of verification of compliance with the Convention would have some shortcomings, so the exporting countries were not prepared to make a sweeping general undertaking to abolish all control of exports of potentially chemical-weapon-related products to all parties to the Convention. At the last moment, it was possible to achieve a compromise, which will give parties to the Convention more favourable consideration in this context than non-parties, without promising a general and complete abolition of existing restrictions.

The majority of delegations expected a breakthrough in the negotiations to occur in 1992. This expectation had been stated in resolution 46/35 C, adopted by the United Nations General Assembly on 6 December 1991. It was also reflected in the mandate for the *ad hoc* Committee adopted by the Conference on Disarmament. However, in the first months of 1992 the negotiations made little progress towards the expected breakthrough.

In March, the Foreign Minister of Australia, Senator Gareth Evans, submitted to the CD a complete draft convention based on the "rolling text", with some substantive changes and with a more logical editorial structure. It received a generally positive reaction, but was not formally endorsed. However, it contributed to breathing new life into a situation that was largely characterised by stalemate.

The Chairman was then requested to elaborate his own draft on the basis of the "rolling text", the Australian draft, and the results so far achieved in the course of the negotiations in 1992. Such a text was presented in May by Ambassador von Wagner in cooperation with the Chairman of the Working Group on verification in the chemical industry and the Friends of the Chair. It constituted a further step towards the final draft, but several parts were controversial, and in June a group of 12 countries, consisting of 11 members of the Group of 21 neutral and non-aligned States, together with China, proposed a number of amendments ranging over a wide field of issues, notably pertaining to the verification regime.

Against this background, the Chairman decided to change the format of the negotiations. He restructured the work and appointed some fellow ambassadors to conduct the negotiations in the various issue areas during a limited period. This led to some further progress in terms of agreed provisions. It also provided the Chairman with indications of where he might possibly find common ground on outstanding issues. On this basis, he presented a revised version of the earlier working paper, which he requested the delegations to submit to their capitals for approval.

When the negotiations resumed at the beginning of the third and last part of the 1992 session, a number of countries stated that, although they had several difficulties with the draft text, they could nevertheless accept it in the spirit of compromise. In particular they were discontent with the regime for challenge inspections, which they considered had been seriously weakened in the course of the negotiations during 1992. The group of developing countries that had earlier submitted joint proposals for amendments, together with China, had now been enlarged by another two States; this "Group of 14" stated that it could not accept the Chairman's text and proposed a number of amendments. The Russian Federation also indicated that it had problems with the draft. The Group of Western States refrained from proposing amendments, although many among them indicated that they too had serious difficulties with parts of the Chairman's text.

On 19 August, after further intensive negotiations, the Chairman presented the final version of the draft Convention. Many delegations said that they could accept the text, but several made statements in which they indicated the various problems they had with the draft and requested that their observations be reflected in the report of the *ad hoc* Committee on Chemical Weapons. Other delegations noted for the record that such statements "could not be considered to have any authoritative status at the level of interpretation or otherwise". A number of delegations emphasised the positive importance of the Convention. The political struggle around the Convention thus continued to the very end of the negotiations.

The Convention will enter into force 180 days after the date of the deposit of the 65th instrument of ratification, but in no case earlier than two years after its opening for signature. There are good prospects that the required number of ratifications will be achieved relatively quickly, and that the Convention can enter into force in 1995. There is, however, a risk that linkages will be made between the real or perceived possession of nuclear weapons by certain States and the preparedness on the part of others to renounce the chemical weapons option. Such linkages are likely to complicate the process.

A chemical weapons Convention with universal adherence will strengthen the security of all States. Every effort must therefore be made to ensure that the Convention will have broad and, in due course, even universal, adherence. The chemical weapons Convention represents a breakthrough in multilateral disarmament efforts. It outlaws completely an entire category of existing weapons of mass destruction, and it provides for a system of multilateral verification that sets a new precedent at the global level.

The chemical weapons Convention is also a great success for the Conference on Disarmament. It is, to a much greater degree than, for instance, the NPT, a product of genuine multilateral negotiations, in which no country or group of countries has been able to dictate the outcome. This should also have a positive impact on efforts to resolve other security problems of global dimensions through multilateral negotiations.

SCOPE AND BALANCE OF THE CHEMICAL WEAPONS CONVENTION

"The time has come for a global ban on chemical weapons. After long periods of contentious debate and stagnation, we face a singular

opportunity. Let us gasp it so that, one year from now, the First Committee may adopt by consensus the text of the Chemical Weapons Convention."

I have taken the liberty of quoting myself because when I made this statement one year ago—I can admit now—I was not fully convinced that this could really happen. Somehow I felt like asking for a miracle. Today, reporting on the results of this year's work in Geneva, I am confident that the First Committee will endorse the chemical weapons Convention without having to rely on a miracle any more. Due to the extremely hard work of the Conference on Disarmament, the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction came to the General Assembly with more than 130 countries ready to co-sponsor the relevant draft resolution endorsing the Convention. (The draft was later adopted without a vote as resolution 47/39.)

The result of the collective effort of the *ad hoc* Committee on Chemical Weapons of the Conference on Disarmament speaks for itself. There is no precedent for this global, comprehensive and verifiable multilateral disarmament agreement. The chemical weapons Convention provides for a cooperative, non-discriminatory legal instrument to eliminate the specter of chemical warfare once and for all.

The unique character of its content is strengthened by the consistent application of two principles: overall balance and adaptability to future needs. Future States parties are offered a balanced legal instrument providing clarity on the fundamental obligations and, at the same time, enough subtlety on matters of implementation so that, with the consent of States parties, the respective provisions may still mature and evolve in the course of future practice.

There are six features of the Convention which may be seen as the key components of its overall balance. They may be looked upon separately, but their real significance flows from their entirety. They represent only parts of one single body of provisions. The Convention has the following main features:

1. The comprehensive scope of general obligations in article I, which, in an absolutely non-discriminatory way, bans all conceivable actions in contravention to the object and purpose of the treaty and stipulates the destruction of chemical weapons and production facilities.
2. The built-in safeguards to deal with situations where the basic obligations have not been respected, in particular articles X

(Assistance and protection against chemical Weapons) and XII (Measures to Redress a Situation and to Ensure Compliance, including Sanctions).

3. The very clear and unambiguous provisions on the destruction, including its verification, of chemical weapons and chemical weapons production facilities as elaborated in articles IV and V in conjunction with parts IV and V of the Verification Annex.
4. The extremely delicate and equitable balance which has been established in article VIII in the provisions on the Executive Council, its composition, procedure, decision-making, powers and functions.
5. The general verification package beyond the specific provisions for verification of destruction: it consists of challenge inspections (article IX and part X of the Verification Annex) and routine verification in the chemical industry (article VI and parts VII to IX of the Verification Annex). The political instrument of challenge inspections reconciles the diverging objectives of maximum assurance against non-compliance, protection of the inspected State party's sovereign rights, and the prevention of abuse. Routine verification in industry balances the objectives of reliable confidence-building, simplicity of administration, and non-interference with perfectly legitimate activities in the chemical industry.
6. The evolutionary concept of economic and technological development as contained in article XI and highlighted in the Preamble, in conjunction with the equally evolving confidence-building regime of verification in the chemical industry opens the door to expanded international trade and economic co-operation in the chemical sector.

Having highlighted the key features of the Convention, I should like to describe briefly its various articles.

General Obligations and Definitions (Articles I and II)

Article I incorporates the basic undertakings of the Convention, adding up to a total ban on chemical weapons and any activities aiming at or contributing to their use. The definitions in article II make clear that this ban extends not only to chemical warfare agents as such, but also to the means of delivery and other devices specifically designed for the use of chemical weapons, article I furthermore obliges States

parties to destroy all chemical weapons, including abandoned chemical weapons, and to destroy chemical weapons production facilities.

Following compromises and concessions made during the summer of 1991, the basic obligations regarding the ban on chemical weapons and their destruction as contained in the Convention are unreservedly comprehensive and absolutely non-discriminatory.

Article II, which defines all important terms used in the articles of the Convention, is particularly important for the purpose of delineating precisely the scope of the basic obligations as contained in article I.

Declarations (Article III)

Under this article, each State party shall submit to the Organisation, not later than 30 days after the Convention enters into force for it, declarations in particular with respect to chemical weapons, to old and abandoned chemical weapons, and to chemical weapons production facilities. States parties shall declare, among other things, whether they own or possess any chemical weapons, or whether there are any chemical weapons located in any place under their jurisdiction or control, and they are to specify the precise location and quantity of such weapons, and provide a general plan for their destruction.

Destruction and Verification of Chemical Weapons and Chemical Weapons Production Facilities (Articles IV and V)

Articles IV and V, in conjunction with parts IV and V of the Verification Annex, contain detailed and rigorous provisions governing the destruction of chemical weapons and chemical weapons production facilities, including verification. Complete destruction is to be achieved within ten years. Should a State party, in exceptional cases, for technological, financial, ecological or other reasons not be in a position to do so, the Convention allows for the possibility of extending this timeframe by up to five more years. Furthermore, in exceptional cases of compelling need, article V permits States parties to convert, rather than destroy, chemical weapons production facilities, but only under strict conditions designed to prevent their possible . In both instances, rigorous additional verification measures are foreseen to prevent circumvention of the basic obligations.

Routine Verification of Activities not Prohibited Under the Convention (Article VI)

Article VI, in conjunction with parts VI to IX of the Verification Annex, sets forth a comprehensive and graduated routine regime for international monitoring, through declarations and on-site inspections,

of "activities not prohibited under the Convention", in particular in the chemical industry. The basis of the regime are three "schedules" (lists), contained in the Annex on Chemicals, identifying toxic chemicals that either have been used as chemical weapons or are precursors to chemical weapons.

Government and civilian facilities producing small amounts of Schedule 1 chemicals, i.e. chemical warfare agents, for certain approved purposes such as protective or medical research, are subject to the most rigorous verification measures under the provisions of article VI and part VI of the Verification Annex.

Industrial facilities producing chemicals listed in Schedules 2 and 3 are subject to the progressively less rigorous measures elaborated in parts VII and VIII of the Verification Annex. Finally, all other chemical production facilities deemed relevant to the Convention fall under the limited reporting and conditional verification requirements of part IX of the Verification Annex.

These provisions on verification in the chemical industry, as they emerged after years of negotiations, reconcile various objectives: they are conducive to enhancing confidence and international cooperation, but not excessively ambitious in their verification goals; they can be administered with relative ease; and they are flexible and open to future adjustment in the light of practical experience gained.

Verification in the chemical industry aims at steady and continuous confidence-building, it does not provide for highly political action to answer concrete concerns about possible non-compliance. However, verification in the chemical industry and the challenge inspection regime under article IX are complementary: smooth and efficient implementation of verification measures under article VI will greatly reduce the need for challenge inspections, which remain the ultimate safety net also to answer concrete concerns about possible non-compliance in industry.

National Implementation Measures (Article VII)

Article VII sets forth the general undertakings of States parties intended to ensure the national implementation of the Convention. It also outlines the relations between States parties and the Organisation to be set up under the Convention.

The Organisation (Article VIII)

To implement the Convention, an "Organisation for the Prohibition of Chemical Weapons" will be established in The Hague. It will comprise: a "Conference of States Parties", composed of all member states, which

will be the principal organ of the Organisation and will meet on an annual basis; an "Executive Council" where forty-one States parties will be represented, which will have the day-to-day responsibility for supervising the activities of the Organisation; and, headed by a "Director-General", a "Technical Secretariat", whose principal component will be the Inspectorate responsible for carrying out the Convention's verification activities.

Negotiations focused in the last round on the question of the composition of the Executive Council. Very diverging or even contradictory interests had to be harmonised: the need for a relatively small and effective, but at the same time representative, body; the interests of all future States parties to have a fair chance for participation in the work of the Executive Council; political and security interests; the particular interests of future States parties, having large chemical industries, which will be most affected by the implementation of the Convention.

The criteria for membership in the Executive Council, as they are specified in paragraph 23 of article VIII, balance these interests. They ensure that the membership of the Executive Council is broadly representative of the membership of the treaty. Members of each regional group will decide among themselves on the designation of Executive Council members from their region, taking into account the criteria specified in the Convention. The regional groups shall also take into account regional factors in designating these members. By using a balanced approach, regional groups are given some flexibility in designating seats within the groups.

Challenge Inspections (Article IX)

Article IX provides for consultative clarification procedures and, in conjunction with part X of the Verification Annex, for short-notice "challenge inspections". A State party may request a challenge inspection of any facility or location in the territory of another State party for the purpose of clarifying and resolving any questions concerning possible non-compliance. The request will then be "multilateralised" and the inspected State party must permit the Technical Secretariat to conduct the inspection and is obliged to grant the Organisation's inspection team access. However, there are a number of measures available to the inspected State party to protect from undue intrusion those activities and installations which it considers unrelated to the inspection request.

The challenge inspection regime constitutes a novelty in the verification of a universally applicable arms control and disarmament

treaty. Furthermore, it constitutes a politically sensitive concept which balances carefully the verification interests of a State party and of the international community and the interest of the inspected State party to protect sensitive information not related to the chemical weapons Convention. It also balances national sovereign rights and the rights of the community of States parties as represented by the Executive Council and executed by the Technical Secretariat.

The verification system of the Convention, in particular the unprecedented instrument of challenge inspections, could become a basis of reference for other multilateral disarmament agreements or for the strengthening of existing verification regimes.

Assistance and Protection against Chemical Weapons (Article X)

Article X is one of the built-in safeguards of the Convention to protect States parties against the eventuality of the hypothetically continuing risk of being threatened or attacked by chemical weapons. It provides, *inter alia,* for the establishment of a voluntary fund for assistance by the Conference of States parties; for assistance through the Organisation in case of the use or threat of use of chemical weapons against a State party; and for immediate emergency assistance directly from other States parties.

Economic and Technological Development (Article XI)

Article XI aims at promoting expanded international trade, technological development and economic cooperation in the chemical sector. In this regard, negotiations focussed on the question of export controls among States parties. The solution to the issue was found by adopting a flexible and dynamic approach which encourages the progressive removal of existing restrictions, evolving in parallel with the implementation of verification in the chemical industry, thus taking into account the confidence generated by the Convention.

With regard to the pertinent provisions in article XI, attention is also drawn to the following statement by the Australian representative in the plenary of the Conference on Disarmament on 6 August, 1992:

> "They (members of the 'Australia Group') undertake to review, in 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 obligations under the Convention."

Measures to Redress a Situation and to Ensure Compliance, Including Sanctions (Article XII)

Article XII is the principal safeguard of the Convention to protect States parties against violations of the basic obligations by other States parties. It provides the means to remedy any situation which contravenes the provisions of the Convention. Under article XII, the Organisation may require a State party deemed not to be in full compliance with the Convention to take remedial action and, in the event it fails to do so, apply a number of penalties including sanctions.

In recognition of the United Nations Security Council's paramount responsibility for matters affecting international peace and security, cases of particular gravity are to be referred to the Security Council for any further, possibly mandatory, action under the United Nations Charter.

Articles XIII to XXIV

The remaining 12 articles of the Convention are concerned with: its relation to other international agreements; settlement of disputes; amendments; duration of the Convention and withdrawal of a State party; status of the annexes; signature; ratification; accession; entry into force; reservations; the depositary; and authentic texts. The Convention, which shall be of unlimited duration, shall enter into force 180 days after the date of the deposit of the sixty-fifth instrument of ratification, but in no case earlier than two years after its opening for signature.

The chemical weapons Convention was worked out in the *ad hoc* Committee on Chemical Weapons, then adopted by the Conference of Disarmament, and, by consensus decision of the Conference, transmitted to the forty-seventh session of the United Nations General Assembly. I am confident that this Convention will inaugurate a qualitatively new era for multilateral arms control and disarmament. It offers us the singular opportunity to lay the foundation of a new, co-operative concept of international security. The overwhelming support given to resolution 47/39 shows that the international community is willing to grasp this chance and to build on it.

THE OUTSTANDING CHARACTERISTICS OF THE CONVENTION ON THE PROHIBITION OF CHEMICAL WEAPONS

After ten years of negotiations, particularly intensive since 1991, the Conference on Disarmament has succeeded in presenting to the

international community a major achievement in the field of disarmament with the conclusion, this year, of the Convention on the prohibition of chemical weapons (CWC). The signature of this very important treaty, which is scheduled to take place in Paris in January 1993, will undoubtedly constitute a noteworthy event. Why is this so? In my view, its significance is due to three main factors:

- The CWC will entail substantial progress for international security;
- It is expected to achieve universal adherence thanks to the balance between fundamental requirements that it incorporates;
- Its importance must also be analysed in the light of the situation that would prevail had it not been concluded.

The Convention will Entail Substantial Progress for International Security

The Convention is the first genuine multilateral disarmament instrument banning a whole class of weapons of mass destruction.

The Convention prohibits not only the production, but also the acquisition, stockpiling, transfer, use or military preparation for use of chemical weapons, as well as assistance to anyone in activities prohibited under the Convention.

The prohibition encompasses not only the chemical agents as such, but also their means of delivery and any device designed for the use of chemical weapons.

Any State party possessing chemical weapons on its territory or having abandoned chemical weapons on other States' territories is obliged to destroy such weapons, as well as any production facility.

Thus the ban is really a comprehensive one: it covers all chemical weapons. Moreover, under the Convention, chemicals which are not considered as weapons (herbicides, riot-control agents) may not be used as means of warfare.

The Convention Constitutes a Powerful Deterrent against Covert Chemical Weapons Development Programmes Thanks to an Unprecedented Verification Regime

Apart from its provisions on the verification of the destruction of chemical weapons and inspections of the chemical industry, the CWC contains three major innovative sets of provisions:

- It introduces, for the first time in a worldwide agreement, the concept of challenge inspection;
- Such inspections can be carried out not only in declared facilities, but also in undeclared ones;
- These inspections will be conducted by international inspection teams provided by the future Organisation, to be set up under the Convention.

This unprecedented system of verification could well become a point of reference for other multilateral disarmament agreements or for strengthening existing verification regimes.

By establishing a jointly agreed norm and granting the international community the practical means of enforcing it, the CWC constitutes a major step in the collective endeavour to eradicate weapons of mass destruction.

The CWC is Expected to Achieve Universal Adherence Thanks to the Balance Between Fundamental Requirements that it Incorporates

Balance between the Need for Credible Verification and the Safeguarding of National Interests

The CWC reconciles the possibility of inspections anywhere with the need to protect national security interests:

- It grants the Organisation, through challenge inspections, the practical means of detecting non-compliance. Therefore the CWC has a real deterrent value *vis-a-vis* possible proliferators. The challenge verification regime allows a bilateral suspicion to trigger a multilateral inspection carried out by the Technical Secretariat and a multinational inspection team dispatched by the Organisation.
- At the same time, the Convention contains a set of provisions (on time-frames, managed access to the inspected site, measures against abuse) allowing States parties to protect sensitive facilities or information unrelated to chemical weapons.

The chemical weapons Convention takes into account the need to safeguard economic and commercial interests.

Under the Convention, States parties must declare all their chemical production facilities capable of producing chemical weapons. Various risk levels are defined for each agent and different levels of verification apply to each category. Thus, facilities with a chemical weapons capability are covered in a sufficiently broad manner.

At the same time, the Convention ensures that the world's chemical industry will not be subject to an unnecessarily intrusive or bureaucratic system of inspections.

Balance between Industrialised and Developing Countries

Because of their chemical industry capacities, the industrialised countries will bear most of the weight of verification in industry. However, because of the broad concept of facilities with a chemical weapons capability, all States parties having some chemical industry will, one way or another, be affected by verification.

Similarly, it is natural that those countries accepting the constraints of verification and complying with their obligations benefit from an eventual relaxation of the trade restrictions implemented to combat proliferation. This is why the members of the Australia Group announced their commitment to review their policies in this area with the ultimate objective of lifting trade restrictions in favour of States parties acting in compliance with the Convention. This commitment was duly taken into account in the formulation of article XI. It is equally legitimate for the international community to retain the right of applying trade restrictions in the case of States not party to the Convention.

The composition of the Executive Council established by the Convention has been specifically designed to ensure equitable distribution between the regions of the world. Developing countries represent the majority of seats. At the same time, in determining the number of seats for each region, due account was taken of the relative importance of the chemical-industry capacities of States parties, because of the constraints of verification imposed on them. Moreover, this industrial criterion was defined in a sufficiently flexible manner so as to allow possible regional internal rearrangements or adjustments that may be necessary in the future.

Balance between States Possessing and Not Possessing Chemical Weapons

Under the Convention, any State party possessing chemical weapons is obliged to destroy all of them as well as production facilities within 10 years after the entry into force of the Convention. This was the price for universality of the Convention. At the same time, it would have been senseless to disregard the technological or financial difficulties which some States parties could face in destroying their arsenals. The Convention thus provides for the exceptional possibility of modifying or extending the 10-year destruction period for a State party, but under

conditions of strengthened verification, which would, in effect, place the State party under the strict control of the international community. This would also apply as regards the exceptional conversion of chemical-weapon production facilities to civil use.

Regarding the chemical weapons abandoned by a State party on the territory of another State, the Convention provides for the general obligation for any State party to destroy the weapons which are on its own territory, but, at the same time, it gives the abandoning State a responsibility in the destruction of its abandoned weapons.

Balance between Respect for Domestic Jurisdiction and the Need to Broaden Collective Security Measures

States parties have the responsibility of implementing the Convention at the national level, but it is up to the Organisation to verify compliance with the obligations undertaken. This applies to the declarations made by States parties as well as to the destruction of weapons and production facilities.

The prerogatives of the inspection team in the verification process are balanced by the right of the inspected State to protect its sensitive facilities or information unrelated to chemical weapons.

States obviously remain free not to become parties to the Convention. But in this case, they will have to face trade restrictions from States parties.

The Importance of the Convention Must Also be Analysed in the Light of the Situation that Would Prevail had it Not been Concluded

If the Convention did not exist, this would "give the green light" to proliferators. Such a situation would affect the security of all States, particularly the least developed ones.

The corollary of such a prospect would be the necessary strengthening of unilateral non-proliferation regimes, which would increase obstacles to trade and transfers of technology, thus penalising those developing countries that abide by their commitments.

The strengthening of unilateral cartels would in turn give proliferators a pretext for concealing their covert programmes to rally the third world in a struggle against the technological protectionism of industrialised countries.

In the end, the absence of the Convention would give more weight to the arguments of those who prefer to apply to violators unilateral

measures rather than using collective action which benefits those States which comply with the common norm.

In sum, the chemical weapons Convention is in the interest of all countries. Contrary to the assertions of some, it does not serve the sole interests of developed countries. Quite the contrary, the developing countries should become the main beneficiaries of the Convention:

- First, experience has shown that, unfortunately, it is in developing countries that chemical weapons have been used in recent times, while industrialised countries consider that such weapons have neither strategic nor deterrent value. In any case, developed countries possess appropriate means of detection and protection, means which are not as readily available to most developing countries.
- Secondly, the Convention strengthens the role of multilateral organisations, which corresponds to the wishes and needs of developing countries.

In conclusion, I should add that the Convention is also an historic achievement of the Conference on Disarmament, which has proved that, when conditions are ripe, it has the competence and the expertise to achieve such politically delicate and technically complex agreements. This bodes well for the important issues on the agenda of the Conference on Disarmament in coming years.

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SOME OBSERVATIONS ON THE CHEMICAL WEAPONS CONVENTION

When I was asked to contribute an article on the chemical weapons Convention (CWC) I faced a difficult question: What should I write about? The history of the negotiations? A description of the Convention? Issues of its future implementation? Since a number of my colleagues who are also contributing to the periodical are, without any doubt, at least as knowledgeable in all these areas as I am, it appeared that just another story of how the Convention has been negotiated and what it consists of might be simply boring to a reader. Therefore, I decided to limit myself to some observations, which might not constitute a coherent essay, but which, hopefully, could be helpful in understanding this unprecedented treaty and the lessons which can be drawn from the negotiations.

1. *The revolutionary nature of the Convention.* The CWC, which is the product of two decades of negotiations in the Conference on Disarmament and its predecessors (a record in itself), possesses a number of features that make it an outstanding achievement. For the first time a treaty came about as the result of genuinely multilateral negotiations; previous agreements were basically slightly modified copies of Soviet-American drafts prepared by the two countries for relevant occasions. Nevertheless, the input made by the United States and the Soviet Union (subsequently by Russia) was very significant, both in conceptual terms and in technical details.

The CWC differs from previous multilateral agreements inasmuch as it not only prohibits a whole category of weapons of mass destruction, but also restricts the industrial base that has a potential for producing chemical weapons. Moreover, it provides for unprecedented verification procedures, the most revolutionary of which are the provisions for

challenge inspections covering any locations and facilities in States parties, irrespective of their relevance to chemical weapons. In other words, the CWC verification system covers without exemption all the territory under the jurisdiction or control of each State party, thus greatly facilitating the development of any future verification system.

Finally, the CWC is the first multilateral disarmament treaty establishing its own verification and implementation agency, the Organisation for the Prohibition of Chemical Weapons with its own Preparatory Commission. Of course, one could refer also to the IAEA "servicing" the NPT, but the Vienna agency was not etablished by the Non-proliferation Treaty. The OPCW, whose headquarters shall be in the Hague has a good chance of becoming an international organisation of the new type: efficient, flexible, free from the notorious international red-tape which was characteristic of a number of older organisations, born in the cold-war era.

2. *Security dimension of the CWC.* The CWC is designed to ensure the elimination and non-resurrection of chemical weapons throughout the world. At the same time, one should ask whether this is an important achievement for international peace and security or is the international community again going to outlaw a weapon which has little or no military significance in any case? I believe that the chemical weapons Convention is an outstanding achievement. It is true that a number of military significant countries including the United States and Russia had taken high-level political decisions to write off chemical weapons as a means of deterrence some time before negotiations were concluded. Had this not been the case, we would not have this Convention at all. For, in fact, its elaboration was among a number of major factors which led to their decisions.

Moreover, the CWC, when it achieves universality, will provide a serious reassurance to all States, including those in regions of tension and those that have very tense relations with each other, that they will not face a chemical weapons threat from anyone. Consequently, they will not have to direct their resources to counter such a threat. But, the security consequences of the CWC go further than that. Its system will contribute greatly to establishing a wide-ranging regime of transparancy, openness, non-proliferation and trust in military matters under which further achievements in disarmament, including nuclear disarmament, will become much more feasible.

3. *Is the CWC a perfect treaty?* The answer is: certainly not. As any compromise, especially a multilateral one, the Convention contains

provisions that make a number of States unhappy. However, it could hardly be made better from the point of view of balancing various interests. For example, what may be considered by one group of States as inadequate, may be viewed by another as excessive. When the negotiations reached their peak in the summer of 1992 and many expressed their dissatisfaction with one or several provisions, it was theoretically possible to prolong the work. However, the risk was too high that in that case there would have been no Convention at all. At a certain point one had to draw a line.

Besides provisions that touch sensitive nerves in various Governments, the CWC text is vulnerable to criticism for being not very consistent and logical. In some cases, it describes almost every detail of operation (e.g. with regard to CW storage and production facilities), in some other areas it is not specific enough (e.g. in provisions designed to prevent and enforce non-development of chemical weapons). In my personal view the verification system is too bulky and costly with regard to declared facilities—a feature, which is not properly balanced as compared to the challenge inspection regime, which is much weaker.

Here again, we might have had a more logical and consistent treaty, had we decided to go on with negotiations, but the same risk of having no convention at all prevented this. One should also bear in mind that a number of inconsistencies in the text are due to the fact that negotiations lasted for more than two decades, and many concepts that appeared to be correct or acceptable at the beginning proved to be unsatisfactory at the end. Still their traces remained in the form of previously agreed phrases and paragraphs that delegations hesitated to improve or delete.

Indeed, negotiations started in the cold-war era with the primary focus on Soviet and American chemical weapons. They concluded when the whole problem of chemical weapons had ceased to be exclusively an East-West security issue and had become a multi-dimensional complex of East-West-South security and economic questions, and so the approaches to numerious issues like verification were changed.

4. *Verification.* I dare to re-emphasise the revolutionary nature of the CWCs verification system. Certainly it is not one hundred per cent foolproof. But it has sufficient deterrent capacity plus a mechanism that would not allow any serious suspicion of violation to be dismissed or forgotten.

It was stated above that the Convention's challenge inspections provisions are relatively weak. However I don't believe they could

have been made stronger. One shouldn't forget that the whole idea of challenge inspections, when advanced in 1984, had a significant propagandistic function built into it, given the characteristic response regarding such inspections at that time. Later, when the USSR accepted the concept, its original proponents themselves had to adjust it significantly to respond to the needs of protecting sensitive military and industrial inoformation. Besides, while for Europe (including the USSR) arms control inspections as such had become a routine exercise due to the CSCE and CFE negotiations and practical experience, for most of the world such inspections were seen as completely new and sometimes suspect undertakings. So the fact that most countries have now accepted the inspections in their most intrusive challenge-form is really worth noting.

Historically provisions for verification were developed in the following order: first, verification of chemical weapons stockpiles and production facilities, then verification in the chemical industry and, finally, challenge inspections.

Thus, inspection procedures at chemical weapons-related facilities are very intrusive and detailed; those for the chemical industry were reviewed during the last phase of negotiations and rendered more flexible; challenge inspection procedures were worked out at the last moment and contain in fact a variety of options the choice of which would depend on specific situations. One may conclude that there was a tendency to move from trying to prescribe everything in advance to establishing procedures that would allow a flexible choice of options. And that is, without doubt, a positive development. Moreover, it appears that in the case of the most detailed procedures of verification, the Organisation for the Prohibition of Chemical Weapons (OPCW) would have to adjust them to specific situations.

Ironically, in spite of the drive for perfection in verification, there is an obvious lacuna in the whole system. The problem is that the system's implementation mechanisms will not be in place immediately after the Convention's entry into force: the Director General will not have been appointed, inspectors will not have been confirmed, the list of inspection equipment will not have been approved, etc. Still, according to the Convention, each State party will have the right to request and obtain a challenge inspection, with no one to carry it out. This is just one of the issues which should be carefully considered in the Preparatory Commission.

As a more general observation for the future, one can ask whether it would not be better in such cases to use an approach often proposed in the past by the United States and some other Western countries. According to this concept, the main obligations under a newly negotiated disarmament treaty would become effective only after the organisation established by that treaty was in a position to implement its duties fully.

5. *A new combination of bilateralism and multilateralism.* Despite being the first product of a genuinely multilateral process, the CWC would not have been possible without a significant bilateral effort by the two major chemical weapons possessors—the USSR, whose place at the negotiating table was in 1992 inherited by Russia, and the United States. This contribution was made both at the expert and at the political levels.

In the first case, Soviet/Russian and American negotiations developed a number of very important technical procedures, but they were never submitted officially as joint or even unilateral proposals, because this work was conducted in a multilateral context. At first that was necessary to enable the two Super-Powers' experts to agree with each other more speedily. Sweden, with its excellent technical and diplomatic expertise, often played an important coordinating role in this respect. Later on, when Moscow and Washington were on much better terms, such work was often coordinated by chairmen of respective working groups, who were responsible for the outcome.

This mechanism was especially valuable because it made it possible to take on board positions and concerns of other States. During the concluding phase of negotiations, however, the most important questions were dealt with in a series of consultations involving two or more of the most interested partners, like the United States and France (on challenge inspections), the United States and India (on export controls), etc. in a rather transparent manner. To sum it up, the elaboration of the CWC produced a very flexible mechanism for combining what had previously been viewed as different types of negotiations—a development that could prove very useful for the future.

At a political and security level, bilateral talks between Moscow and Washington were highly conducive to building trust and bringing each Government to the basic political decision in favour of abandoning the concept of chemical deterrence. Such intermediate steps as the 1989 Wyoming Memorandum of Understanding on data exchange and verification experiments, and the 1990 bilateral chemical weapons

destruction and non-production Agreement (with all of its shortcomings) without any doubt paved the way for the chemical weapons Convention.

6. *Russia and the CWC.* Russia is the world's largest possessor of chemical weapons. At the early stages of negotiations the USSR played a rather negative role. In the second half of the 80s, its role changed fundamentally and it became one of the major driving forces in the negotiations which culminated in the Soviet/Russian chairmanship at the negotiations during 1991 and 1992. More recently, internal problems have made Russia again a rather difficult partner. In the final stages of negotiation Russia cited economic difficulties and requested a revision of two previously agreed pillars of the Convention: concerning the time-frame for the destruction of chemical weapons and regarding the requirement for the total destruction of chemical weapon production facilities. At the same time, it was not able to provide an open and factual account of its problems in a manner that could convince the other negotiators of the importance of its concerns. Personally, I see a major reason for this as an almost inevitable response under present conditions in Russia which makes it much easier to pursue narrow sectoral and even personal interests in the name of preserving national security than to work to meet the requirements of genuine security and economic stability.

This dynamic was also a factor that influenced the two remaining Russian concerns regarding the CWC. The first is the provision which requires a State party to pay for all multilateral verification activities related to the chemical weapons and chemical weapons production facilities on its territory. The second concerns some specific procedures for conversion of former chemical weapons production facilities requiring the destruction of certain equipment which may not be chemical-weapon specific and could be used in peaceful production, but which, for CWC purposes, fall under the definition of "specialised equipment". These are, in my view, not the best and certainly not the most logical provisions of the Convention, but they cannot be allowed to constitute a reason to stay away from this treaty which as a whole, signifies security and, hence, an economic gain for Russia. At the same time ways can and must be found to considerably ease the problems (and there are real problems) that these provisions create for Russia. Some of them can be developed in the Preparatory Commission. Others can be developed outside the Convention's mechanism, but not at the expense of its effectiveness.

This would be an important and in a sense crucial task. (Russia still has tens of thousands of tons of chemical-weapon agents to destroy.)

However this is not the only task in the area of "fine-tuning" of the Convention's system which has to be dealt with first by the Preparatory Commission and then by the OPCW itself.

But, the biggest real difficulty that Russia is facing in connection with the CWC is, of course, the destruction of chemical weapons themselves. The former Soviet government has done little to prepare properly for the implementation of the Convention. The new Russian authorities have moved quickly, but they have to work under extremely difficult political and financial constraints. It appears that substantial external assistance will be required.

7. *Some "unrelated" observations for the future.* The negotiations which led to the CWC and to the establishment in due course of it's new international organisation were certainly a significant success. But, it is hardly a way that should continue to be followed—going into so much detail with regard to future arms control, disarmament and security agreements. The world cannot afford waiting another 20 plus years in order to have another military significant global arms control treaty. The agenda is both wide and urgent. One could envisage a number of agreements without so much detail being worked out in advance but with flexible and imaginative machinery for implementation. This calls both for a review of global negotiating institutions and for a reassessment of approaches to a number of implementation mechanisms.

As the chemical weapons negotiations have shown, the concept according to which only limited negotiating bodies can be effective, is not valid any more. All interested States should have the right to participate fully in negotiations, which would not, in my view, make those negotiations more difficult. It would mean that the Conference on Disarmament could be opened to all those who display a real interest in its work and in formal participation.

The working methods of the Conference on Disarmament should become more flexible. It should be in a position to establish working bodies when the time is ripe and to allocate time and money according to actual needs. Participation in those working bodies (possibly with their own programmes of work that might be independent of the official CD sessions) would not necessarily correspond to the official CD membership. What should remain, however, is the consensus rule.

Another luxury that we would not be able to afford would be a proliferation of international agencies to implement specific disarmament agreements. For the future we will have to think about unification of

the implementation mechanisms (with due regard to the specificity of each agreement and its verification requirements). Such rationalisation would save resources and be able to be more systematic in analysing compliance with the respective arms control regimes.

In this context, one can also question the rationale of having each year one or two review conferences for this or that multilateral disarmament treaty. They cost a lot, last for two or three weeks (which is not enough time to consider the relevant issues seriously) and are manned usually by the same members of the Geneva family of the world "disarmament mafia". I believe that the task of reviewing the operation of such treaties should be given to a reformed Conference on Disarmament (provided its rules are modified to allow all States parties to one or another treaty to participate on an equal basis in the review process).

The conclusion of the chemical weapons Convention closes a whole era of multilateral arms control. Ahead is a new era which hopefully will be even more challenging, dynamic, interesting and businesslike—and we should get prepared for it.

CONCLUDING NEGOTIATIONS FOR THE CHEMICAL WEAPONS CONVENTION: A FLEXIBLE GLOBAL AGREEMENT WHOSE TIME HAS COME

Introduction

The chemical weapons Convention (CWC) concluded this year in Geneva at the Conference on Disarmament (CD) and widely supported in New York in the General Assembly is a unique achievement. It deserves the enthusiastic support of the entire international community, and prompt action by all States to bring it into force.

International concern over global proliferation of chemical weapons, their use in the Iran-Iraq war, and the global proliferation of missiles capable of delivering chemical weapons over long distances has rightly fuelled enthusiasm to conclude the CWC. The urgent need for it was underscored in particular by revelations this past year about details of Iraqi chemical weapons.

The Convention builds significantly on the 1925 Geneva Protocol's ban on the use of chemical weapons. In addition to banning the use of chemical weapons, the Convention proscribes their production, stockpiling, and transfer. The CWC obligates States parties to destroy chemical weapons and any chemical weapons production facilities they

may possess, as well as chemical weapons they may have abandoned on the territory of another State party.

The very extensive verification regime includes inspections of chemical weapons destruction and of chemical industry activities as well as challenge inspections of suspect activities. For the first time such inspections will be conducted on a global basis by international inspection teams.

The Convention represents the outcome of almost two decades of discussion and negotiation by the international community, a process in which the United States played a leading role.

This article describes the negotiating end-game and identifies key balances struck in the course of the negotiations. It discusses ways in which the chemical weapons Convention will contribute to international peace and security. Finally, it describes the role the chemical weapons Convention can play in United States security policy.

The Multilateral Process

The decision of the Conference on Disarmament to transmit to the United Nations General Assembly the text of the chemical weapons Convention in its final report represents a watershed in the long-running efforts to ban chemical weapons. Its many supporters are now taking steps to achieve universal adherence, and are preparing to implement its provisions.

The original draft of a comprehensive CWC was tabled in 1984 at the Geneva Conference on Disarmament by the United States. Since that time, the United States has actively participated in the negotiations.

The June 1990 bilateral chemical weapons Agreement with the former Soviet Union was designed to give major momentum to the chemical weapons negotiations. In it the United States and the USSR agreed, among other things, to cease all chemical weapons production and destroy the vast bulk of their chemical weapons stocks.

Soon after conclusion of the war in the Persian Gulf, the United States announced its intention to redouble efforts to stem the spread of chemical weapons. Washington changed key positions that had been widely opposed in Geneva concerning the right to retaliate in kind and retention of a small chemical weapons stock. In essence, the United States concluded that it no longer needed to be able to counter the threat of chemical weapons use with its own chemical weapons, but could rely instead on its overall military capabilities. As a result, we

no longer needed to retain a small portion of our stockpile rather than eliminating it entirely. This reversal helped catalyze the process and opened the door to successful conclusion of negotiations.

The President also called in 1991 for negotiators in Geneva to accelerate their work. This, too, gave momentum to the talks. The United States developed an approach intended to encourage all States to strive to conclude a Convention that the vast majority of States would join.

Negotiations in the Conference on Disarmament have been tough, slow and technically complex. Many compromises have been made in an effort to reach consensus among the CD member nations. Some countries have been especially active in finding ways to invigorate the process and propel it forward. Australia, for instance, gave a critical boost to the talks in March 1992 with a new draft of the CWC. This version consolidated and streamlined what had been a heavily footnoted document full of hard-to-track cross-references. By clarifying what had in fact been agreed, the Australian text eased the task of identifying and zeroing in on key unresolved issues. Although the text itself was not adopted, its introduction provoked "new thinking" and propelled the Conference into end-game negotiations.

The Chairman of the *ad hoc* Committee, Ambassador Adolf von Wagner of Germany, took up the challenge and resolved to focus the Committee's work on the areas in which disagreement persisted. He worked with great energy to generate consensus and—where consensus could not be found—to clarify differences and bring them into the open so they might be dealt with. Unresolved issues included some aspects of challenge inspection, composition of the Executive Council, schedules of chemicals and definitions, export controls and trade restrictions, handling of riot control agents, industry verification, destruction and conversion of chemical weapons and associated production facilities, as well as destruction of old and abandoned chemical weapons.

As the second part of the 1992 session of the Conference on Disarmament began in May, the German delegation issued a new version of the text, which reflected yet another improvement in structure and overall clarity. Chairman von Wagner appointed working groups to focus on the main unresolved issues and set a schedule that put pressure on participants to exhaust the alternatives in seeking solutions. He kept the heat on by stating his intention to find his own solutions if negotiators could not come to a compromise. This prospect gave extra

urgency to the discussions and ensured a thorough search for solutions, but did not resolve the hard-core remaining issues.

Continuing his innovative approach, Chairman von Wagner next created new working groups headed by "Friends of the Chair" at the level of ambassador. Advocates of opposing views were appointed to represent those views and seek compromise. In late-night sessions marked in some cases by acrimonious debate, negotiators again failed to close on solutions to all outstanding issues, but narrowed some differences.

The Chairman then produced a set of his own "visions," intended to be workable solutions that balanced (but did not always reflect exactly) opposing views. Although these "visions" did not contain everyone's preferences, they answered the need for compromise and provided an avenue out of end-game gridlock that otherwise might not have been found.

For the most part, these solutions proved acceptable. A number of countries persisted in efforts to alter treaty provisions at the eleventh hour, just before the August deadline for conclusion of the negotiations. Concern that one or more countries might hold the text "hostage" in final meetings of the *ad hoc* Committee ultimately proved unfounded, but attempts to delay and reopen negotiations were made right up to the final gavel. The negotiators agreed to pass the text forward to the CD for inclusion in its final report.

After overcoming further wrangles over composition of the Executive Council and the financial burdens of verifying destruction and conversion of chemical weapons production plants, the CD decided, by consensus, to include the unchanged text in its final report, which was then forwarded to the United Nations General Assembly.

General Assembly resolution 47/39, that commends the text and calls for early opening for signature, has so far received overwhelming support and was, in fact, adopted without a vote. There is a general expectation that many more than the fifty signatures required to trigger establishment of the Preparatory Commission will be collected at the signing ceremony in Paris in mid-January. It is therefore understood that the Preparatory Commission will begin its work promptly and that entry into force is likely by early 1995.

A Balanced Agreement

The balance of interests contained in the chemical weapons Convention is the product of tough negotiations. Although the hard-won compromises it contains do not always reflect United States

preferences, the United States believes that the overall package is acceptable. Balances were struck in a number of areas, notably protection of sensitive activities versus quick access for inspection; maintenance of export controls on suspect States versus the desire for freer trade in chemicals; obligation to destroy chemical weapons on schedule versus flexibility to deal with economic constraints; and comprehensive versus selective industry verification. Each of these is described below.

Protection versus Quick Access

The chemical weapons Convention is the first multilateral agreement with mandatory intrusive inspections that apply to the continental United States. Some of our concerns, of course, have flowed from our interest in protecting sensitive non-chemical weapons activities. As it now stands, the Convention provides an effective mechanism to investigate possible non-compliance through on-site challenge inspection. A multilateral inspection team's right to access in order to investigate possible non-compliance is clearly established. At the same time, the provisions provide protection for legitimate sensitive activities by means of limits on inspection time-frames, managed access provisions, and disincentives against abuse.

It should be noted that before the Stockholm Final Document was signed in September 1986, participating countries of the Conference on Security and Cooperation in Europe (CSCE) feared that challenge inspections of military exercises would lead to disclosure of sensitive information and threaten participating States' security. These fears were greatly exaggerated. Although the Treaty on Conventional Armed Forces in Europe (CFE) is just beginning its implementation phase, we should expect that initial anxieties about these inspections too will prove unwarranted.

In the chemical weapons negotiations, concerns about protecting sensitive national security activities were paralleled by worries that commercial proprietary information might be compromised. Some of the most sensitive commercial information has to do with the identity of suppliers, the quantity of goods bought and sold, and the prices paid for those goods. It is clear that with the protections built into the Convention, this type of information is unlikely to be exposed under its inspection requirements.

Export Controls and Trade Restrictions

On the economic side, some countries have expressed concern that their developing economies will be harmed because the Convention

does not explicitly require development assistance and does not rule out controls on trade in chemicals. This was one of the most difficult negotiating areas. None the less, these concerns were addressed fully in the Geneva negotiations. Although developing countries wanted to avoid being subject to export controls (maintaining that they needed to maximize trade opportunities for development reasons), others saw a need to continue to be able, on the basis of their own judgement, to impose controls outside the framework of the chemical weapons Convention.

As a result, article XI encourages the development of States parties' chemical industries. Members of the Australia Group, which monitors chemical weapons proliferation and sets guidelines for export controls to be applied to would-be chemical weapons States, have made a commitment to review their chemical-weapons-related controls with a view to removing them for exports to States parties that are in full compliance with the Convention. States parties will, however, retain their sovereign right to control the export of chemicals and equipment from their territory to promote national security and foreign policy goals.

Obligation to Destroy on Schedule versus Need to Accommodate Resource Constraints

The Convention requires a State party in possession of chemical weapons to destroy them all within ten years after entry into force of the Convention. This requirement received broad and enthusiastic support from the vast majority of CD members. None the less, most negotiating parties recognised that the technological difficulty and financial burden of destruction could make it hard for some countries to meet the obligatory deadlines. In particular, the Russian Federation raised this concern.

For this reason, negotiators agreed to provisions in the Convention that permit States parties, under exceptional circumstances, to request an extension or modification of the ten-year destruction schedule set out in the Convention.

Obligations retain their muscle, however. They can only be altered if States parties to the CWC agree that there is a compelling need. Furthermore, verification provisions can be strengthened and other conditions may be imposed if States parties believe the circumstances warrant. And the costs resulting from extension must be borne by the State benefiting from it.

Industry Verification

One of the most difficult balances to strike was between comprehensive and selective approaches to inspection in the chemical industry. Initially, an approach was negotiated that applies routine inspections to facilities that produce, process, or consume chemicals that could pose the greatest risk to the objectives of the Convention. Negotiators then focused on whether to inspect, in addition, facilities with a capability to produce chemicals that pose less risk. Should routine inspections be conducted at a large number of "chemical-weapons-capable" facilities or only at those that pose the greatest risk?

Eventually, a balance was struck between the need to keep an eye on a broad array of facilities and the need to ensure that the burden of declarations and inspection implementation does not outweigh the benefits. Additional facilities will be inspected on a less intrusive, less frequent basis and inspections of those facilities posing the least risk will not begin until four years after entry into force of the Convention.

Impact of CWC on Arms Control and Non-Proliferation

Two important chemical weapons-related challenges face the world community today. The first is eliminating huge stocks of chemical weapons possessed by the United States and Russia. The second involves reversing the spread of chemical weapons to some countries and preventing other countries from acquiring chemical weapons in the future. It is increasingly important to stem the spread of weapons of mass destruction and by extension, the prospects for their use in regional conflicts.

These challenges are currently well recognised. Responses to date have been primarily unilateral, or at best, bilateral, and have been aimed at discrete parts of these problems—efforts that are important in themselves but are not integrated on a global basis.

Existing agreements and policy instruments are diverse. The 1925 Geneva Protocol, for instance, bans the use of chemical weapons while still allowing reservations that preserve the right to retaliate in kind. The 22-member Australia Group is an informal forum, whose members try to harmonise their unilateral controls on chemical exports. The bilateral United States-Soviet, now Russian, Agreement to reduce chemical weapons stockpiles includes stringent verification of destruction, comparable to that under the chemical weapons Convention. The fact that at least 20 countries have acquired or are seeking to acquire chemical weapons highlights the need for a more integrated,

multilateral approach to the elimination of chemical weapons stockpiles. The Convention consolidates and extends existing efforts. It establishes a global norm against chemical weapons.

Elimination of existing chemical weapons stockpiles is one of the most pressing jobs ahead under the Convention. The Russian chemical weapons destruction programme will require close attention and outside assistance to ensure that the huge Russian chemical weapons stockpile is destroyed safely and on time. At the same time, other countries that possess or are in the process of acquiring chemical weapons will be under an obligation to furnish declarations if they join the Convention. Destruction and verification measures will need to be instituted in those countries under the terms of the Convention. This area will require additional outside attention and assurance.

International security will be enhanced as well through implementation of the Convention's verification provisions. These provisions provide a way to reduce arsenals in a predictable, stable fashion and will build confidence that the prospect of chemical weapons use will diminish. This is particularly important from the standpoint of regional security concerns.

As this Convention picks up signatories, the world will be watching to see which countries acknowledge possession of chemical weapons and which make commitments to rid themselves of what they have. The world community already has a good idea of who is in possession of chemical weapons. If a country joins the Convention and fails to disclose its own programmes or cheats, it will be taking a very big risk. The United States and many others will be looking carefully at initial declarations. We all will then assess the information provided and begin raising questions.

Inspections will contribute in a variety of ways: by raising the risks and costs of non-compliance; by building confidence that States parties are in compliance; and by furnishing a basis upon which States parties may act if non-compliance is confirmed. Provisions for consultation and cooperation will allow a State party to put pressure on another State party if its behaviour causes concern, through steps short of a challenge inspection. Concerns about possible acquisition or transfer of chemical weapons may be effectively resolved through these efforts. If not, challenge inspection provides a means to investigate aggressively.

Challenge inspection may not be used often, but in certain cases it will likely be necessary to exercise the right to request inspections.

States will have to weigh their interest in protecting sensitive sites against the value of candour and transparency. A blunt refusal of access and cooperation during a challenge inspection would set off political alarm bells, whereas openness will generate confidence. Either way, the right to challenge will serve as a deterrent to non-compliance and a spur to action in the event of refusal or compromising results.

Taken as a whole, the provisions of the chemical weapons convention establish a basis for multilateral action, up to and including the use of force authorised by the Security Council.

The CWC in United States Policy

The chemical weapons Convention is an important step along a path well established in United States policy. First and foremost, the Convention establishes a global norm against the development, production, acquisition, stockpiling, retention, transfer and use of chemical weapons. This reflects earlier United States commitments to eliminate its entire chemical weapons stockpile, but also the President's non-proliferation initiative of 1991, aimed at bolstering United States efforts to stem the spread of weapons of mass destruction.

The Convention also provides a way to integrate disparate policy instruments available to support these goals. As noted above, efforts to facilitate destruction of Russian stockpiles, to block acquisition of chemical weapons by would-be proliferators, and to reinforce incentives not to acquire chemical weapons are strengthened by being integrated and oriented toward the same globally agreed goals.

United States principles of non-proliferation policy are particularly applicable to the chemical weapons convention. For instance, the United States 1991 non-proliferation initiative provides the option to use compliance with the chemical weapons convention as one criterion that will affect decisions to provide assistance or cooperation. It also emphasises the possibility of multilateral enforcement of sanctions if weapons transfers occur or the use of weapons of mass destruction is confirmed.

The United States is providing technical and modest financial support for implementation of the United States-Russian bilateral destruction Agreement. In addition, since contributions to implementation of the Convention will likely be based on the United Nations assessment formula, we will shoulder a substantial share of those costs.

The United States is contributing actively to multilateral harmonisation of export control lists and enforcement in cooperation

with members of the Australia Group. As noted above, the Australia Group has issued a public statement committing its membership to review its controls with a view to lifting controls for parties to the Convention which are in compliance.

In addition, the United States will continue its campaign to press countries to sign, ratify, and implement the Convention. We believe that universality is an important goal.

There are two practical reasons why countries now hesitating might want to join the Convention. In the first place, early supporters will have a say in decision-making meetings on questions of staffing, finance, and organisation—questions that must be resolved early in order to get Preparatory Commission activities off to a successful start. In the second place, international momentum will put pressure on those holding out on joining because of the isolation they will suffer. Being left out will be increasingly difficult politically. Already, a clear majority of the United Nations membership has voiced approval. We can expect that others will join the Conventionearly on. Because we believe it is in their interest as well as in the interest of the world community, the United States will continue to press holdouts to sign and ratify the Convention.

Conclusion

The chemical weapons convention represents the world's best opportunity to eliminate the threat posed by chemical weapons. The alternative is to continue to take piecemeal steps that have neither the comprehensive scope of the chemical weapons Convention nor its global legitimacy. The Convention extends traditional arms control to a global forum, with opportunities to pursue aggressively possible non-compliance. The Convention also integrates global efforts so as to build confidence that all understand who is in compliance and who is not, and to provide a basis for appropriate political action.

From the standpoint of the United States and most others, the balance struck in the negotiations on key issues is not perfect but the overall result is very acceptable. The negotiating process, while tough, tedious, and at times acrimonious, maximised participants' opportunities to have their views heard. In our view, the Convention will help achieve broadly shared arms control and non-proliferation objectives while also protecting sensitive, unrelated activities and interests from unnecessary scrutiny. This will, at the end of the day, contribute to universal acceptance of the Convention.

The United States is working to establish a comprehensive non-proliferation regime that combines incentives and disincentives aimed at stemming the proliferation of weapons of mass destruction. The chemical weapons Convention will be a key element. Compliance with the Convention is one of the criteria by which the desirability of assistance and cooperation is likely to be judged. Furthermore, non-compliance, such as transfers or confirmed use of chemical weapons, may justify unilateral or multilateral action in response. In this way, the Convention provides a previously non-existent, globally agreed basis upon which to press forward with arms control implementation as well as efforts to stem the future spread of weapons of mass destruction.

The Australian Contribution to the Conclusion of the Negotiations for a Chemical Weapons Convention

The report of the 1992 session of the Conference on Disarmament (CD), containing a draft global agreement to eliminate an entire category of weapons of mass destruction— the chemical weapons Convention (CWC)—was adopted in Geneva on 3 September 1992. The Convention, which was transmitted in the report of the Conference to the United Nations General Assembly at its forty-seventh session and which will be signed at a ceremony in Paris in January 1993, will prohibit the development, production, stockpiling and use of chemical weapons, and provide for their destruction. It constitutes a global, comprehensive and verifiable multilateral disarmament agreement, for which there is no precedent.

The process by which this historic conclusion was achieved was a complex and difficult one, due, among other things, to:

- The highly sensitive issues of national security involved in the negotiation of an intrusive verification and challenge inspection regime, and the accompanying need to balance the interests of both the inspected States and the international community in ensuring the non-proliferation of chemical weapons;
- The potential conflict between the international trade restrictions required in a convention which aims to prevent the proliferation of chemical weapons, and the legitimate interests of States in developing their chemical industry;
- The complexity of the global chemical industry, which will be directly affected by the CWC, and the need to protect its commercial sensitivities.

Despite the complexity and difficulties inherent in the task, a balanced outcome was achieved through strenuous multilateral efforts. In welcoming the conclusion of the Convention negotiations, the Russian Federation's Disarmament Ambassador Serguei Batsanov, paid tribute to two countries in particular: Germany, under whose chairmanship the negotiations had been concluded, and Australia, "which took a risk to be the first one to get outside a customary framework of the so-called rolling text [the document of the *ad hoc* Committee on Chemical Weapons that details the status of the Committee's negotiations on a Convention] and to propose a comprehensive and more simple and understandable draft of the Convention, thus opening up the road which has led us to our present results".

Australia played an active role throughout the negotiations for the Convention, particularly during the concluding phase. Australia's Minister for Foreign Affairs and Trade, Senator Gareth Evans, contributed significantly to the process, not only through his decision to accord the matter high priority in Australian foreign policy, but also through his personal involvement at various stages, including his chairmanship of the Government-Industry Conference against Chemical Weapons, in 1989, and his efforts to focus political attention on the negotiations by ensuring, during recent years, that the CWC negotiations were on the agenda during his contacts with foreign ministerial colleagues.

To understand the significance of the Australian contribution to the achievement of the Convention, it is useful to review the history of the negotiations.

Background

Discussion on the possible shape of a CWC had taken place in the CD and its predecessor bodies since the early 1970s, and Australia participated in that process at both the political and technical levels from the time it became a member of the CD, in 1979. Formal negotiations for the conclusion of a CWC began in the CD in February 1984, when a negotiating mandate for the Conference's *ad hoc* Committee on Chemical Weapons was established. Shortly thereafter, in April 1984, a major initial impetus was given to the negotiations with the tabling of a draft convention by then Vice President Bush.

International concern with chemical weapons issues increased in the mid-1980s. The large-scale, well publicised and repeated use of chemical weapons in the war between Iran and Iraq during the 1980s evoked horror and condemnation. (One response to this was the

imposition of export controls by a growing number of chemical supplier countries to prevent association with CW programmes. Australia took the lead in efforts to harmonise these national measures by establishing the "Australia Group", to work against the proliferation of chemical weapons in the absence of a chemical weapons Convention.)

A considerable amount of useful technical work was carried out during the early years of the negotiations. In general, however, progress was slow because of East-West confrontation and bilateral suspicions. The reduction in East-West tensions in the second half of the 1980s led to the conclusion, in 1990, of the bilateral United States-Soviet Agreement on the destruction and non-production of chemical weapons. Under this Agreement, both sides would immediately cease CW production and commence destruction of their CW stockpiles by the end of 1992. Destruction would proceed so that each side would have destroyed 50 per cent of its CW stockpile by the year 2000, and further reduced its stockpile to 5000 agent tons by the year 2002.

It appeared by the late 1980s, however, that despite international arms control efforts, the use and proliferation of chemical weapons was, if anything, increasing. At the Paris Conference in 1989, the international community reaffirmed its commitment to the achievement of the CWC. The threat of use of CW by Iraq in the war in the Persian Gulf in 1991 further heightened awareness of the dangers posed by the unrestricted spread of such weapons, and led to renewed efforts in the negotiations in Geneva to conclude the Convention.

Negotiations were boosted by President Bush's announcement of May 1991 that the United States would destroy its entire chemical-weapon stockpile by the year 2002, and that the United States strongly desired that the CWC be concluded by mid-1992. Similarly the United Nations General Assembly, which for many years had unanimously adopted resolutions calling for the earliest possible conclusion of the Convention, called formally, in a resolution in 1991, for the CD to conclude its work on a draft Convention in 1992.

Australian Contributions

The Australian contribution to the negotiation of the chemical weapons Convention took place within the context of a broader national commitment to arms control and disarmament. The starting-point for Australia's vigorous disarmament policy is the belief that the field of disarmament and arms control in general should not be the exclusive domain of the Super Powers and other major military powers, but that

all States should be able to take part in the process. It is also Australia's firm belief that the establishment of international peace and security requires the negotiation of measures of arms control and disarmament which are concrete, practical and enduring. Pursuant to its disarmament objectives, the Australian Government has provided substantial material and intellectual resources for disarmament efforts; mobilised technical services to enable Australia to contribute directly to the resolution of the practical problems of arms control; participated actively and constructively in all available international bodies, including the Conference on Disarmament in Geneva; and worked to maximise influence in the arms control and disarmament field through cooperation with other countries interested and influential in such issues.

In this context Australia worked actively and indeed began to gain prominence both at diplomatic and technical levels in the CD's work on the Convention, in particular with the commencement of negotiations in the CD in 1984. In 1986, Australia chaired one of three working groups in the negotiations. In May 1986, Australia contributed significantly to the negotiating process by reporting on a trial inspection of an Australian civilian chemical plant. The trial inspection was the first of its kind, and paved the way for progress on the verification aspects of the Convention.

Regional Concerns

As the negotiations for a Convention progressed, concern increased, from an Australian point of view at least, over the fact that the southeast-Asia-Pacific region was under-represented in the CD in Geneva, and thereby in the CWC negotiations: Indonesia and Myanmar are currently the only CD members from this region, apart from Australia.

Many regional countries had not had the opportunity to follow closely the negotiations for a Convention and, in the absence of familiarity with its provisions, could not therefore be expected to adhere readily to the Convention once it was ready for signature.

For Australia, the involvement of regional countries in efforts to ban chemical weapons in a comprehensive way was of paramount importance. The 1980s brought evidence that an increasing number of countries were developing chemical warfare capabilities. It was feared that other countries, faced with security threats—including possibly some in the Asia-Pacific region—would in turn look increasingly to arming themselves with chemical weapons. Given the fact that these weapons are technologically straightforward and relatively inexpensive

to make, there was concern that developing countries in particular could be attracted to the idea of establishing chemical weapons capabilities.

The plausibility of chemical weapons proliferation in developing countries, coupled with the fact that defence against chemical weapons in warm, tropical environments, such as Australia's north, would be particularly difficult and costly, led to a regional focus within Australia's chemical disarmament policy, and to specific efforts to involve regional countries more actively in chemical disarmament discussion and, to the extent possible, in the Geneva negotiating process on a chemical weapons Convention.

Lack of southeast-Asia-Pacific involvement in the CWC negotiations was not, however, an issue of regional concern alone. Australia, along with other CD member States, firmly believed that the success and credibility of the Convention would depend on widespread and early adherence. It was feared that the moral force behind the Convention could be dissipated if its entry into force were prolonged by hesitant or indifferent approaches to signature and ratification, or if signature were not widespread and representative of all geographical regions. Australia, therefore, wished to ensure that, within the southeast-Asia-Pacific region at least, Governments would not delay in signing a CWC through unfamiliarity or lack of sympathy with the Geneva negotiating process.

Consequently the Australian Government, in June 1988, launched a Chemical Weapons Regional Initiative (CWRI), with the objectives of:

- Establishing a common view that each country of the region would be safer if it had reliable assurances that no country would have or would acquire chemical weapons;
- Establishing a forum for the provision of information and exchange of views among regional countries on progress in the CWC negotiations;
- Providing assistance to regional countries in their preparation for signature and implementation of a CWC.

The first CWRI seminar was held in Canberra in August 1989, and the second in Brisbane in November 1990. Both seminars effectively increased regional understanding of the CWC negotiating process and the issues involved, and contributed significantly to the development of a regional commitment to the conclusion of a chemical weapons

Convention. A third seminar, in Sydney in June 1992, carried the process further forward: the 21 participating States confirmed that their respective Governments were giving favourable consideration to the United Nations General Assembly's call to all States to commit themselves to becoming original States parties to the CWC. In preparation for signing the convention, and as a confidence-building exercise in the region, participants recommended that their Governments exchange statements containing the initial declarations which will be required under the CWC.

In conjunction with these seminars, a technical workshop, conducted in Melbourne in 1991, laid a solid foundation of reassurance among regional States that the verification activities envisaged under the Convention were practical and did not seek to interfere with the normal commercial operation of industry.

Australia will continue to assist regional countries in developing knowledge and understanding of the CWC, and in developing the appropriate legislative and administrative measures required under the convention. The efforts and energy devoted by Australia to regional involvement in the CWC have clearly yielded positive results, as indicated by the number of regional States which became original co-sponsors of resolution 4739, on the Convention, adopted by the General Assembly at its forty-seventh session. Significant representation among the original signatories to the CWC can reasonably be expected.

Chemical Industry Involvement

Cognizant of the impact of a future CWC on the global chemical industry, Australian and other officials became convinced during the early phase of the negotiations that an effective Convention would be achieved only with the support and assistance of the international chemical industry in both the design and implementation of the Convention. With this in mind, Australia agreed to organise a government-industry meeting with the aim of bringing together Governments and chemical industries from a wide range of countries, to raise awarensss of the problems of chemical weapons proliferation, and to consider ways in which Governments and industry could work together to achieve an effective, global CW ban.

Accordingly, in September 1989, Australia hosted the Government-Industry Conference against Chemical Weapons (GICCW) in Canberra, attended by senior governmental officials from many countries and chemical industry representatives from 95 per cent of the world's

significant chemical industry. GICCW laid the ground work for continued government-industry dialogue on CWC issues, at both national and international levels, and mobilised widespread support for the view that a workable CWC was within the reach of the international community.

Concluding the CWC

As noted earlier, a renewed sense of urgency to conclude a chemical weapons Convention had developed in the Geneva negotiations and in the broader international community by late 1991. Nevertheless, progress in negotiations continued at a pace slower than that which Australia and others would have preferred. This became increasingly frustrating for those who believed not only that the international commitment to the early conclusion of a CWC existed, but that conclusion was, in fact, within reach.

In order to test the validity of this claim, Australian officials began an exercise, intended originally for their own interest only, of producing a model CWC text. The aim of the exercise was to identify balanced compromise solutions to the many unresolved areas of the negotiations, and thereby to develop an indicative model demonstrating the sorts of compromises all negotiating parties would need to make in order to conclude the Convention.

On the basis of the work undertaken in developing the model text, the Australian analysis was that final agreement on a CWC could indeed be close at hand; in short, the exercise demonstrated, in Australia's view, that the General Assembly's call in 1991 for the conclusion of the CWC in 1992 was realistic and attainable.

Australian officials then visited many CD capitals to discuss the model text with relevant capital-based officials. On the basis of these discussions, Senator Evans concluded that there was value in taking the process further.

On 19 March 1992, Senator Evans presented the Australian model CWC to the Conference on Disarmament. The Minister stressed that Australia had not sought to establish an alternative or parallel negotiating process to the Geneva forum; the Australian model text was not a substitute for the rolling text. Rather, the Australian text represented an accelerated refinement of the rolling text, and demonstrated the means by which an instrument of self-protection could be delivered rapidly to the international community.

The Australian Government was particularly concerned that the international community not miss the window of opportunity available to it: East-West *rapprochment* had assisted in reducing the number of issues which would be "Convention-stoppers" for the negotiations. However, if the CD were unable to finalise an agreement in 1992, Australia believed it was doubtful that the political momentum required to clinch an agreement could be maintained indefinitely. It was possible that if no agreement were concluded in 1992, a CWC of the type then envisaged might never be achieved.

In this spirit the negotiations entered into a final, intensive phase. Conviction among many CD members grew stronger that compromises and agreement on a final text were possible. Nevertheless a series of controversial, complex issues remained to be resolved. Indeed, reconciliation of marked differences on crucial national positions continued to prove elusive until virtually the last moment of the negotiations.

The Chairman of the *ad hoc* Committee, Ambassador von Wagner of Germany, used the Australian model text as a basis for producing a Chairman's text, which, as the Australian text had done, attempted to create an accelerated refinement of the rolling text. This text was used as the basis for a period of intensive negotiations, during which time special working groups were set up to tackle specific outstanding issues. In order to ensure that discussion in these groups would proceed in the most constructive way possible, and to avoid having deliberations follow exhausted patterns of reiterating known positions in familiar contexts, special coordinators and moderators, with no previous role of direct leadership in respect of each issue, were appointed for each group. Where negotiation of issues had reached a stalemate, it was felt that fresh "management" could lead to breakthroughs. Australia's Ambassador for Disarmament, Paul O'Sullivan, moderated three such groups, and Ron Morris of the Australian Delegation chaired the Working Group on Verification in the Chemical Industry.

At the end of this process, the coordinators and moderators of each group produced papers which, in their view, and on the basis of the negotiations just conducted, represented balanced compromise positions for each outstanding cluster of issues. On this basis, and under the mandate of the *ad hoc* Committee, the first multilaterally based draft treaty was established in the form of a revised Chairman's text. Following a further three weeks of intensive negotiations, during which time specific proposals in relation to the revised Chairman's

text were considered in detail, delegations were asked to furnish the Chairman with those amendments which they felt could command consensus in the *ad hoc* Committee.

In parallel with this intensive negotiating phase in Geneva, extensive representations in capitals were made by Australia and other like-minded countries in order to galvanize support for a final compromise draft Convention.

It had become clear by this stage that a CWC would never be 100 per-cent satisfactory to all countries, nor indeed to any individual country. Increasingly, however, negotiating parties as well as officials in capitals accepted this as the price to pay for a Convention which would increase the security of all, and they therefore exercised the flexibility required to make the final compromises necessary for the Convention's conclusion.

Having thereby exhausted all negotiating possibilities, the *ad hoc* Committee's Chairman subsequently consolidated all amendments which it was believed could command consensus and produced a second revision of the draft Convention. It was essentially this text which was incorporated into the report of the Conference on Disarmament that was adopted on 3 September.

The successful conclusion of the CWC negotiations was historic in that it marked the establishment of a global treaty which will provide for the elimination of an entire category of weapons of mass destruction and for an unprecedented verification regime. It is, in effect, the first universal, verifiable disarmament treaty.

The outcome of the CWC negotiating process indicates clearly the important role which the Conference on Disarmament can play in the post-Cold War international environment. By virtue of producing an agreement which will be a practical instrument of inter-state cooperation and enhanced security, the Conference on Disarmament has not only contributed to the institutionalisation of multilateral cooperation, but has also demonstrated that flexible and creative approaches, combined with considerable perseverance, can lead to the realisation of ambitious, complex arms control and disarmament goals.

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IMPACT OF THE CHEMICAL WEAPONS CONVENTION ON DISARMAMENT FROM A MIDDLE-EAST PERSPECTIVE

At its 1992 session, the Conference on Disarmament completed negotiations on the draft Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction, and on 3 September it agreed by consensus to transmit the draft Convention, which it had adopted, to the United Nations General Assembly at its forty-seventh session.

In spite of loopholes existing in the draft text, a draft resolution was submitted to the General Assembly by which the Assembly commended the Convention and requested the Secretary-General to open it for signature. The next step will be the convening of a Ministerial Conference in Paris in January 1993, upon the invitation of President Francois Mitterrand, at which the opening for signature will take place. The Convention is the outcome of more than twenty years of multilateral negotiations in the Conference on Disarmament (CD) in Geneva. These negotiations involved directly 39 States members of the CD, together with approximately 40 States which are not members. From the Arab region, only three States members of the CD, namely Algeria, Egypt and Morocco, participated in the negotiations. Some other countries from the Middle East, including Israel and the Syrian Arab Republic, attended the formal sessions of the CD and the meetings of the *ad hoc* Committee on Chemical Weapons, but did not take part in the decision-making of the Conference.

In dealing with the chemical weapons convention from a Middle-East perspective, I will first evaluate the draft Convention *per se* from the technical viewpoint, and then examine its implications for the Middle East. The Convention will be considered together with other international

instruments governing other weapons of mass destruction, as the focus will be on efforts to provide for confidence-building and disarmament in the Middle East.

Technical Evaluation of the Convention

The Egyptian delegation to the Conference on Disarmament has worked diligently along with other delegations in order to elaborate a watertight Convention to ban chemical weapons. Egypt has always supported all measures designed to contribute to the promotion of international and regional stability and has always committed itself to engage in constructive negotiations to fulfil this objective. It is in this spirit that the delegation of Egypt, together with other delegations, has presented, in the course of the negotiations, amendments to the draft Convention, with a view to enhancing its universality.

Egypt has always attached great importance to including in the draft Convention issues that it regards as vital to its national security and interests. We genuinely hoped that such concerns would be included in the text. In the final stage of the negotiations, various delegations expressed the view that the draft Convention should take into account the different positions of all the delegations that participated in the negotiations. It was not possible, however, to translate into provisions all the detailed proposals of each delegation. A number of States, including Egypt, felt that their specific reservations and concerns were not addressed and should be registered in the proceedings. Some of the concerns of Egypt and those of several other countries were thus circulated as working papers and are reflected in the report of the *ad hoc* Committee, which is contained in the report of the Conference on Disarmament.

1. *Article II* is among the most important articles of the Convention since it defines chemical weapons, the core of this instrument. The wide-spectrum definition includes in its interpretation the entanglement of munitions and equipment, whether or not they are related to toxic chemicals, as long as the provision of article II comprises the word "separately" in paragraph 1. This opens the door to abuse of the verification procedures to the detriment of any State party. We had hoped that the proposal to leave the definition "Munitions and devices and any equipment specifically designed for use directly in connection with the employment of chemical weapons" to be elaborated by the Preparatory Committee. This concern has a bearing on article III, "Declarations", due to the fact that every State party to the Convention

should be aware, in advance, of what it has to declare in view of the eventual destruction of chemical weapons according to the provisions of article I, "General obligations", and other relevant provisions of the Convention.

2. Compliance with the chemical weapons Convention depends to a large extent on the verification procedures. Intrusive as it is, the verification regime for activities not prohibited under the Convention in accordance with article VI places an exaggerated burden on the civilian chemical industry by virtue of the challenge inspection procedure, which could lead to abuse and misuse.

3. *Article VIII* embodies the structure and functions of the Executive Council, its composition, procedure and decision-making. Egypt has long been known to support the principle of equitable geographical distribution as the basis for a just composition of the Executive Council.

It is also Egypt's conviction that all States parties to the Convention should have an opportunity to participate in the membership of this Council, thereby excluding the possibility of creating permanent seats. Egypt therefore advocated the application of the United Nations equitable geographical distribution of seats in this regard. This criterion might be supplemented by other parameters to be decided upon by each region, thus creating an adequate regional decision-making mechanism within each geographical group. However, we note that there is an imbalance in the distribution of seats among regional groups owing to the creation of semi-permanent seats. The largest regional group, Africa, which has 9 seats, was arbitrarily deleted from the seat rotating among the regional groupings of Africa, Latin America and Asia in paragraph 23 (*f*) of this article. Thus Africa was left again with less than fair treatment in comparison with all other regional groupings.

4. *Article IX*, on consultations, cooperation and fact-finding, is vital to the implementation of this Convention. There is general agreement that it entails high political value. Consequently, the verification mechanism provided for in article IX should correspond to the legal context of that article. It is in the light of the importance of the verification mechanism that the Egyptian delegation introduced a proposal for a safeguard against the possible abuse of this instrument. Unfortunately, the proposal was not adequately reflected in the draft Convention. It is worthwhile to note, with misgivings, that the powers of the Executive Council in as far as challenge inspection is concerned are less than adequate.

5. In addition, the draft Convention does not meet the requirement of providing full-scope security assurances to deal with instances of the use or threat of use of chemical weapons against a State party to the Convention by a State party or by a State non-party. This is a legitimate requirement which should be studied and addressed. The provisions of article X, "Assistance and protection against chemical weapons", stop short of providing sufficient guarantees and adequate obligations on the part of the five permanent members of the Security Council to oppose such a threat or aggression.

6. Article XI, on economic and technological development, is of great importance, and especially to the developing countries. Needless to say, developing countries are entitled to safeguard the promotion of scientific and technological knowledge in the field of chemistry for industrial, agricultural, research, medical, pharmaceutical or other peaceful purposes. They have the legitimate right to obtain assurances that the implementation of this Convention will not hamper the economic and technological development of the developing States parties. The present wording of article XI leaves open the possibility that States parties will eventually sustain damage to their economic and technological development as a result of the implementation of the Convention.

7. In view of its genuine need to live in peace and security and cooperate with other members of the international community, Egypt participated actively in the negotiations on the draft Convention and hoped that it would achieve global adherence by reflecting the legitimate sovereign rights and vital interests of all States. We appreciated the goodwill of the Chairman of the *ad hoc* Committee, who provided clarification of some provisions of the draft Convention. However, regarding his explanation on the definition of chemical weapons in article II, we find that it falls short of total clarity and is not completely satisfactory. Moreover, a question arises regarding the authoritative legal status at the level of interpretation of the Chairn's explanation. Nevertheless, his statement is indicative of the complexity of the draft Convention.

8. It is worthwhile to note that the compliance regime proposed in the draft Convention tends to focus, in particular, on the problem of weapons production and destruction within a transitional period. The actual use of weapons received inadequate attention in the Convention. Any delinquent country which already had chemical weapons could be in a position to use them. The best course of action to deal with this

type of situation would be to provide for a deterrence system. The Security Council may consider adopting a resolution on full scope security assurances to comfort the concern of parties to the Chemical Weapons Convention. It would be much better to deal with such a problem early, before the poissibility of use or threat of use of chemical waepons in defiance of the provisions of the Chemical Weapons Convention.

9. In spite of these misgivings and concerns, Egypt, in a spirit of cooperation, did not stand in the way of a decision by the Conference on Disarmament to transmit the draft Convention to the General Assembly at its forty-seventh session.

Chemical Weapons Convention and Security of the Middle-East Region

We believe that a good and balanced Convention on the prohibition of chemical weapons is a step forward, which enhances the implementation of President Mubarak's initiative of April 1990, which called for declaring the Middle East a region free of all weapons of mass destruction under effective international control. The said initiative is intended to involve all weapons of mass destruction, that is, nuclear, chemical and biological.

The draft chemical weapons convention, the non-proliferation Treaty (NPT) and the biological weapons Convention are considered to be the three pillars on which such a zone should be established. Hence, from the regional perspective, we cannot dissociate the chemical weapons Convention from the NPT and the biological weapons Convention. We are firmly convinced that all States in the region should bear equal, reciprocal and balanced obligations deriving from all three above-mentioned international instruments governing weapons of mass destruction. In this regard, I would like to recall the letter addressed by His Excellency Amre Moussa, Minister of Foreign Affairs of Egypt, to the Secretary-General of the United Nations on 21 July 1991, in which he enumerated basic elements for the promotion of international and regional stability and security. The said elements include, *inter alia:*

(a) A qualitative and quantitative balance between the military capabilities of all States in the region;

(b) The accordance of priority to ridding the region of weapons of mass destruction—particularly nuclear, chemical and biological weapons.

On 5 July 1991, Egypt had announced, through a statement made by Foreign Minister Amre Moussa, a series of additional ideas and proposals on the issue of regional disarmament in the Middle-East:

(a) The major arms-producing States, and particularly the permanent members of the Security Council, as well as Israel, Iran and the Arab States, were called upon to deposit undertakings with the Security Council in which they would clearly and unconditionally endorse the declaration of the Middle East as a region free of weapons of mass destruction and commit themselves not to take any steps or measures which would run counter to or impede the attainment of that objective.

(b) The arms-producing Sates and the parties to the treaty on the Non-Proliferation of Nuclear Weapons were called upon to step up their efforts to ensure that all nations of the Middle East that had not yet done so would adhere to the Treaty.

(c) States of the Middle East which had not yet done so were called upon to declare their commitment not to use nuclear, chemical or biological weapons; not to produce or acquire nuclear weapons or nuclear materials susceptible to military use and to dispose of any existing stocks of such materials; and to accept the International Atomic Energy Agency safeguards regime.

(d) Those States of the region that had not yet done so were called upon to declare their commitment to adhere to the NPT as well as the biological weapons Convention no later than the conclusion of the negotiations on the Convention on the prohibition of chemical weapons.

(e) The States of the Middle East were called upon to declare their commitment to address measures relating to all forms of delivery systems for weapons of mass destruction.

(f) The States of the region were called upon to approve the assignment to a United Nations organ or any other international organisation of a role, to be agreed upon, in the verification of the agreements to be concluded between them.

The above-mentioned considerations also fall within the scope of the peace process currently under way, since the Madrid Conference aims at restoring a comprehensive, just and final peace in the Middle East based on Security Council resolutions 242 (1967) and 338 (1973). Ridding the region of all weapons of mass destruction by the adherence

of all States in the Middle East to the NPT, the biological weapons Convention and the chemical weapons Convention would constitute a confidence-building measure which would accelerate the peace process.

The question of weapons of mass destruction was reflected in the statement issued at the end of the summit meeting of the Security Council convened in New York in January 1992. The members of the Council affirmed that the proliferation of weapons of mass destruction constitutes a threat to international peace and expressed their commitment to deal with threats to peace and reverse acts of aggression. In the light of this statement and the opening for signature of the chemical weapons Convention, called for in General Assembly resolution 47/39 of 30 November 1992, the security concerns of all States should be addressed.

This could be accomplished through the Security Council's consideration of a resolution on full-scope security assurances regarding all weapons of mass destruction: nuclear, chemical and biological. A precedent was established by the Council's adoption of resolution 255 (1968). When the NPT was opened for signature, the Security Council welcomed, by that resolution, the intention of the three NPT signatories—the United States, the United Kingdom and the Soviet Union—to provide or support immediate assistance, in accordance with the Charter of the United Nations, in case of nuclear aggression or threat of aggression. This assurance stops short of providing full-scope guarantees to non-nuclear States, as it does not provide negative security assurances. Such full-scope assurances are of particular importance in the Middle-East region now—a region liable to threat of use of not only chemical, but also nuclear and biological weapons until such time as these weapons are completely eradicated from the region and until all countries of the region adhere to the above-mentioned three international instruments. The Security Council's examination of the question of full-scope security assurances would encourage all countries of the Middle East that have not yet done so to adhere to those treaties. Thus the Middle-East region would become a zone free of all weapons of mass destruction, in accordance with President Mubarak's initiative of 1990.

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COST OF THE CHEMICAL WEAPONS CONVENTION FOR THE DEVELOPING COUNTRIES

Quite a lot has been said about the unique character of the chemical weapons Convention (CW Convention). While agreeing with most of the comments on its attributes, I do not intend to go into detail to repeat them here. The Convention is the first global treaty which aims at removing a whole category of weapons of mass destruction from the face of the earth; weapons which have been used in the past and deployed extensively during the 1980s.

Unlike other disarmament or arms control agreements such as the treaty on the Non-Proliferation of Nuclear Weapons (NPT) in which the States parties are divided into two groups—those which are allowed to keep their weapons and those which should not possess them—the chemical weapons Convention allows no State party to either maintain its chemical weapons stockpile or acquire these weapons in the future.

For the first time in the history of arms control and disarmament, we are establishing a global system of verification to verify the destruction of existing chemical weapons and, through the control of chemical industries, to ensure that these weapons are not produced again. When ratified, the CW Convention will set up the first international verification organisation in the field of disarmament. While there is the safeguards regime of the International Atomic Energy Agency (IAEA), it should be borne in mind that IAEA was established in 1957, following the "Atoms for Peace" proposal made by United States President Eisenhower before the United Nations General Assembly in 1953. The prime objective of the Agency was the peaceful use of nuclear power, not nuclear disarmament.

The unique character of the chemical weapons Convention will certainly set a landmark in international relations and is considered one of the most tangible results of the termination of the cold war. This Convention will set a precedent for implementing other arms control treaties, and future negotiators will be able to draw on the experience gained in implementing verification mechanisms for a global chemical weapons ban. The Convention will in many ways serve as a "guideline for future global disarmament treaties, which underlines its importance both for disarmament negotiators and for government officials involved in the administration of arms control and disarmament treaties." This reality made the job of negotiators at Geneva more difficult, since they were cognizant that any unwise and imprudent wording could have adverse effects on multilateral efforts in the future.

Another factor is that no other disarmament treaty involves the control of a whole industry. One of the important characteristics of the chemical weapons Convention is the verification of non-production of chemical weapons by the civilian chemical industry. This industry is by far the largest and the most profitable industry in the world, affecting directly the daily life of every individual and the level of welfare and economic development of societies.

Owing to the special character of the convention and the impact it will have on their security and economic development, the developing countries have adopted a serious attitude towards the treaty and have studied its various dimensions. A number of them presented their views on these matters in *ad hoc* Committee working papers, known as the "the 12-nation and 14-nation papers", in 1991. Subjects of the utmost importance to the developing countries, including mine, are the cost of the convention that they will have to bear and how it can be made affordable for them. This fact will have tremendous impact on the universality of the convention. The costs incurrred by the developing countries can be divided into two categories: direct and indirect.

Direct Costs

One of the unique characteristics of the chemical weapons convention, as was mentioned earlier, is the establishment of a universal system of verification to monitor and ensure the destruction of present stockpiles and to prevent any activity in the future by States parties prohibited under the convention. This verification mechanism is extremely complex in the actual scope of its activities and covers the following five types of activities:

1. Verification of the destruction of chemical weapons;
2. Verification of the destruction of chemical weapons production facilities;
3. Verification of non-compliance, to ensure that activities prohibited under the Convention are traced and checked;
4. Verification of permitted production in the chemical industry, to ensure that only the activities not prohibited under the Convention are carried out;
5. Investigations related to concerns of non-compliance (challenge inspection), to ensure that the cost of cheating will out weight its benefits.

To carry out all these activities, establishment of an international organisation becomes necessary. In addition to verification costs, this international organisation has to bear other costs, including those for administration and maintenance. In a working paper dated 24 August 1991, the United States delegation in the *ad hoc* Committee gave the annual costs of the Organisation as $163,548,185. Now the question is, who will pay for that? According to the provisions of the Convention, the States parties will have to pay based on the United Nations scale of assessment. However, the developing countries maintain that the share of the developed countries will be shifted onto prices of the chemicals they export, so that in the end it will be the developing countries which will have to shoulder the whole burden by importing more expensive chemicals. I sincerely hope that this will not be true. However, one expects that the first effect of the entry into force of the Convention will be a price increase of chemicals, particularly those designated as schedule 3 chemicals.

Indirect Costs

All agree that the universality of the chemical weapons convention is a must. However, the North and the South propose different approaches to arrive at such a goal. The North, taking advantage of its economic, political and industrial dominance, seeks to achieve this universality through imposition of punitive measures for those which may decide to remain outside the convention, while the South maintains that incentives should be given to States to enable them eagerly to join the convention. The most important incentive for them is that the Convention, while prohibiting any misuse or abuse of the chemical industry, advances cooperation and transfer of technology in the chemical field among the States parties.

Chemical and biotechnological industries, due to their diversification of production, the high percentage of added value in comparison with other industries, as well as their important role for public welfare, will enjoy a special position in the developing countries by the turn of the century. Since the public welfare and their economic development are considered to be tantamount to security, the significance of these industries to the developing countries becomes axiomatic.

The developing countries started their chemical industries in the mid-1960s with much emphasis on consumer industries. This caused them to become dependent on intermediate additives of refined chemicals of the developed world, which sometimes reached up to 80%. Some of the countries in the South whose national revenue mainly comes from agriculture and are not able to produce so-called technical grade pesticides as well as pharmaceutical raw materials are vulnerable to restrictions imposed by verification mechanisms. Some of the concerns of the South are that there will be:

1. an unreasonable rise in prices of many chemicals, particularly the phosphorous ones, to compensate for the verification costs borne by the industries in the North;
2. reluctance regarding the transfer of technology in chemical products, particularly in pesticides under the pretext that they may be used for chemical weapons production;
3. the creation of impediments in chemical trade due to an increase in red tape and in the decision making hierarchy;
4. a decrease in competitive markets and the possible establishment of giant chemical-industry monopolies;
5. a coming into existence of discrimination and suspicion in the international chemical trade;
6. politicisation of a purely commercial or technological subject;

Other indirect costs can also be identified. The regulation costs will be greater for the developing States. As I said earlier, there are a number of repercussions possible from the chemical weapons convention. First, huge regulatory costs for the small chemical industries of the developing countries could even force them out of business. The gigantic enterprises of the West are already following their national rules and regulations such as those designed for protection of the environment. In other words, the costs of new regulations could lead to the creation of chemical cartels in the world and to the annihilation of small chemical industries.

Second, certain technologies may be prevented from being sold to the Third World. Many companies in the West may prefer not to sell "capable facilities" to the developing countries, and, if they do, they may charge more to cover the perceived risks involved in such sales.

Third, some purely commercial transactions in the chemical field may become unnecessarily politicised—in which case, the developing countries would have to bear the consequences. They have less powerful political leverage to manipulate the new situation.

Fourth, the bureaucratic costs due to controls and obligations to provide detailed declarations will bear disproportionately heavily on the industries of the developing countries which are not accustomed to doing this work under their national legislation.

Some Proposals

The question may arise as to how these costs can be minimised to make the Convention more attractive to the developing countries. Although ready-make solutions are not to hand, ideas which might be considered would include the following examples.

1. Withdrawal of existing discriminatory restrictions in the export of chemicals and their technology among the States parties. Restrictions whether unilateral, bilateral or multilateral such as those envisaged by the Australia Group to check the proliferation of Chemical Weapons should be lifted once the Convention enters into force. These restrictions made sense in the absence of a Convention with verification mechanisms. The assurances given so far are not adequate.
2. Undertakings by the Western States parties not to let the prices of chemicals of their industries rise unreasonably and in fact to put a cap in place to prevent this, taking into account all legitimate economic considerations of their industries.
3. Adopting measures to promote universal adherence to the Convention through transfer of technology, material and equipment for peaceful purposes in the chemical fields as demanded by the summit of the Non-Aligned Movement in Jakarta, Indonesia in September 1992.
4. Financial contributions from non-governmental, non-profit and tax deductible organisations to start off the preparatory committee of the Chemical Weapons Convention. The Western chemical industries can donate equipment and means needed

by the technical Secretariat and international inspection teams free of charge.

5. Financial and technical assistance to those countries which seek to destroy their chemical weapons.
6. Cooperation and assistance in the field of protection against possible use of chemical weapons as stipulated in article X of the Convention. The fund envisaged in this article is voluntary. We should ensure that it will not remain empty.
7. Providing technical training to experts from the developing countries as potential inspectors in the Technical Secretariat of the Organisation or as personnel of their respective national authorities which will provide for liaison between the Organisation and the national responsible organs. It has been three years since Finland started such training, and Germany began last year, but there is a need for further training programmes by other industrialised countries.
8. Assistance to the States parties from the developing countries to establish their computer systems to have a database for keeping track of declarations and successfully carrying out their obligations under the Convention. Many violations of the provisions of the Convention particularly in the first years may not come as the result of bad intention but more from lack of expertise, lack of technical know-how for data-collecting and data-reporting, lack of money to support such a huge enterprise either through buying a computer system or recruiting personnel to the job or simply lack of experience.

Conclusion

The conclusion which I would like to draw is that the negotiations on chemical weapons started more than two decades ago as an aspect of the East-West conflict and ended somehow as a North-South competition. Now there is a great opportunity to turn the chemical weapons Convention into a vehicle for concrete cooperation among all in a bid to create a safer world for generations to come.

Many points discussed during the negotiations have not been included in the text of the Convention and therefore very much depend on the good intentions of States parties to the Convention. Either it will become another point of animosity among States or a cradle of cooperation and a good prelude to a new world order. It is up to the States parties to decide which path they choose to follow.

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CHEMICAL WEAPONS CONVENTION: A THIRD-WORLD PERSPECTIVE

The 1992 session of the Conference on Disarmament (CD) was undoubtedly the most productive in recent memory. After some 20 years of slow, often somnolent negotiations, the CD adopted a draft Convention banning chemical weapons (CWC) and transmitted it by consensus to the United Nations General Assembly. On 30 November, the Assembly adopted without a vote resolution 47/39, co-sponsored by over 100 countries, by which it commends the draft Convention and requests the Secretary-General to open it for signature in January 1993. For all practical purposes, the tentative steps taken in 1968 to discuss agenda item 4 in the Eighteen-Nation Committee on Disarmament finally culminated in a comprehensive Convention during the 1992 session of the 39-nation Conference on Disarmament.

Even though the biological weapons Convention was signed in 1972, the discussions on a possible CWC remained desultory and unfocused till 1984, when the *ad hoc* Committee on Chemical Weapons was set up by the CD to start "the full and complete process of negotiations", and work out the Convention. The Committee worked on the basic structure of the "rolling text" established that year. While the work in the Committee continued, the lack of political will in the chemical weapons countries and the nuclear focus on disarmament matters made the conclusion of a CWC a distant goal.

Regrettably, it was an avoidable calamity, in the form of the war in the Persian Gulf following Iraq's invasion of Kuwait, which provided the final impetus to the slow-moving negotiations on a CWC. The threat of Iraq's launching a chemical weapons strike at any time during the war catapulted the chemical weapons issue to the top of the disarmament agenda. While Iraq did not, ultimately, use any chemical

weapons during the war, the enormity of such a possibility in the future and the unfolding knowledge among Western Governments that technology, material and expertise on chemical weapons were regularly, though clandestinely, passed on by corporations and companies in the West to many Arab nations spurred them into real action to achieve a CWC by 1992. This led to the intensification of the negotiating process in the CD in 1991 and it reached its climax in 1992.

Neither the languid, somnolent phase of negotiations in the 1980s nor the hectic, intensified phase in the 1990s was the result of any act on the part of the developing countries or the Group of 21 in the CD. The pace of negotiations was influenced by the the political and security perceptions of countries of the North Atlantic Treaty Organisation (NATO), primarily in the context of, first, the cold war and, second, the situation in the Persian Gulf and the Middle East. The uncertain events unfolding in the "East" following the collapse of the Soviet Union and the resulting danger of "proliferation" of chemical weapons may have been yet another factor in Western calculations on this issue.

As far as the developing countries as a whole are concerned, chemical weapons have never been considered a significant threat to their security. Some Arab and Islamic neighbours of Israel perceived chemical weapons as deterrents against an Israeli nuclear threat, though this perception was not shared by most developing countries. For many of them with growing civilian chemical industries, the concern was the economic and industrial implications of a CWC. Their concern was heightened by what they considered unilateral, arbitrary and discriminatory trade and technology transfer arrangements by the industrialised countries under the umbrella of the Australia Group. The intrusion of international inspectors and bilateral observers into the chemical industries of developing countries with not even a hint of chemical weapons activity was yet another source of concern to many of them.

For these and other reasons, the perspective of developing countries and their stand in the chemical weapons negotiations were naturally different from those of the developed world, for whom political and security interests were predominant. As negotiations on the details of a CWC continued at an impressive pace in 1992, many developing countries felt that despite their abhorrence of weapons of mass destruction, their particular concerns about the underlying concepts of the Convention were not being fully reflected in the negotiations. It was also felt by many that, on some particular issues, especially those related to verification, there was a tendency to marginalise or to ignore

some of their specific concerns. During the concluding phase of these negotiations, however, efforts were made to overcome these differences, and finally the desire to conclude a multilaterally negotiated CWC prevailed over prospects of failure.

In the negotiating process itself, the draft treaty submitted by Australia was the first serious attempt to offer a solution to all outstanding problems in the rolling text, and all footnotes were eliminated. This enabled the Chairman, Ambassador von Wagner of Germany, to present in May a working paper for the final phase of the negotiations.

For a number of years, the stand of the United States Administration with regard to keeping a 2 per-cent security stockpile till all other chemical-weapons possessor States had destroyed their stocks to equivalent levels cast its shadow over the negotiations. The great fear of developing countries was that the convention would be yet another non-proliferation instrument creating two classes of States: one consisting of the "responsible" countries, which already had the capacity and stockpiles and whose interest would somehow be legitimised, and the other consisting of those "irresponsible" developing countries, which did not have either the capacity or the stockpiles and which were merely being asked to acquiesce in the discrimination. Instead of a convention aimed at the total and complete elimination of chemical weapons, it could then have become a thinly disguised tool to prevent the "spread" of chemical weapons. Developing countries were squarely opposed to such a result as well as to all *ad hoc,* stopgap, partial or discriminatory measures aimed at a selective fragmenting of this global problem. Fortunately, the United States changed its policy in May 1991, and this helped considerably in moving the process forward.

The Chairman's draft paper of May 1992, while creating a basis for the Convention, aroused apprehension in the minds of many developing member countries of the CD. Their concerns encompassed a whole range of issues. Denial of developing countries' access to peaceful chemical technology, material and equipment, the extent of intrusiveness of the verification system, including verification for activities not prohibited under the Convention, the possible abuse of challenge inspection procedures and the desire to protect and safeguard sensitive information and installations not relevant to the Convention were some of the major concerns which prompted a group of 12 developing countries (later expanded to 14) to propose detailed comprehensive amendments to the Chairman's working paper. The negotiations in May-June 1992

centred around the amendments presented by the group of 14 developing countries (G-14), though some of them thought that the negotiations were less about amending the draft paper than about appearing to do so. There was also unjustified suspicion among some developed countries that the amendments were intended merely to delay the negotiating process. The fact remains that the G-14 amendments that were presented in a series of working papers were a positive contribution to the final Convention and were intended to be constructive from the outset. The result was a revised working paper that was issued by the Chairman in June.

It would be useful here to examine some of the major concerns which led to the G-14 amendments in order not only to appreciate the negotiating process, but also to understand the importance of proper implementation of the Convention in order to allay these concerns.

On article XI, relating to economic and technological development, there was a clear desire on the part of developing countries to ensure that, once the Convention entered into force, all existing discriminatory restrictions outside the scope of the Convention, based on unilateral action or harmonisation of export control policies, would cease to exist among States parties. Given the fact that the CWC would subject the chemical industry and other facilities in all countries to verification procedures and would contain procedures for sanctions against potential violators, it seemed that current unilateral restrictions of this kind would have no place once the chemical weapons Convention entered into force.

The prime focus of this apprehension was the Australia Group and the announced desire of some of its members to perpetuate it, regardless of a CWC. The developing countries believed that the solution to concerns prompting the activities of the Australia Group lay not in unilateral, arbitrary decisions, but in multilateral arrangements and agreements arrived at through negotiations and universal participation. Despite intense negotiations and efforts to bridge the gap in the position of the two sides, a solution eluded them in the May-June negotiating phase.

Nevertheless, the discussions continued as the deadline neared. The compromise which finally enabled a consensus to emerge was symbolic of the desire on the part of developing countries to promote and achieve a CWC. Without committing themselves to the dismantling of the Australia Group, its members agreed to a statement made on 6 August by Ambassador Paul O'Sullivan of Australia on behalf of the members of the Group that were members of the CD, which indicated

the willingness of the Group to remove restrictive measures on international cooperation and trade in the chemical field. Even though it was related to the fulfilment of certain conditions, this statement indicated recognition of the developing countries' concerns. While this was not satisfactory by itself, changes made to the actual language contained in article XI enabled developing countries to drop their insistence on their proposed amendments.

Translation of this intent into action as the CWC is implemented will be a crucial factor. National implementation measures under article VII of the Convention will require that existing national regulations with regard to trade in chemicals, equipment and technology be harmonised with the obligations under the Convention, and it will be necessary to ensure that they are reviewed for the benefit of all States that adhere to the Convention and comply with its provisions. There are still lingering apprehensions on this score. Any intention to continue dual regimes of controls after the convention enters into force would expose those attempting to do so to charges of insincerity.

Developing countries are firmly of the view that the Convention should not be used, under any circumstances, to deny them unhindered access to peaceful technology in the chemical field and to the supply of chemicals, equipment and material. They believe that all existing discriminatory restrictions on trade relating to scheduled chemicals as well as equipment should be removed immediately upon the Convention's entry into force. As they see it, the commitment underlying the statement made on behalf of the Australia Group in the CD on 6 August will have to be carried out fully and promptly. They also feel that the Australia Group will have to dissolve itself both in letter and spirit as far as trade in chemicals and related equipment is concerned, in order to promote healthy universality and credibility for the convention.

In the field of routine verification of the chemical industry, there were two schools of thought. The first, championed by the developing countries, argued that verification provisions had to focus on the relevant chemical industry producing the scheduled chemicals; and the second, reflecting the perspective of the developed countries, argued for verification activities to be extended to the entire chemical industry dealing with any discrete organic chemical, with a few exceptions. Related to this were differing perspectives on the thresholds for verification, the inclusion of processing and consumption in addition to production of scheduled chemicals, and the selection process. A

compromise was finally achieved on these differing perspectives whereby thresholds were raised in an effort to eliminate the smaller, "backyard" producers, verification efforts were focused on the production of scheduled chemicals and, while declarations were to be made for the production of discrete organic chemicals, their verification would be the subject of further discussions and decision by the Conference of the States Parties three years after the entry into force of the Convention. The national selection process for verification of facilities producing discrete organic chemicals would also be a subject for further decisions by the Organisation and Conference of the States Parties.

Many developing countries still feel that these efforts were not enough. They believe that some of the Convention's provisions relating to routine verification will place a higher and unnecessary burden on the civilian chemical industries of developing countries and will increase the cost, thereby affecting the economic viability of their chemical industry. They also feel that the requirement for declaration and verification of a large number of small chemical facilities which have no relevance to chemical weapons is yet another unnecessary burden imposed on developing countries. In the future implementation of routine verification activities by the Organisation, care will have to be taken to ensure that these activities are kept to a minimum necessary in order to inspire confidence, are focused and easily affordable, and can be implemented. If this is not so, the costs of verification will inevitably put a heavy burden on developing States parties to the convention, making it less attractive for developing countries to join it.

The challenge verification provisions of the Convention were also the result of extremely difficult negotiations and remain a source of some concern. In the view of some developing countries, the intrusive nature of the challenge inspection procedure finally developed is such that the possibility of misuse and abuse cannot be entirely ruled out. Due to zeal to ensure that each and every possible scenario of "cheating" is covered by these provisions, some unrealistic time-frames may have been built into the challenge inspection procedure. Therefore, in implementing these procedures and in calculating the time it will take an inspection team to arrive at the point of entry, the Technical Secretariat will have to take into account the respective time zones of the inspected State party and the seat of the organisation, the geography and infrastructure of that country and the location and accessibility of the inspection site *vis-a-vis* the point of entry. Otherwise, the provision of a 12-hour initial notification period—which has been built into the

Convention—could place the inspected State party in a position where, for practical reasons, it might be unable to fulfil its obligations under the Convention. Similarly, the time-limit of 12 hours within which the Executive Council will have to meet to review the request for a challenge in spection could prove to be impractical and unrealistic if the request is submitted late in the evening to the organisation. Ways and means to ensure that a meeting of the Executive Council is possible under these conditions will have to be found if this time-frame is to be adhered to in the context of the Convention.

Provisions on destruction of chemical weapons and chemical-weapon production facilities, which were agreed to in the negotiations quite some time ago, had to be revised during the final phase of negotiations due to the stated inability of the Russian Federation to meet them. As a result, extension of the destruction time-limit by a maximum of 5 years in addition to the 10-year time-limit built into the Convention and conversion of chemical weapons production facilities are now possible under certain conditions. Developing countries which have always stood for a minimum time-limit for the destruction of chemical weapons and their related production facilities felt that their views on this important issue were ignored in the final phase of the negotiations. Care will, therefore, have to be taken to ensure that the extension provisions are invoked only if absolutely necessary and not as a matter of course, if the chemical weapons Convention is to inspire the confidence of States throughout the world.

Despite the improvements in the text of article X, dealing with assistance in the case of use of chemical weapons, which were made through last-minute negotiations, some developing countries still feel that, unlike the unambiguous provisions relating to verification, there is no binding and clear-cut commitment for financial contribution envisaged in the article. It will, therefore, be necessary to ensure in the future that the so-called "voluntary fund" has enough resources to be of use when needed.

Before the Convention's entry into force, the Preparatory Commission will have to deal with several important subjects, for example, developing appropriate percentages to apply to low concentration of scheduled chemicals, developing guidelines for the verification facilities which are engaged in "captive use" of scheduled chemicals, developing rules and procedures for the organs of the Organisation and preparing inspection manuals and, above all, defining chemical weapons under article II. In all these tasks, universality and non-discrimination will

need to be the primary objectives, and ways and means will have to be found to ensure accession of all countries in all regions of the world.

Despite these fundamental concerns, I am convinced that developing countries will overwhelmingly support and join the Convention. Early conclusion and universal adherence to a comprehensive Convention placing a total and verifiable ban on chemical weapons are important steps in the field of multilateral disarmament. It is important to them that the Convention will outlaw an entire category of weapons of mass destruction.

Though the developing countries as a whole did not give the same importance to the CWC as a security treaty that the developed countries did, they recognise that it will enhance security for all. Even though the Convention does not meet all their concerns, they know that it obliges the possessors of chemical weapons to destroy them and to become non-possessors.

Much has been said about the value of the CWC verification regime and its precedent-setting role for future globally negotiated multilateral regimes. It is true that verification is considered by many to be the core issue of the CWC. The many years of negotiations have resulted in establishing a balance between credible verification on the one hand and national sovereignty and security on the other. These achievements will remain the basic guiding light for verification regimes in future treaties/conventions.

However, what is more important in my view is the precedent-setting significance of the Convention itself, about which little has been said. The United Nations General Assembly addressed the question of weapons of mass destruction as early as the late 1940s, identifying them as biological, chemical and nuclear weapons. The biological weapons Convention was negotiated in 1972, and we have just concluded a chemical weapons Convention with a strict verification regime. Humanity is still in danger of extinction by nuclear weapons, whose possessors are, as yet, under no legal obligation to destroy or eliminate them since no multilateral or international regime on nuclear weapons exists. As a globally negotiated regime with effective verification, the CWC provides an excellent precedent for work on a similarly negotiated, verifiable convention on nuclear weapons.

The chemical weapons Convention is a path-breaking accomplishment to which all countries contributed in some measure. It is a truly global effort. It is bound to influence multilateral progress

in other areas of disarmament, especially in the field of nuclear weapons, wherein it should be emulated. In the process of negotiations leading to the CWC, remarkable accommodation was shown by all participating nations in narrowing gaps between differing perspectives, in agreeing on principles and in engaging in a cooperative effort to construct a regime-building enterprise envisaging global regulation for common benefit. How to build on this solid foundation in order to achieve nuclear disarmament is our next challenge.

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A LATIN AMERICAN VIEW OF THE CONVENTION ON THE PROHIBITION OF CHEMICAL WEAPONS

The question of chemical weapons is one of the areas of arms limitation that has occupied the international community's attention since the first decades of this century. The use of asphyxiating gases on the European battlefields of the First World War awakened humanity's conscience to the unusually cruel and indiscriminate nature of chemical weapons and emphasised the terrible transition in our century from professional to total war, in which no sanctuaries or protected zones remained for the civilian population.

The Geneva Protocol of 1925 established a legal check to this threat and undoubtedly marked a step forward. Nevertheless, the final word had not been said with respect to chemical weapons, and the 1930s saw a reversion to their use. It is interesting to note that during the Second World War, in spite of the enormous and almost uncontrolled use of all the means of destruction in vented up to that moment—including nuclear weapons—chemical weapons were hardly used. This is an indication that the analysis the strategists and military decision makers had made regarding the use of chemical weapons had led them to the conclusion that their effectiveness from the military point of view was at least highly questionable.

That did not prevent the continued inclusion of chemical weapons among the arsenals and options of the great Powers of the second post-war era, both the chief military Powers and those of lesser importance.

The recent use of such weapons in the Middle East reminded the whole world of their threatening nature and their destabilising character with regard to regional security. Indeed, their use in recent conflicts

such as the war between the Islamic Republic of Iran and Iraq gave rise to a lively technical and military debate as to whether or not they were relevant as an instrument of war.

Although opinion was not unanimous on the matter, it may be said without oversimplification that there is broad agreement that chemical weapons cannot be regarded as a strategically decisive factor in modern war, particularly in view of the high degree of sophistication of the means of protection developed, which substantially reduces their military value.

It might legitimately be asked, then, what importance the Convention on the prohibition of chemical weapons has if the chemical weapons we are prohiibting are of little military value. It is at this point that our judgement must be refined.

It may be easy to neutralise chemical weapons in some theatres of war, such as those in which an East-West confrontation might have taken place, where the availability of means of protection might have made resort to chemical weapons ineffective. But, this argument loses much of its force in a different context, such as that of a regional confrontation outside Europe.

Moreover, the relative ineffectiveness of chemical weapons as an essential means for deciding the fate of a military operation does not exclude their employment as a psychological weapon—precisely because of their destructive nature—if the use of chemical weapons is regarded as a useful instrument for obtaining a miltiary advantage through terror.

It seems clear then that the doubtful effectiveness of chemical weapons from a strictly military point of view is insufficient to guarantee their non-use.

Moreover, what we are dealing with is a weapon of mass destruction that is relatively easy to develop, the basic technology for which is several decades old, so that a country wishing to provide itself with chemical weapons would, in all likelihood, encounter no major technical problems.

Considerations such as these make it unnecessary to reiterate that the existence of a convention completely prohibiting the development, production and stockpiling of chemical weapons, and providing for their destruction as well as the unconditional prohibition of their use would surely make this world a safer place.

As regards Latin America and the Caribbean, unlike other less fortunate regions of the planet, there is absolutely no example of their

use or even production by any of the countries making up the Latin American community. This enables us to deal with the question from an almost comfortable point of view, if that word is appropriate in the case of instruments of destruction so devastating.

Taken to an extreme, this logic would indicate that the subject is not a matter of priority for the region in the absence of a specific threat.

That has not, however, prevented Latin America and the Caribbean from taking the lead in other areas of disarmament in the past, establishing standards which acquired an exemplary character for other regions of the world. Thus, from 1963, Latin America embarked on a process intended to bar nuclear weapons from the region. The Treaty of Tlatelolco and its Additional Protocols was thus a powerful political message from a region without nuclear weapons that was addressed to the rest of the world.

In the same way, in the field of conventional weapons, the 1974 Declaration of Ayacucho marked another milestone with respect to the agreed limitation of conventional weapons, initiating a process which then became institutionalised under the rubric "confidence-building measures".

Latin America, which is proportionally the planet's least heavily armed continent, lived up to its best traditions in adopting the Declaration of Mendoza, signed between Argentina, Brazil and Chile, on chemical and biological weapons, and the Declaration of Cartagena, in which the countries of the Andean Pact adopted a clear position against such weapons of mass destruction. In spite of the existence of these commitments, the security of the region and of each of its nations can only be complete with the entry into force of multilateral agreements prohibiting categories of weapons for all States forever. With respect to such weapons, no sanctuaries exist. All of us may, at some time, suffer from their effects, as long as they exist. And that applies to arms of little military value, such as chemical weapons.

Apart from the strictly military aspects of security, mention should also be made of the *economic and commercial effects* of the Convention on chemical weapons once it enters into force.

In order to ensure its effective implementation, this Convention will be provided with verification machinery that can well be termed unprecedented. Its central component in this respect involves challenge inspections, the purpose of which is, in fact, to provide the States

parties, through a delicate process, with the necessary guarantees in those situations in which a suspicion of violation exists or in ambiguous situations sufficiently serious to be considered a serious threat to the Convention. These inspections go to the heart of the prohibition, and ensure that the Convention will be robust, effective and very difficult to violate.

In this area of what might be termed politically sensitive inspections, the framework of the Convention is seamless. Mechanisms like those of "controlled access", worked out carefully and in a balanced manner, constitute a basic guarantee that the provisions of the Convention in this area will not be abused or used for purposes which go beyond the simple clarification of a given situation. I think I can add that, from the Latin American point of view, the more intrusive the system of challenge verification the more the interests of regional security are protected.

It is worth a digression to touch on the subject of inspections of activities not prohibited by the Convention, or what, in the language of the negotiations, is also referred to as inspections under article VI. This part of the Convention's verification scheme is precisely the one which will have direct consequences for the civilian chemical industry. The approach here is different from that of the first mechanism (challenge inspection). There are thus two systems: one which must be regarded as complete and reliable—the challenge inspection—and another which is more balanced—that of article VI.

This difference prompts a series of observations that are directly related to the Convention's impact on the activities of States with respect to the civilian chemical industry, whether private or public.

The verification system envisioned for this industry under article VI entails some kind of routine inspections, that is, inspections which are not in response to specific complaints or suspicions of violation, but merely verify that the chemical substances produced by the industries are used for purposes not incompatible with the purposes of the Convention, and that the kinds and quantities of chemical substances produced are strictly limited to those agreed on as compatible with those purposes. With respect to transferred substances, the verification system confines itself to ensuring that the substances transferred will not be the object of a further transfer for prohibited purposes.

As these provisions show, the verification machinery established is fully demarcated and governed by the principle—laid down in article

VI of the Convention—that all these activities shall be carried out in a manner that does not hamper economic and technological development or international cooperation in the field of peaceful chemical activities.

These provisions include elements of the greatest importance for the chemical industry, are reasonable and non-intrusive and, above all, do not create obstacles to the completely legitimate activities of the chemical industry.

When dealing with questions which are inevitably technically complex, it is important to remember that the central objective of the Convention is to eliminate chemical weapons; it is not to establish unnecessary controls over a sector which is regarded as an important component of national economies, is of high added value and makes, moreover, an outstanding contributionto the development and progress of Latin American societies.

A very broad statistical survey shows that there are a number of States in Latin America and the Caribbean whose chemical industries amount to 5 per cent or more of their national product. These are, moreover, growing sectors that are not completely integrated and require, therefore, large imports of raw material for further processing and synthesising.

All this emphasises the importance of the fact that the Convention makes adequate provision for these situations and explicitly supports cooperation and the broad exchange of substances and products related to the chemical industry.

The Convention presents global characteristics which will establish a norm for the coming century. Among them may be mentioned the political understanding that no requirements beyond those agreed on in the Convention shall be imposed on the States parties, unilaterally or multilaterally, in order for them to gain access to international cooperation in the peaceful uses of chemistry. The significance of this aspect of the Convention is that it grants tangible benefits to those States adhering to the Convention and imposes significant restrictions on those which do not.

It may therefore be useful to make a distinction between national measures to end the proliferation of chemical weapons, such as those now proposed by the Australia Group, and global measures agreed on multilaterally between the States parties to the Convention on chemical weapons.

In the absence of a global Convention, national measures may fill the vacuum. But in a context of this kind, it is unquestionably much more difficult and politically more complicated to investigate the possible dissemination of chemical weapons. The Convention establishes a completely different situation. Firstly, a State party must give up the option of acquiring chemical weapons. Secondly, it will have assumed the obligation of ensuring that its own institutions verify that no violations take place either at the national level or with respect to other countries. Thirdly, it will have accepted international verification on its own territory by the Organisation for the Prohibition of Chemical Weapons.

These conditions create a much more effective system for deterring and detecting clandestine violations of the Convention than current means provide, even though the present capacity for at least detecting hidden production facilities seems effective enough.

From this point of view, the entry into force of the Convention will create a framework for mutual confidence among the States parties, which will help to increase international cooperation in this field. And this will be so because the accession of a State to the Convention will be accepted as a "sufficient guarantee", thus promoting the greatest possible exchange of chemical substances, equipment and technology for peaceful purposes.

The fact that the guarantee of not producing chemical weapons will be adequately verifiable will render an attempt to impose any other condition on parties to the Convention discriminatory.

The Convention on chemical weapons is a non-discriminatory treaty, since the States parties will be on an equal footing when the process of destroying existing chemical weapons and production facilities has been completed. From that moment, the Convention will serve as a model of a type of agreement that differs from those which give legal sanction to the existence of two categories of States.

In this multilateral instrument, there is only one category of States, all with the same rights and obligations, and with verification machinery which is identical for all. The Convention will not be a conferer of global power, as the non-proliferation Treaty seems to be. Thus we have within our grasp a convention that is non-discriminatory from the political and military point of view.

I believe that we have also succeeded in making it non-discriminatory from the economic, commercial and technological points of view. That

is to say, the convention has not been conceived in a way that will enable it to be used to preserve commercial inequalities or to hamper the development or the access of the States parties to chemical technology, equipment or substances.

The negotiations have run their course and the time for political decisions is approaching. They will no doubt be the subject of careful analysis in each of the capitals of the world, including those of Latin America and the Caribbean.

Those who have been direct participants in the negotiations—and I venture to include in this judgement the Latin American colleagues who are taking part in the negotiations (Brazil, Cuba, Mexico, Peru and Venezuela) and the observer delegations (Chile, Colombia, Costa Rico and Uruguay, among others)—have sought to promote the drafting of a balanced instrument, one which, without losing sight of the central goal of eliminating chemical weapons, does not affect the normal activity of the industry and does not have negative economic or commercial effects.

I believe that that goal has been achieved.

If that is so, it may not be illusory to imagine that Latin America and the Caribbean will accede to the Convention on chemical weapons unanimously, simultaneously and in the same document.

The political significance of such a gesture could not be clearer. It would confirm that no threats to world peace and stability are to be expected from Latin America and the Caribbean, but, on the contrary, the reaffirmation of a noble tradition of compromise consistent with the security of all.

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CHEMICAL WEAPONS CONVENTION AND THE SECURITY AND DEVELOPMENT NEEDS OF BRAZIL

This article sets out to discuss the importance for Brazil of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction. It will be easier for the reader to understand the question under discussion if he can place my country in the Latin American and world contexts.

What are the security concerns of a country like Brazil, which spends less than 0.5 per cent of its GDP on defence? What are the strategic values in Latin America, a region recognised to be the least armed area in the world? How concerned is the region about defence against potential aggressors? Aren't the economic and social problems in some countries of the region more urgent than other concerns? These are just some of the questions that Brazilian military and political planners are constantly asking themselves, some of the replies to which are rather obvious.

Regardless of the parameters adopted for analysis, it is very clear that the strategic values for Latin America are significantly different from those in most areas of the world. The absence of prolonged or intense international conflicts, ethnic rivalries and religious or cultural confrontation is characteristic of the region. The tensions that were inherited from colonisation as well as those that emerged with independence—"birth pangs", one might call them—were in most cases solved in one way or the other, but often through diplomatic means, in the first century of the existence of these countries as autonomous entities.

To be sure, rivalries did persist and tended to become more acute when military Governments or personal dictatorships imposed

themselves on the will of the populations. Very seldom, however—and fortunately not in the case of Brazil in the last hundred years—did they degenerate into full-scale war. As democratic Governments emerged from the dark period of authoritarian rule in most countries in Latin America, projects of cooperation and even of real integration became the main feature of regional relations, pushing the risks of conflict even further away.

In this favourable scenario, it became our common understanding that Brazil's role in the region and in the world would not result from military superiority or extraterritorial ambitions. On the contrary, our capacity for influencing events in the world context would depend on our capacity to build and consolidate a multiracial society capable of providing equal opportunities and administering economic and social justice. This is no easy task for a country of approximately 150 million people spread over more than 8 million square kilometres, whose early social evolution was largely based on the use of slave labour. It should be, therefore, and in fact it is—in spite of our shortcomings—the focus of our energy.

Weapons of mass destruction are not on the list of Brazilian procurement needs for defence. Since the time when chemical weapons were first used, the Brazilian Government has consistently argued against the use of these and all other inhumane means of warfare. A natural consequence was Brazil's signing, on 17 June 1925, of the Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare. Bearing in mind the need to strengthen the regime of the Geneva Protocol, the Brazilian delegation supported initiatives to that effect that were proposed at the Eighteen-Nation Committee on Disarmament (ENDC) in the 1960s by the United States, the Soviet Union and the United Kingdom. It was not possible at that time to agree on the elimination of both chemical and biological weapons, but a Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction was finally concluded and opened for signature on 10 April 1972. Brazil signed the Convention on that date and ratified it on 27 February 1973. Negotiations on a chemical weapons convention would continue for another twenty years!

Brazil rejected atomic weapons as a defence option from the very beginning and joined those willing to promote nuclear disarmament and the destruction of nuclear arsenals. At the same time, it insisted

on maintaining its right to develop and use nuclear technology for peaceful purposes, on an equal footing with all countries, while accepting and strictly applying appropriate controls on nuclear materials in accordance with the safeguards system of the International Atomic Energy Agency. Brazil, did not, however, join the non-proliferation Treaty (NPT), a decision renewed by successive Brazilian Governments. One of the difficulties was that it seemed unreasonable to accept the division of the world, as enshrined in the Treaty, into possessors and non-possessors of nuclear weapons and the establishment of different rights and obligations for each category of countries. Moreover, the NPT did not commit the nuclear weapon possessors to eliminate their arsenals, nor did it prohibit them from conducting nuclear weapon tests and developing new nuclear weapon systems.

In this connection, it is very unfortunate that article VI of the NPT has never been respected. There has been no multilateral negotiation on "measures relating to cessation of the nuclear arms race... and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control". Moreover, the weak verification regime of the Treaty, already limited in scope in relation to nuclear weapon possessors, has proved to be insufficient to deter proliferation. Finally, the language of article IV of the NPT has not been capable of ensuring that developing countries would benefit from the application of nuclear energy for peaceful purposes. The Treaty has not established appropriate controls on nuclear material and technology that would prevent diversion to non-peaceful use while providing for, at the same time, the technological development of all States parties. In order to fill such gaps and to reinforce the non-proliferation regime, other types of controls have been devised over the years. The inherent imbalance of the NPT, its shortcomings and the need to correct them were in the minds of the Brazilian negotiators of the draft chemical weapons Convention.

Despite the fact that the nuclear weapon States still avoid committing themselves to a nuclear-test ban, the Brazilian Government has consistently stated that it has no plans for testing nuclear weapons on its territory. More recently, during the forty-fifth session of the United Nations General Assembly, the President of Brazil declared that no nuclear tests would be carried out, even for peaceful purposes. Explosions for peaceful purposes are provided for under article 18 of the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Treaty of Tlatelolco), which was signed and ratified by

Brazil. It was felt by the Government that there would be no justification for such tests until a clear distinction could be made between nuclear tests of weapons and tests for peaceful purposes. The same understanding was included in the Agreement for the Exclusively Peaceful Use of Nuclear Energy signed on 18 July 1991 by the Presidents of Argentina and Brazil, which states:

> "Bearing in mind that at present no technical distinction can be made between nuclear explosive devices for peaceful purposes and those for military purposes, the parties also undertake to prohibit and prevent in their respective territories, and to abstain from carrying out, promoting or authorising, directly or indirectly, or from participating in any way in, the testing, use, manufacture, production or acquisition by any means of any nuclear explosive device while the above-mentioned technical limitation exists."

In September 1991, Argentina, Brazil and Chile adopted the Mendoza Declaration, by which they confirmed a total ban on chemical weapons in their territories. Subsequently, the Declaration was adhered to by Uruguay, Paraguay, Bolivia and Ecuador. In the absence of a regime banning chemical weapons worldwide, and until the chemical weapons Convention comes into effect, commitments like the Mendoza Declaration would be a good choice for other regions of the world. Other Latin American initiatives to renounce weapons of mass destruction, such as the Cartagena Declaration, adopted by the Andean countries in 1991, are also relevant. Again, as happened in the past with respect to nuclear weapons, with the Treaty of Tlatelolco, Latin America has taken the lead in prohibiting a whole category of weapons, even before the chemical weapons Convention is opened for signature.

The above account of Brazil's stand with regard to weapons of mass destruction serves as an introduction to the presentation of my country's views with regard to the chemical weapons Convention. Article I of the Convention establishes a clear ban on chemical weapons and provides for the destruction of existing ones. The prohibition is non-discriminatory and applies to all States and to the whole category of chemical weapons. This is exactly what my Government has been requesting in the field of disarmament with respect to all weapons of mass destruction.

In the final stage of the negotiations on the chemical weapons Convention, it was argued that herbicides and riot control agents should be included in article I as chemicals the use of which would constitute a method of warfare. In our view, such chemicals did not fall into

what was becoming the "traditional" definition of chemical weapons and, besides, the application of verification to the substances involved would have been extremely difficult, if not impossible. Nevertheless, we were finally convinced that the prohibition of those agents was appropriate, due to their "inhumane" effects.

Negotiations sometimes follow mysterious paths, and their results frequently seem illogical. This is precisely the case in this particular instance, where the prohibition on use of riot control agents was accepted in article I, while the prohibition regarding herbicides was only recognised in the preamble of the draft Convention, on the understanding that it would be reinforced on the occasion of the Second Review Conference of the parties to the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques. (The ENMOD Review Conference was held in Geneva from 14 to 18 September, after the conclusion of the 1992 session of the Conference on Disarmament.)

Most important among the provisions of the Convention are the basic undertakings contained in article I and the provisions related to verification, to the activities not prohibited under the Convention, to challenge inspections and to economic and technological development. Since Brazil does not possess chemical weapons, many details contained in the Convention and its annexes will not have a direct bearing on my country. In fact, I would personally have preferred a simple text, clearly establishing the general obligations and setting out verification regulations, including challenge inspections, capable of providing a deterrent sufficient to guarantee compliance with the Convention. As it turned out, the present text is rather complex. It is the result of many years of negotiations, in the course of which a good number of new delegates joined in the endeavour and old ones departed from Geneva, some of whom wished to leave their personal imprint on the text. The draft was also very much influenced by the need to make it correspond to the excessively detailed provisions of the bilateral agreement on chemical weapons that the United States of America and the Russian Federation concluded.

Brazil's interest in the regulations pertaining to the activities not prohibited under the Convention is easy to understand. Even at this time of economic recession, the Brazilian chemical industry continues to be important, with production estimated at approximately $US 8 billion. Statistics vary, but Brazil lies in the range of 11th to 13th in the list of countries having the largest chemical industries. It is evident,

therefore, that the regulations referred to above are important both for the Government and for Brazilian industry. In the first place, it is in the interest of the Government that the chemical companies comply with the Convention that Brazil is adhering to. This can only be accomplished by means of clear provisions that will not allow for any ambiguity at the time they are implemented. Industry, for its part, is interested in knowing exactly what the limits are on its capacity to act as an economic agent, in terms of production and trade.

The rules pertaining to verification are therefore crucial in this regard. It was unfortunate that the negotiation and drafting of the verification regime of the Convention were not preceded by a general understanding of what characteristics and scope would be desirable in such a regime. Precious time was lost in long discussions in which two groups of delegations took opposite positions: on the one side, there was a preference for a regime capable of offering a close to one-hundred per cent guarantee that the Convention would be complied with; and, on the other, the prevailing idea was to establish cost effective verification, sufficient to provide reasonable assurance that would-be violators could be detected in a timely manner.

Not all delegations participating in this discussion had either experience in verification or a clear idea of how costly such a regime could be. Quite often, delegations advocating a non-complicated and less expensive regime were mistakenly considered to be working against verification. In this respect, recent events, namely the war in the Persian Gulf, may have somewhat clouded the picture. If, on the one hand, they were a powerful incentive to accelerate negotiations towards establishing what could be called a "zero option" in the Convention, they also prompted the search for a foolproof verification regime—something that may remain illusory. Important as verification systems may be—and we certainly agree they are—they will never be a perfect substitute for political understanding that alone can dispel the dangers of conflict.

Verification of the chemical industry, according to the Convention, is certainly as intrusive as it should be. It did not end up as strict as some would have preferred, but it still seems to be quite complex and capable of reaching all facilities relevant to the objectives of the Convention. Experience will tell whether or not changes will have to be incorporated to ensure its smooth operation and easier acceptance by the chemical industry. No one doubts that the success of the Convention and its verification regime will depend on the goodwill of

the companies which may be subject to inspections. Reliance on the cooperation of those companies, especially during the first years following the establishment of the Organisation for the Prohibition of Chemical Weapons (OPCW) and until the Organisation can acquire the credibility it will have to enjoy in order to help Governments implement the Convention, will be of fundamental importance.

In this connection, I recall a statement by Ambassador Marcos Azambuja of Brazil, who was then Secretary-General of the Ministry of External Relations (and who had been a distinguished negotiator in the Conference on Disarmament), at the seminar held in The Hague, in May 1992, on the future OPCW:

> "If I have to sum up in one word the most important characteristic our OPCW has to present from the start, I will single out *credibility.* Credibility can be assured through an equitable geographical distribution, a fair and efficient system of verification, a reasonable cost-benefit ratio and good management."

The Convention provides the necessary tools for the OPCW to make a good start and to build upon its reputation. One of these will be the Technical Secretariat and its Inspectorate. It is my sincere hope that the States parties will be able to provide the Secretariat with qualified personnel. Another important tool is the Executive Council, which will exercise a political role with regard to the daily activities of the Organisation and supervise the activities of the Technical Secretariat. In my view, the composition of the Executive Council, as envisaged in the Convention, provides an adequate framework for the fulfilment of its functions.

The negotiators of the Convention succeeded in building a system which will make the participation of the relevant States parties in the Executive Council possible. In this sense, the participation of chemical-weapon possessors in that political body will give the international community the opportunity to put continuous pressure on the respective Governments to destroy weapons and weapons production facilities as soon as possible. The Convention does not determine, of course, the automatic participation of chemical-weapon States in the Executive Council, but there is a strong possibility that actual or potential possessors will have a seat on it.

The criterion of the importance of a party's chemical industry as an element in a State's qualifying for membership on the Council is well founded, considering that the countries having stronger chemical industries will have a larger share in the responsibility of ensuring

compliance with the Convention, in controlling exports and in promoting acceptance of the verification regime. Furthermore, those will be the countries in which, in practice, OPCW inspections will be carried out relatively often, thus making them more liable to be parties to disputes relating to the implementation of the Convention. Such disputes will be avoided or resolved more easily if the States concerned are present in the Executive Council.

The challenge inspection mechanism created by the chemical weapons Convention is a most welcome innovation in disarmament agreements. Since the beginning, Brazilian negotiators have held that a simple mechanism, which could be easily triggered and automatically implemented would suffice. At the same time we considered a much less "solemn" type of mechanism, which would be activated less by suspicion than by a desire to randomly assess the operation of the verification regime and the good faith of Governments.

In our view, such an automatic challenge inspection would make the whole verification regime much less costly and could be an efficient deterrent against non-compliance with the Convention. Suspicion, however, seems to have prevailed as the triggering device of challenge inspection. Such a device may not be capable of reducing the burdensome verification procedures of the Convention. The suspicion-operated trigger will not allow for the desired automaticity. In fact, it will make the whole mechanism more burdensome, for it will be necessary to add to the process of request/implementation the participation of the Executive Council, a purely political body.

In spite of these shortcomings, the challenge inspection mechanism is now a reality. For the first time the possibility is open that any place in the territory of a State party to the Convention can be challenged so that any doubt regarding non-compliance with the Convention can be investigated. This totally new situation in the field of disarmament is surely welcome. The precedent established by the challenge inspection mechanism can be extended to other verification regimes—a development that would certainly improve the quality of other disarmament agreements.

Article XI of the Convention, entitled "Economic and technological development," is probably the article that attracted the greatest interest on the part of the Brazilian authorities. This article regulates trade relations and transfer of technology among States parties to the Convention. For much of the period of the negotiations, the Brazilian delegates were strong supporters of this aspect whenever article XI

was discussed. It was, therefore, with pride and pleasure that my delegation accepted the task of coordinating the work related to article XI in the final stages of the negotiation in the *ad hoc* Committee on Chemical Weapons.

The reason for Brazil's interest in this matter is clear. Being a "threshold country" in terms of technological and industrial development, it can develop locally, with indigenous expertise and resources, techniques and equipment in some quite advanced areas. Transfers from abroad are, however, essential in certain high-technology sectors, which could conceivably be considered as favouring non-peaceful use. A considerable effort has been expended over a number of years in contacts and negotiations between companies and governmental personnel of Brazil and other countries in order to explain the exclusively peaceful aims of Brazilian high-technology developments. As with other countries in a similar stage of development, a whole set of misunderstandings and misconceptions had accumulated over time in Brazil's relations with some of its important partners in areas of advanced technology. As discussions progressed, it became clear, for instance, that the preconceived view that Brazil was "a country of nuclear proliferation concern" was intrinsically groundless. On the other hand, on the Brazilian side, we became more accustomed to discussing high-technology-related issues without prejudging the intentions of our partners and without believing that new controls that might hamper our overall economic development would be imposed on us simply by virtue of the fact that contacts and discussions were taking place.

Difficulties were gradually but steadily overcome in many fields such as nuclear energy, to the satisfaction of Government and private sectors. Confidence-building was therefore no longer automatically equated—hopefully in the minds of both sides—with the creation of obstacles to technological progress.

Past experience showed the desirability of seizing the opportunity of the negotiations on chemical weapons to promote a global solution for the question of transfers of material and technology of dual use in this field. In doing so we kept the following points in mind:

(a) Rules multilaterally agreed upon would be more appropriate than control regimes adopted unilaterally or by restricted groups;

(b) The operation of the Convention would provide the necessary assurances that chemical materials and technology would be used for only peaceful purposes;

(c) States would act in good faith when they became parties to the Convention;

(d) Nothing could compel Governments or companies to sell materials or technology to others if they considered that such a sale would run counter to their security interests;

(e) The existing control regimes would gradually disappear, as confidence in the Convention and the credibility of the OPCW increased.

These understandings made it possible for us to accept the text of article XI as finally agreed, even though it would have been more to our liking to provide for the automatic disappearance, as far as States parties are concerned, of the existing restrictions and controls in the chemical field as soon as the Convention enters into force. Our main concern is to avoid hampering trade and the technological development of the parties, and this can be safely achieved through the implementation of a credible multilateral regime.

For quite a long time no negotiations were held with regard to norms applicable to trade relations between parties and non-parties to the Convention. At the same time, discussions were intensified with the aim of incorporating a reliable verification regime into the Convention. For the States parties, verification was becoming wider and wider in scope and, at the same time, more and more intrusive. It was then realised that some Governments might choose to stay outside the Convention because it would contain no provision that would represent a real incentive for them to join and, if they did not join, no verification provisions would apply to them. Under the coordination of Brazil and building upon a proposal made in 1991 by the delegation of the United States, a text was prepared to which the Committee finally agreed.

This formula provided, for the first time, for the multilateral establishment of a trade control regime. I would summarise it in the following words: chemicals of direct use in weapons can only be transferred to and from States parties, and only in small quantities, for research purposes; chemicals which represent a risk of being easily turned into weapons shall only be transferred among parties; during a three-year period prior to the Convention's entry into force, end-use certificates will be required by a State party from a recipient State not party to the Convention; and finally, the chemicals that are more commonly traded and do not pose a serious risk can be transferred to

States not party to the Convention, provided they issue an end-use certificate. The conference of the States parties to the Convention is to review the relevant provisions after five years of operation. In my view, the *ad hoc* Committee found an elegant solution to a complex issue that accommodates in a reasonable way legitimate security concerns as well as trade and technology concerns. In view of the constraints that States that are not parties are likely to face, such a solution will certainly serve as an incentive for universal adherence to the Convention.

Brazil is part of a comprehensive regime of non-proliferation of weapons of mass destruction. On the basis of a number of commitments, all nuclear, biological and chemical weapons are outlawed. The international commitments entered into by Brazil are equally binding on all the foreign partners accepting the same obligation. There is no agreement in the field of disarmament accepted by Brazil that establishes different rights and obligations among its parties. This is one of the most important aspects of the chemical weapons Convention. It is our wish that the convention will become a model for present and future agreements banning weapons of mass destruction. I can think of no other period in which there was such a strong trend in favour of the elimination of all weapons of mass destruction.

Let us seize this opportunity and dispassionately work for a commitment on the part of all countries towards that goal, to be reached with the help of a strong verification regime like the one incorporated into the chemical weapons Convention. It is certainly true that a totally new international environment created the conditions for the early conclusion of the chemical weapons Convention. Many of its provisions reflect a situation totally different from that which prevailed a few years ago. In this sense, the Convention is in harmony with the new international order we are trying to build—an order that will, hopefully, be based on transparency and mutual confidence and will not rouse the resentment that inevitably arises in relation to unbalanced agreements. The chemical weapons Convention is thus not so much the *result* of the new era as an important *precedent,* a building block that will have its own place and exert its own influence on the construction of disarmament.

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THE CHEMICAL WEAPONS CONVENTION: AN ASSESMENT OF FUTURE IMPLICATIONS

The successful conclusion of the chemical weapons Convention by the Conference on Disarmament on 3 September 1992 represents a milestone in disarmament negotiations. It is one of the most significant steps towards the total elimination of weapons of mass destruction. There had been high expectations since last year's United Nations General Assembly resolution, which strongly urged the Conference on Disarmament, as a matter of the highest priority, to resolve all outstanding issues so as to achieve a final agreement during the 1992 session.

The sheer existence of chemical weapons provides an irresistible incentive for their use which can have grave and irreversible effects for mankind. Hence the Convention, whose objective is a universal, non-discriminatory and comprehensive regime, prohibits the development, production, acquisition, stockpiling, retention, transfer and use of chemical weapons. Apart from requiring the destruction of all existing stocks within ten years, it is the first multilateral disarmament agreement with verification provisions beyond any previous disarmament instruments.

Although the Geneva Protocol of 1925 reaffirmed the prohibition of the use of chemical weapons, its limited scope and inadequacies in confidence-building and verification provided a false sense of security. Besides, 40 States parties expressed reservations when ratifying the Protocol and some major nations only ratified it after 1970.

Confidence and verification are essential in any disarmament instrument. Indeed in the chemical weapons Convention, these two important elements assume an even greater dimension in ensuring the destruction of existing stockpiles and the prohibition, production and

development of new ones. The General Assembly's adoption of the resolution—sponsored by 145 Member States—without a vote on 30 November is a clear indication of the broad support for the Convention.

The resolution calls on all States to sign and become parties to the convention at the earliest possible date. It urges all States to ensure the effective implementation of the "unprecedented global, comprehensive and verifiable multilateral disarmament agreement, thereby enhancing cooperative multilateralism as a basis for international peace and security". There are still some States which express reservations, but, with time, it is hoped that effective efforts can be made to bring them on board.

The Arab Group had, in the light of the sensitive nature of circumstances prevailing in the Middle East region, felt that the chemical weapons Convention could not be dealt with in isolation from efforts related to other weapons of mass destruction—mainly the Treaty on the Non-Proliferation of Nuclear Weapons and the international system of safeguards and inspection and the provision of credible international guarantees. It is noteworthy that they consider the Convention to be a milestone on the road of the collective efforts of the international community to achieve general and complete disarmament, particularly in the field of weapons of mass destruction.

The signing ceremony scheduled in Paris barely six weeks after the adoption of the General Assembly resolution, however, demonstrates the determination of the international community to further the early realisation of the objectives of the Convention.

While recognising that the Convention is not entirely perfect, it is none the less a compromise reached after long and intensive negotiations in the Conference on Disarmament. It is pertinent to note that the "Question of chemical and biological weapons" was for the first time put on the agenda of the United Nations General Assembly in 1969. The final phase of the negotiations in the *ad hoc* Committee under the able chairmanship of Ambassador von Wagner of Germany were very delicately balanced, embodying concessions that delegations had to make in spite of their preferred positions. The result-oriented approach by the Chairman is highly commendable. It is now widely recognised that, with sufficient transparency and goodwill among States parties, the Convention should be implemented without any ambiguities, and in a manner which does not impede the legitimate activities of chemical industries, especially in the developing countries.

Despite demands from the Group of 21 and the developing countries within the Conference on Disarmament for an article on economic and technological development, detailed discussion on proposals did not start until 1987. Concerns were voiced by some delegations, notably from the developing countries, about a lack of adequate and clear provisions in the Convention concerning technological and scientific cooperation and the removal of discriminatory restrictions on chemical trade. Obviously, there are concerns that existing export control mechanisms such as those of the Australia Group should be dismantled once the Convention comes into force. The members of the Australia Group have already undertaken to review, in the light of the implementation of the Convention, the measures that they are now using to prevent the spread of chemical substances and equipment for purposes contrary to the objectives of the Convention. The aim would be to remove such restrictions for States parties to the Convention that are acting in full compliance with their obligations.

It is envisaged that the convention will not prohibit the production, use and transfer of toxic chemicals and their precursors for industrial, agricultural, research, medical or other peaceful purposes, domestic law enforcement, military purposes not connected with the use of chemical weapons and purposes directly related to protection against chemical warfare.

Indeed, on matters of definitions and criteria, the unambiguous and all-embracing definition of toxic chemicals was examined very seriously. Key components of binary or multi-component chemical systems as well as precursors were also clearly defined. The terms "old and abandoned chemical weapons" were elaborated to include in their definitions those chemical weapons which were produced between the first and second world wars. The definition of "riot control agent" was largely resolved, although this had been unachievable as recently as 18 May 1992. Thus, "riot control agent" in the chemical weapons Convention is now defined as any chemical not listed in a schedule, which can rapidly produce in human beings sensory irritation or disabling effects which disappear within a short time following exposure.

The purposes not prohibited under the chemical weapons Convention are defined as follows:

(i) Industrial, agricultural, research, medical, pharmaceutical or other peaceful purposes;

(ii) Protective purposes, namely, those purposes directly related to protection against toxic chemicals and to protection against chemical weapons;

(iii) Military purposes not connected with the use of chemical weapons and not dependent upon the toxic properties of chemicals as a method of warfare; and

(iv) Law enforcement including domestic riot control purposes.

With regard to article III concerning the declarations of States parties on their CW holdings and facilities, the main outstanding issues as negotiations ended related to the problem of the declaration of the old and abandoned chemical weapons that will need to be declared, including plans for the destruction of such weapons. With the resolution of the question of who takes responsibility for destruction in cases where chemical weapons were abandoned on the territory of another State party, it was possible to reach a conclusion. The responsibility of parties for declaring whether old chemical weapons are on their own territory or whether the party has abandoned chemical weapons on the territory of other States is now clearly reflected in the Convention.

Questions concerning the declaration of riot control agents were also resolved. Declarations for this category are to include the chemical name, structural formula and Chemical Abstract Service registry number, if assigned, for each such agent. The declaration must be updated 30 days after any change becomes effective. It is to be noted that riot control agents are only to be declared and not to be verified.

The cost of destruction of chemical weapons production facilities is ten times the cost of building such chemical weapons facilities. Since each State party takes responsibility for such destruction, the financial implication of the destruction of chemical weapons production facilities has created problems for some States. The temporary conversion of such facilities, wherever possible and cost effective, into destruction facilities was also considered. It is now possible to declare such chemical weapons production facilities as having been converted.

The verification provisions to be specified constituted a major obstacle to overcome in negotiating the chemical weapons Convention. Naturally, adequate verification is defined differently by individual States. The long delay was due to finding a delicate balance between the need for credible verification and safeguarding national interests. There was also the need to provide a balance between the rights and obligations of all States parties. This proved a formidable technical challenge, as the provisions cover not only military stockpiles, but also normal industrial plants that could produce poison gas or other chemical agents.

The verification regime requires extensive declarations, within 30 days of the Convention's entry into force, by a State party concerning

possession and production facilities, and it oversees the destruction of those that are declared. Similarly, a State party must ensure that the facilities producing chemicals for permitted purposes do not exceed their allowed limit. For industrial plants, only facilities producing more than a certain specified amount of particular chemicals need to be declared. It is noteworthy that various risk levels are defined for each agent and different levels of verification are applied to each category.

The verification measures are mostly of a routine character. The inspection teams are supposed to choose the areas and specified items to be inspected in accordance with the articles and annexes. As a general guideline, the inspection teams are to be granted unimpeded access rights.

Although difficulties were encountered in all aspects of verification by the negotiators, the question of challenge inspection generated the greatest amount of controversy. This procedure calls for carrying out inspections of activities on the territory of a party in response to an allegation by another party that the activities may be inconsistent with the provisions of the Convention. The intrusiveness of the verification in some respects places an unnecessary burden on the legitimate needs of States to protect sensitive installations in the civilian chemical industry not related to chemical weapons.

However under the managed access procedures, a State has the right to take measures to protect any sensitive activities at the site not related to chemical warfare. The Conventiondoes not specify how decisions will be made on whether or not a particular State has violated the agreement. In addressing any concerns about non-compliance, the Executive Council is expected to request a participating State to take measures to redress such a situation within a specified time. The powers of the Executive Council to play a role in preventing misuse and abuse are less than adequate.

The signing ceremony in Paris in January 1993 will represent an ambitious global commitment to get rid of the horror or chemical warfare. The Convention includes a variety of incentives to encourage States to sign and ratify it. States that join the treaty will receive clear benefits beyond simply contributing to the global elimination of chemical weapons. In the area of trade, the Convention imposes varying degrees of restraint on chemical shipments to States that are not parties. Another incentive is the provision for assistance to States attacked or threatened with chemical weapons, including providing defensive equipment.

The next task is to ensure adequate and effective arrangements for the entry into force of the Convention. The Convention provides for the establishment of an Organisation for the Prohibition of Chemical Weapons (OPCW). The task of preparing the work of this Organisation is entrusted to the Preparatory Commission, to be set up in The Hague by the signatory States. Apart from the election of the Chairman, the Commission is also to establish the Provisional Technical Secretariat and appoint an Executive Secretary, pending the the election of a Director-General.

The period between the first and second sessions of the Preparatory Commission will be critical to the successful operation of the body and its subsidiary organs. The immediate priority for the Commission will be a small number of initial and essential institution-building tasks, requiring decisions by the signatories to the Convention within three months. These tasks concern the budget, rules of procedure, a programme of work, an agreement on privileges and immunities with the host Government and the permanent facilities that will be required.

In addressing these urgent tasks, the Preparatory Commission is expected to ensure that decisions on the election of both the Chairman and Executive Secretary are reached by consensus. The Provisional Technical Secretariat should have personnel of professional competence and at the same time reflect the geographical and universal nature of the Organisation. Hence, there is a need to establish, from the very beginning of the Preparatory Commission's activities, special training programmes for future inspectors.

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EXPORT WARNING LIST*

Below is the chemical weapons precursor export warning list, as current on 1 September 1989, used by the Australia Group of countries: Australia, Belgium, Canada, Denmark, France, Germany (Federal Republic), Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Switzerland, the United Kingdom and the United States, plus the European Community (represented as such, in addition to its member states). The list is circulated by Australia Group governments to their industry with the advice that caution should be exercised in relation to the export of these chemicals, because of their potential dual-purpose use.

The first nine substances on the list currently form the 'core list', for which all Australia Group countries have introduced or are introducing export controls. The controls require that a permit be obtained before exporting a 'core list' chemical. The 'core list' has been gradually expanded. Many Australia Group countries have also introduced controls for other chemicals on the export warning list.

It should be emphasised that export controls simply place certain conditions on exports. They are not export bans. [The CAS number is the US Chemical Abstracts Service registry number.]

		CAS no.
1.	Thiodiglycol	(111-48-8)
2.	Phosphorus Oxychloride	(10025-87-3)
3.	Dimethyl Methyl Phosphonate	(756-79-6)
4.	Methyl Phosphonyl Difluoride	(676-99-3)

* As quoted from *Trade Union Report on Chemical Weapons*, first published in Sep. 1989 by the International Confederation of Free Trade Unions (1CFTU) and the International Federation of Chemical, Energy and General Workers' Unions (ICEF).

5.	Methyl Phosphonyl Dichloride	(676-97-1)
6.	Dimethyl Phosphite	(868-85-9)
7.	Phosphorus Trichloride	(7719-12-2)
8.	Trimethyl Phosphite	(121-45-9)
9.	Thionyl Chloride	(7719-09-7)
10.	3-Hydroxy-l-Methylpiperidine	(3554-74-3)
11.	n,n-Diisopropyl-2-Aminoethyl Chloride	(96-79-7)
12.	n,n-Diisopropyl-2-AminoethaneThiol	(5842-07-9)
13.	3-Quinuclidinol	(1619-34-7)
14.	Potassium Fluoride	(7789-23-3)
15.	2-Chloroeihanol	(107-07-3)
16.	Dimelhylamine	(124-40-3)
17.	Diethyl Ethylphosphonate	(78-38-6)
18.	Diethyl-n,n-Dimethylphosphoramidate	(2404-03-7)
19.	Diethyl Phosphite	(762-04-9)
20.	Dimethylamine Hydrochloride	(506-59-2)
21.	Ethyl Phosphinyl Dichloride	(1498-40-4)
22.	Ethyl Phosphonyl Dichloride	(1066-50-8)
23.	Ethyl Phosphonyl Difluoride	(753-98-0)
24.	Hydrogen Fluoride	(7664-39-3)
25.	Methyl Benzilate	(76-89-1)
26.	Methyl Phosphinyl Dichloride	(676-83-5)
27.	n,n-Diisopropyl-2-Amino Ethanol	(986-80-0)
28.	Pinacolyl Alcohol	(464-07-3)
29.	QL (O-Ethyl-2-Diisopropylaminoethyl Methylphosphonite)	(57856-11-8)
30.	Triethyl Phosphite	(122-52-1)
31.	Arsenic Trichloride	(7784-34-1)
32.	Benzilic Acid (2,2-Diphenyl-2-Hydroxyacetic Acid) (2,2-Diphenyl-glycollic Acid)	(76-93-7)
33.	Diethyl Methylphosphonite	(15715-41-0)
34.	Dimethyl Ethylphosphonate	(6163-75-3)
35.	Ethyl Phosphinyl Difluoride (Ethyl Phosphorous Difluoride)	(430-78-4)
36.	Methyl Phosphinyl Difluoride (Methyl Phosphorous Difluoride)	(753-59-3)

37.	3-Quinuclidone	(1619-34-7)
38.	Phosphorous Pentachloride	(10026-13-8)
39.	Pinacolone (3,3-Dimethyl-2-Butanone)	(75-97-8)
40.	Potassium Cyanide	(151-50-8)
41.	Ammonium Hydrogen Fluoride (Ammonium Bifluoride)	(1341-49-7)
42.	Potassium Hydrogen Fluoride (Potassium Bifluoride)	(7789-29-9)
43.	Sodium Bifluoride (Sodium Hydrogen Fluoride)	(1333-83-1)
44.	Sodium Fluoride	(7722-88-5)
45.	Sodium Cyanide	(143-33-9)
46.	Tris-ethanolamine	(102-71-6)
47.	Phosphorous Pentasulphide	(1314-80-3)
48.	Di-isopropylamine	(108-18-9)
49.	Diethylaminocthanol	(100-37-8)
50.	Sodium Sulphide	(1313-82-2)

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STATEMENTS OF POSSESSION OR NON-POSSESSION OF CHEMICAL WEAPONS

THOMAS STOCK

State	*Source/date of declaration*	*Wording of the statements*
Afghanistan	Paris Conference 1989[a]	'The Republic of Afghanistan while *[sic]* once again proclaims its adherence to its past commitments and obligations with regard to the non-use and banning of chemical weapons, declares that it shall never use, develop, acquire or stockpile chemical or biological weapons'
Albania	Paris Conference 1989[a]	'Non seulement elle a ete et elle est toujours pour la prohibition de 1'emploi des armes chimiques, contre la production et le stockage de ces armes'
Argentina	CD/PV.465, 1988[b]	'many countries, among them Argentine Republic, have declared that they do not possess chemical weapons'
Australia	CD/PV.426, 1987[b]	'several countries, including Australia, have indicated that they do not possess such weapons or facilities'
Austria	CD/PV.471, 1988[b]	'Austria does not possess or produce chemical weapons, and has no facilities to produce such weapons'
Bahrain	Paris Conference 1989[a]	'Bahrain does not possess nor intends to possess chemical weapons'
Belgium	CD/PV.424. 1987[b]	'Belgium has no chemical military capability and has no intention of acquiring such a capability'Brazil
Brazil	CD/PV.460. 1988[b]	'Brazil does not possess chemical weapons and does not intend to develop, produce or stockpile any'

Bulgaria	CD/PV.409. 1987[b]	'May I recall that my country is not developing chemical weapons, does not manufacture such weapons and has none stationed on its territory'
Burma (Myanmar)	CD/PV.452, 1988[b]	'Burma does not possess, develop, produce, stockpile or use chemical weapons'
Canada	CD/PV.433. 1987[b]	'Canada does not possess any chemical weapons and does not intend to produce or acquire such weapons'
Chile	Paris Conference 1989[a]	'le Chili ne developpe pas, ne fabrique pas d'armes chimiques'
China	CD/PV.453, 1988[b]	'China, a non-chemical-weapon State'
	Paris Conference 1989[a]	'China neither possesses nor produces chemical weapons'
Cook Islands	Paris Conference 1989[a]	'countries in the insular South Pacific region harbour no chemical weapons to date'
Colombia	Paris Conference 1989[a]	'La Colombie joint sa voix a celle des autres Etats qui ne possedent pas de technologic apte a produire des armes de destruction massive'
Cyprus	Paris Conference 1989[a]	'We have no chemical weapons; we condemn their use by any state under any circumstances'
Czechoslovakia	Statement of the Government of the Czechoslovak Socialist Republic[c]	The Czechoslovak Socialist Republic does not either possess or manufacture or stockpile on its territory any chemical weapons. No facilities destined for development or manufacture of chemical weapons exist in the Czechoslovak Socialist Republic. Research and laboratory work conducted in the Czechoslovak Socialist Republic serve exclusively purposes of protection against effects of chemical weapons and peaceful objectives.'
Democratic People's Republic of Korea	Statement of the Ministry 26 January 1989[d]	'the government of the Republic, in the future, too, as in of Foreign Affairs, past, will not test, produce, store and introduce from the outside nuclear and chemical weapons and will never permit the passage... through our country'
Denmark	A/C.1/43/PV.16[c]	'We do not have any chemical weapons. We do not want any'
Egypt	CD/PV.459,1988[b]	'Egypt does not produce, develop or stockpile such weapons'

Ethopia	CD/PV.487,1989[b]	'my country does not produce or stockpile chemical weapons'
Finland	CD/PV.441,1988[b]	'does not possess chemical weapons and will never acquire such weapons'
France	A/43/PV.10[f]	'The proposals put forward by France, who has no chemical weapons'
German Democratic Republic	CD/PV.481,1988[b]	'does not possess or produce any chemical weapons'
Federak Republic of Germany	CD/PV.437.1988[b]	'The Federal Republic of Germany does not possess any chemical weapons and gave a solemn pledge in 1954 not to produce them'
Greece	Paris Conference 1989[a]	'Mon pays qui ne dispose pas d'armes chimiques'
Grenada	Paris Conference 1989[a]	'We do not manufacture any weapons, chemicals or otherwise'
Guinea-Bissau	Paris Conference 1989[a]	'La Guinee-Bissau n'a pas la mo indie intention d'acquerir des armes chimiques'
Hungary	CD/PV.437.1988[b]	'has no stockpile of chemical weapons or industrial establishments manufacturing such weapons'
Iceland	Paris Conference 1989[a]	'Ireland has no chemical weapons and prohibits the storing or stationing of such weapons on its territory'
India	CD/PV.459,1988[b]	'India does not possess any chemical weapons, nor does it have any intention of producing or acquiring them in the future'
Indnesia	CD/PV.437,1988[b]	'Indonesia, as a country which has never possessed chemical weapons'
Ireland	Paris Conference 1989[a]	'Ireland does not possess chemical weapons. Nor is Ireland a producer of chemicals generally regarded as central to acquiring a chemical weapons capability'
Italy	CD/PV.437,1988[b]	'For many years, Italy has had no chemical weapons, nor does it station them on its territory'
Japan	CD/PV.424.1987[b]	'Japan possesses no chemical weapons and has no intention to acquire them'
Kenya	Paris Conference 1989[a]	'Kenya has no capacity to manufacture chemical weapons. Kenya does not desire to acquire such capacity and Kenya will neither purchase nor use chemical weapons on human or on any living thing'
Kuwait	Paris Conference 1989[a]	'Kuwait which does not have any chemical weapons'

Lao People's Democratic Republic	Paris Conference 1989[a]	'Pour sa part, la RPD Lao, qui n'a ni les moyens de fabriquer des armes chimiques, ni l'intention de les uliliser centre qui que ce soit'
Madagascar	Paris Conference 1989[a]	'Elle n'a jamais fabrique, acquis, ni utilise des armes chimiques'
Malaysia	Canberra Conference 1989[g]	'We do not possess or intend to acquire, develop or produce chemical weapons'
Malta	Paris Conference 1989[a]	'Malta does not produce or possess chemical weapons'
Mexico	Paris Conference 1989[a]	'Mi pais no posee armas quimicas; jamis las ha poseido y no tiene la menor intencion de adquirirlas'
Mongolia	CD/PV.442,1988[b]	'Mongolia has no chemical weapons and does not intend to develop, produce or acquire any'
Morocco	CD/PV367,1986[b]	'The Kingdom of Morocco does not possess chemical weapons and will never seek to acquire them'
Netherlands	CD/PV.446,1988[b]	'we suggest that ill countries who do not have chemical weapons within their territories, and my country is one of mem, will just make a statement to that effect'
New Zealand	CD/PV.445.1988[b]	'does not have, and never had, chemical weapons, and it does not permit chemical weapons to be stationed on its territory'
Nicaragua	Paris Conference 1989[g]	'Nicaragua, que jamas ha poseido ni producido armas de esta natmleza, ni aspira hacerlo, desea reiterrar su fume compropiso, sin reservas con las prohibiciones contenidas en El protocolo de 1925'
Nigeria	Canberra Conference 1989	'Nigeria has no chemical weapons, and does not intend to produce such ominous weapons'
Norway	CD/PV.479,1988[b]	'Norway, which has no chemical weapons'
Pakistan	CD/PV339.1986[b]	'Pakistan neither possesses chemical weapons nor desires to acquire them'
Panama	Paris Conference 1989[a]	'Panama... quien no fabrica ni posee armas quimicas'
Papua New	Paris Conference 1989[a] Conference 1989[g]	'Papua New Guinea has no chemical weapons and... we undertake not to allow transit of chemical weapons through our territory'
Peru	CD/PV.472,1988[b]	'my country does not possess or produce chemical weapons'

Poland	CD/PV.419.1987[b]	'Poland, being a country which does not produce, possess or intend to acquire chemical weapons'
Republic of Korea	Paris Conference 1989[a]	'the Republic of Korea has never possessed and does not have at its disposal any type of chemical weapons. Nor will we consider developing, producing or stockpiling such weapons on the Korean Peninsula'
Romania	CD/PV.440.1988[b]	'that Romania has no chemical weapons and that there are no stocks of such weapons on its territory'
Senegal	Paris Conference 1989[a]	'Pour sa part, le Senegal a reaffirme ... qu'il ne possede pas d'armes chimiques. n'entend pas en disposer, ni a en accueillir sur an territoire'
South Africa	Paris Conference 1989[a]	'The South African Government wishes to go on record clearly, as being firmly opposed to the production, stockpiling and use of chemical weapons anywhere on earth or in space'
Spain	CD/PV.422,1987[b]	'Spain... does not possess such weapons today and does not wish to possess them'
Sweden	CD/PV.481,1988[b]	'Sweden does ant possess chemical weapons'
Switzerland	CD/PV.270,1984[b]	'Switzerland has not acquired chemical weapons abroad. Thus it does not possess any stockpiles of such weapons'
Tanzania	Paris Conference 1989[a]	'Tanzania... does not possess or intend to produce chemical weapons under any circumstances'
Thailand	Paris Conference 1989[a]	'Thailand also reaffirms its strong opposition to the production, development, stockpiling and particularly the use of chemical weapons in any circumstances and for whatever reason'
Togo	Paris Conference 1989[a]	'Mon pays, le Togo, s'est deja declare non-possesseur d'armes chimiques, El non desireux de s'engager dans unen programme de mise au point, de fabriquation et de stockage de telles armes'
Turkey	Paris Conference 1989[a]	'Turkey does not have chemical weapons in stock nor does it aspire to possess any in future'
Uganda	Paris Conference 1989[a]	'Uganda does not produce nor possess chemical weapons'
UK	CD/PV.421,1987[b]	'The United Kingdom gave up its chemical weapons capability in the 1950s'

	CD/PV.474,1988[b]	'the United Kingdom does not possess chemical weapons either within its own territory or within the territory of any other State. There are no chemical weapons possessed by any other State within the territory of the United Kingdom'
USA	Report of the US Chemical Warfare Review	'For many yean, until 1969, the United States produced and stockpiled chemical munitions as a deterrent to a possible chemical attack by an adversary'
USSR	Paris Conference 1989[a]	'while possessing chemical weapons has never, even in our most tragic times, used those weapons ... is not producing chemical weapons'
Venezuela	Paris Conference 1989[a]	'Venuzuela desea declarar categoricamente que no posee armas quimicas ni por cuenta propia, ni por cuenta de terceros. y que no tiene intention de adquirirlas'
Vietnam	Paris Conference 1989[a]	'Le Vietnam ne produit ni ne stocke aucune arme chimique'
Yugoslavia	Canberra Conference 1989[g]	'Yugoslav chemical industry does not produce chemicals listed in Schedule 1 and II
Zimbabwe	Canberra Conference 1989[g]	'Zimbabwe does not possess chemical weapons nor does it manufacture them'

a. The Paris Conference citations are the statements made by a country's representatives at the Conference on the Prohibition of Chemical Weapons in Paris on 7-11 Jan. 1989.
   The official records of the conference have not yet been published. The statements quoted here are from the 'Compilation of declarations of States concerning the possession/non-possession of chemical weapons' which was prepared and distributed in Apr. by the GDR's Delegation to the CD. This document has also been referred to in *Chemical Weapons Convention Bulletin,* no. 5 (Aug. 1989).
b. Conference on Disarmament document.
c. 'Statement of the Government of the Czechoslovak Socialist Republic on issues concerning prohibition and elimination of chemical weapons', made in Prague on 5 Jan. 1989. Reported in Conference on Disarmament document CD/878.18 Jan. 1989.
d. See FBIS-EAS-89-016,26 Jan. 1989, p. 9.
e. United Nations General Assembly (UNGA), 43rd session. First Committee, 20 Sep.-20 Oct. 1988.
f. UNGA, 43rd session, 20 Sep.-22 Dec. 1988.
g. Statements nude by the representatives of the country at the Canberra Govemment-Indusiry Conference against Chemical Weapons, Sep. 1989.

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TOWARDS THE THIRD BIOLOGICAL WEAPONS CONVENTION REVIEW CONFERENCE: THE POTENTIAL THREAT OF BIOLOGICAL AND TOXIN WEAPONS

Biological warfare may be defined as the deliberate use of living organisms and viruses or of their poisonous products to induce death or disease in man, animals or plants. The biological warfare agents depend for their effect upon their ability to multiply in the organism attacked. In the past biological and toxin warfare agents have been considered to have only limited military importance. As late as 1978, United States President Jimmy Carter stated

> "that such agents can only create serious problems for the user, that they will be indiscriminate in their application, ineffective as weapons of combat and they cannot be controlled. Under these conditions there is a very strong chance that they might cause as much harm to the user as the intended adversaries".

The development and production of biological weapons is a major undertaking, one which requires great technical resources and expenditures for the initial studies, for the development and production of biological agents and for the special weapon systems needed for their delivery. The manufacture of most putative biological weapon agents, especially of viral biological weapon agents, poses serious safety problems. In the joint background paper presented to the First Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction—the biological weapons Convention—by the depository Governments, the formidable safety requirements for any bacteriological weapon development actively involving pathogenic agents were clearly recognised.

Nevertheless, such weapons might be simpler and less expensive to produce than other weapons of mass destruction. Some countries with limited technical competence could become involved in the production of biological materials, using widely available technologies, without the proper safety and security measures.

Toxins, which are agents that cannot reproduce on their own can cause death or disease within minutes or hours. They have low stability when exposed to heat, surface pressure and oxidation. Attempts to use solid toxins for weapons purposes have encountered serious difficulties as regards maintaining agent stability during and after release and as regards achieving efficient aerosolisation. For these reasons besides the difficulty of manufacturing them and the cost involved, no country is known to possess toxin weapons or to have developed battlefield weapons based on toxins that would be competitive with chemical weapons.

Role of Gene Technology

The possible ramifications of genetic engineering on the efficiency of biological weapon agents is very controversial. In 1981, an expert panel convened by the United States Department of State concluded that genetic engineering will not yield pathogens that are any more lethal than some that already exist (e.g. anthrax)". Martin Kaplan and others maintain that the use of genetic engineering to fabricate new types of horrible biological weapons is science fiction and beyond the realm of possibility. He also claims that a genetically engineered organism is weak and cannot survive in an atmosphere in which it would be in competition with normal microbes. On the other hand, Erhard Geissler and others claim that genetic technology increases the efficiency of putative biological and toxin weapon agents and can interfere with a potential enemy's protection. It can also enhance the ability to protect forces utilising biological and toxin weapons. He also claims it can provide the means for mass production, efficiency of dissemination, and low persistence after delivery.

How Bacteriological (Biological) Warfare Agents Differ from Other Warfare Agents of Mass Destruction

Biological warfare agents have certain features which make them different from any other warfare agents of mass destruction. These relate to the nature, duration and extent of the possible threat they pose to human beings.

First, biological weapon agents are characterised by the extremely small amount of the agent that is sufficient to induce infection and by the variety of agents which could suit various tactical situations as regards the onset of their effect, the duration of their action and the question whether the intention is to produce incapacitation or death.

Secondly, most biological warfare agents are living organisms which threaten to produce and spread epidemics. Unintentional contamination is of particular concern. If the strictest safety measures are not observed or if they prove inadequte, biological warfare agents might, it is feared, be released during their development, production, storage or transport. If the persons involved in the development and production of the biological warfare agents were technically or scientifically inexperienced or conducted these activities carelessly outside so-called "high-risk" research centres or "maximum containment laboratories", the chance for unintentional contamination could increase.

Such practices could involve the danger of spreading epidemics, not only in the country involved, but also in adjacent countries and even all over the world. The problem could get out of control if a country was experimenting with genetic engineering and producing organisms whose characteristics had been changed. It might then become difficult to diagnose them and to prevent them from becoming a possible threat. Such practices go beyond a country's right to freedom of action since they threaten the safety and security of other countries and indeed of the whole world.

Strangely enough, in such a situation, the threat or danger of the spread of biological agents to other countries could not be considered a violation of the Geneva Protocol of 1925 inasmuch as it would not occur during the actual aggressive use of such weapons. Prohibition of the development and production of such weapons is therefore a matter of legitimate concern for the world community at large and could be achieved only under the provisions of the biological weapons Convention—hence also the importance of universal adherence to this Convention and of strict observance of its provisions. Even one irresponsible country outside the Convention, once involved in such practices, could constitute a real threat to every country in the world.

The third feature is that—unlike chemical and nuclear warfare agents, which are artificially produced—biological agents have always existed and have always caused and will continue to cause diseases and epidemics. Therefore they have been of great concern and will continue to be so. Research into methods of combating and controlling them

has been going on for many years and should continue. Because these agents do not respect national boundaries and therefore constitute a threat to the health of human beings everywhere, global co-operative efforts are needed to combat them. Research work on biological agents for peaceful and humanitarian purposes such as diagnosis, protection, decontamination, control and treatment should be shared with all nations and should be developed without commercial exclusivity.

In this, they differ from chemical and nuclear warfare agents, the introduction and production of which have involved certain industrial technologies and trade secrets that have to be guarded. This fact has indeed been an obstacle in the way of verification of the non-production of chemical weapons, and has been considered in the ongoing negotiations on the chemical weapons convention. If the world community agreed that research in the field of microbiology should not in any way be directed towards military objectives, then there would be no military secrets to hide. At the same time, if it is agreed that there should be no monopoly on the results of research work intended to fight diseases and epidemics producing micro-organisms—which do not respect national borders—there would be no trade secrets to guard or illicit activities to hide. If this is generally accepted, there should be no objection to on-site inspection and the exchange of visits and information between centres and scientists. Verification of compliance with the provisions of the biological weapons Convention would be much easier if countries adhered to it in good faith and really had nothing to hide.

Is the Biological Weapons Convention Weak?

Some analysts consider that the biological weapons Convention suffers from several weaknesses. First, it does not restrict research on potential biological weapons and toxic weapons agents; secondly, it allows the development, production and stockpiling of potential biological and toxic agents for prophylactic, protective and other peaceful purposes and does not limit the types and quantities of these agents; and thirdly, it lacks provisions with regard to verification.

To the first point, it may be said that if these organisms are present in the environment, it is important to conduct research on them in order to have a better understanding of their characteristics and of means to combat them and prevent epidemics. The fact that they are potential warfare agents does not prevent work on protection and treatment even after we have achieved universal adherence to the biological weapons Convention. What should be prohibited is work

aimed at increasing the virulence and stability of the organisms or at improving their utility in the field.

To the second point, it may be said that in order to conduct research, it is necessary to have enough material to work with, but that the quantities produced should not exceed the capacity of the specific research centre. As to the types of organisms to be investigated, one cannot say that each country should work only on organisms that are present in its environment or that could threaten public health in a given country. That would not be practical and might even be harmful. It is true that some diseases are indigenous to certain parts of the world, but because of the continuous and fast movement of people and goods all over the world the spread of diseases could be global. Therefore, countries which have the facilities and scientists necessary to conduct research on their own problems and on those of others should do so, provided that the work is not secret and the results are declared and the research facility is open to scientific inspections.

As regards the third point, the verification provisions contained in the Convention are limited to article V under which States parties agree to consult one another and to co-operate in solving any problems, and under article VI, in which States parties undertake to co-operate in carrying out any investigation which the United Nations Security Council may initiate in response to a complaint submitted to it. At the First Review Conference, it was agreed that any State party might request a consultative meeting of experts to deal with problems that might arise. This could permit resolution of political problems at the technical level. Again, the issue of effective verification had dominated the discussions at the Second Review Conference, held in 1986. The Conference agreed on a number of measures to eliminate or reduce doubts and suspicions, including (*a*) exchange of data on "high risk" research centres and laboratories; (*b*) exchange of information on outbreaks of infectious diseases; (*c*) encouragement of publication of results of biological research; and (*d*) promotion of contacts between scientists. The Conference also agreed that an *ad hoc* meeting of scientific and technical experts from States parties would be held in Geneva to finalise the modalities for the exchange of information and data. The first such meeting was held from 31 March to 15 April 1987. Three rounds of information exchange have taken place. The information and data collected were reported, as agreed upon in the Conference, to the Department for Disarmament Affairs of the United Nations Secretariat, for transmission to all States parties.

Strengthening the Biological Weapons Convention

Nowadays, co-operation between the two major Powers has replaced confrontation. The dramatic changes in the international atmosphere are most encouraging and have contributed to great accomplishments in the area of disarmament. The sensational agreements regarding verification with regard to nuclear and chemical weapons are hopeful signs that mankind not only could get rid of the weapons of mass destruction that have been threatening its survival, but could also look forward to an era of peace and security. The nations of the world need to join hands in efforts to strengthen confidence-building measures and to realise the value of openness and mutual trust as factors in ensuring stability in international relations. This tends to improve the prospects for strengthening the biological weapons Convention and to reduce the doubts with regard to verification. This could be achieved through more openness, comprehensive and honest declaration by all research centres of the work which is being carried out, and an exchange of visits. On-site challenge inspection would provide an additional means of verification and confidence-building.

The development and production of biological and toxin weapons agents by a country with insufficient technical competence conducting such work without maximum containment facilities poses a very serious threat, one that cannot be over-estimated. As stated before, this could lead to the spread of epidemics, not only in one country and its environs, but throughout the whole world. This constitutes a real threat to every country in the world and should be given serious consideration at the forthcoming Review Conference. Perhaps the best way to avoid such a threat would be to achieve universal adherence to the Convention. The ways and means of achieving universal adherence to the Convention should be the main objective of the Review Conference.

STRENGTHENING THE BIOLOGICAL WEAPONS CONVENTION

In 1972, when the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, known as the biological weapons Convention, was concluded, biological and toxin warfare agents seemed to have rather little military value.

After the emergence of the new molecular biotechnology, including genetic engineering, the three depositary Governments—the Soviet Union, the United Kingdom and the United States—in their background

paper prepared for the States parties to the biological weapons Convention before the First Review Conference, in 1980, emphasised that

> "modifying an organism by recombinant DNA techniques is similar in effect to modifying it by classical genetic techniques."

The majority of the participants in the First Review Conference shared this view and noted

> "that Article I [of the biological weapons Convention] has proved sufficiently comprehensive to have covered recent scientific and technological developments relevant to the Convention".[2]

New Threat of Biological and Toxin Weapons

However, this view has changed in recent years. The broader introduction of molecular biotechnology caused a re-evaluation of the military value of biological and toxin weapons in the early 1980s. The new assessment was described most clearly in 1986 by the United States Department of Defense as follows:

"Perhaps the most significant event in the history of biological weapons development has been the advent of biotechnology.... It enables the development of new microorganisms and products with new, unorthodox characteristics. ... Conceptually, then, a nation or terrorist group can design a biological weapon to meet a variety of contingencies or needs. ... The breakthrough and the subsequent achievements make biological warfare much more feasible and effective...."

Numerous scientists, politicians, military leaders and diplomats, including participants in the Second Review Conference of the States parties to the biological weapons Convention, shared this view, at least in principle.

Although some scientists have expressed different opinions, I too believe that the emergence of the new techniques has increased the threat of biological and toxin warfare. Molecular biotechnological methods make it possible, for example, not only to produce military significant amounts of super-toxic toxins but to insert toxin genes into the genetic material of several viruses. Thus "second generation biological weapon agents" might be created. Second-generation biological weapon agents are combinations of biological and toxin weapons, that is, genes coding for super-toxic toxins integrated into the genomes of highly contagious or otherwise military "interesting" viruses. On the other hand, molecular biotechnology now provides several means for

developing highly efficient vaccines. Such vaccines might be used, *inter alia*, to protect the troops of an attacker against a biological or toxin weapon agent which the attacker himself intended to use. Thus, vaccines might provide a biological first-strike capacity.

Although the development and production of new biological and toxin weapon agents and their use are forbidden by the biological weapons Convention and by the Geneva Protocol, the new situation created by the recent developments in molecular biotechnology might reduce the willingness of some States parties to adhere to their commitments. One should remember in this connection that Iraq, which is a State party to the Geneva Protocol, used chemical weapons during its war with Iran and obviously also against its own Kurdish population without any serious reactions on the part of the international community. As this violation of the Geneva Protocol was, apparently, not without military success, and as a further use of chemical weapons in this highly sensitive region cannot be excluded at this very time, other States, whether signatories or even States parties to the biological weapons Convention or certain militant groups, might also consider making use of these types of "poor man's atomic bombs".

It should be pointed out in this connection that there are still some 60 countries that have not yet ratified the Convention. The overwhelming majority of these are developing countries. Iraq, for example, has signed but not ratified the Convention, and Israel is not even a signatory.

It should be emphasised also that several States parties to the Geneva Protocol, including the five permanent members of the United Nations Security Council, have reserved their right to use chemical and biological weapons in the event that any adversary should use them first. With respect to bacteriological and toxin weapons this reservation is unequivocally in contradiction to the provisions of the biological weapons Convention. Nevertheless, only Australia, Barbados and Ireland have so far declared that they have decided to withdraw this reservation. Similar declarations by other States would undoubtedly contribute to strengthening the biological weapons Convention.

Whatever the real military value of biological and toxin weapon agents or the military threat of molecular biotechnology, fears of such matters have been used as a justification for expanding "biological defence research programmes" in at least two countries, the United States and the Soviet Union. However, the risks involved in such programmes should be well understood. One risk arises from the simple fact that the mere existence of such programmes might trigger an action-

reaction cycle of comparable activities by other nations, thus leading to a "biological defence research race". Another risk is that increasing biological and toxin warfare defence activities involving dangerous pathogens might result in an unintentional release of pathogenic agents, be they genetically engineered or not.

An increasing probability of unintentional release of dangerous agents is in part associated with the proliferation of biological and toxin warfare technology. Proliferation is a danger in this respect because the operations involved in the development of these agents might be carried out in some countries with insufficient technical competence and responsibility. This might lead, even without any military applications, to a breakdown of containment resulting in outbreaks of infectious diseases and intoxinations among human beings, crops and livestock.

Domestic Legislation

It should be stressed that the Convention binds only Governments of States parties and not their respective populations. Article IV of the Convention therefore imposes an obligation upon parties to enact domestic legislation criminalising the development, production, stockpiling and acquisition or retention of biological and toxin weapons. Only a minority of States have so far taken action to incorporate the commitments of the Convention into national law: Australia, Belgium, Bulgaria, Finland, France, the Netherlands, New Zealand, Norway, the United Kingdom and the United States.

Domestic legislation is also necessary to prevent unauthorised or criminal access to such agents. It would also contribute to the prevention of proliferation. Domestic legislation should also prevent the acquisition, stockpiling and use of biological and toxin weapons by the secret services.

The Danger of Proliferation

Now that the cold war has come to a peaceful end, the prospect of East-West biological warfare has eased dramatically. There is increasing concern, however, that a biological and toxin arms race might be a North-South or South-South problem. United States sources have claimed, for example, that the number of States having offensive biological weapon programmes has risen from 4 to 10 since 1972 and that "3 countries world-wide now have bacteriological weapons", while 15 others are "suspected" of developing them. Regardless of the accuracy of these reports, which cannot be verified by an independent observer inasmuch as the list of the States accused is classified, measures should

be taken to prevent proliferation both of those types and quantities of biological agents and toxins that are available for permitted purposes and of the corresponding technology.

The danger of proliferation of biological and toxin weapons should also be discussed in connection with the implementation of article X of the Convention. Under this article States parties undertake to facilitate, and to participate in, "the fullest possible exchange of equipment, materials and scientific and technological information for the use of bacteriological (biological) agents and toxins for peaceful purposes". This obligation cannot be fulfilled without dealing with problems posed by the possibility of proliferation. It is also inevitable that confidence-building and verification of compliance cannot be discussed separately from the problems of peaceful co-operation. Why should we not, therefore, following the example set in the successful international co-operation in the eradication of smallpox, encourage States to consider joining forces, preferably under the auspices of the World Health Organisation, to ensure that the fruits of biotechnology are grown and harvested for health care and other peaceful purposes only and that they are made universally available?

Loopholes in the Biological Weapons Convention and the Geneva Protocol

The new possibilities provided by molecular biotechnology reveal that there are some loopholes in both the biological weapons Convention and the Geneva Protocol. For example, neither treaty provides for verification measures. The Convention does not restrict research on potential biological and toxin weapon agents, and it permits the development, production and stockpiling of biological and toxin weapon agents for prophylactic, protective and other ostensibly "peaceful" purposes without any limitation. As already mentioned, vaccines can be used not only for defence but also to protect troops in advance of a prospective attack in which biological and toxin agents might be used. If, however, the development of vaccines against potential biological and toxin agents as well as other permitted activities directly related to the Convention were to become internationalised, there would be less room for suspicion of a possible offensive intention behind activities ostensibly carried out for peaceful purposes.

First Attempts to Strengthen the BW Convention

The biological weapons Convention must be strengthened in order to spare humankind a biological and toxin arms race. The participants

in the Second Review Conference took a positive first step in that direction in agreeing upon a number of confidence-building measures. Implementation of those measures is not enough, however. The efficacy of the information exchange is disappointing, with respect both to the level of participation and to the completeness of the information provided. To date, only 36 States have exchanged information (see list at end of article).

As increasing concern is raised regarding the danger of the proliferation of biological and toxin weapon technologies, the almost total lack of participation by Third World countries is disturbing. Only one contribution was made by an African State. Only three reports have been provided by Asian developing countries. Only three Latin American States have so far participated in the information exchange.

The efficacy of the information exchange is also disappointing, because even participating States did not provide complete information as requested by the 1987 *ad hoc* Meeting of Experts. For example, the majority of the more than 100 institutions involved in the United States Biological Defense Research Programme and of the approximately 70 facilities involved in a similar programme carried out in the USSR are not mentioned in the reports submitted by these States. These and other results demonstrate that the agreement to report on research centres and laboratories is both ambiguous and insufficient. For example, if only those facilities which are specialised in R&D directly related to the biological weapons Convention are to be included, then other centres and laboratories which are specialised in other fields of biosciences but which are nevertheless involved in activities related to the Convention, be it only in one laboratory, are exempted from inclusion in the reports.

States parties have been requested also to exchange information on outbreaks of infectious diseases and in-toxinations that seem to deviate from the normal pattern. Only one outbreak was reported in 1990, namely, by the United Kingdom. No other outbreak has been described although approximately 70 outbreaks occurred, during the period covered, in States participating in the information exchange and should, according to the modalities, have been reported. In Canada, for example, an "amnesic shellfish poisoning" occurred in 1987 which bore "many similarities to the situation that might be expected from a clandestine attack using such a novel agent". The outbreak should have been reported immediately to the States parties to the Convention, as well as in the 1988 Canadian report.

The next steps necessary to strengthen the biological weapons Convention should include an agreement on legally binding measures. The measures agreed at the Second Review Conference have proved to be inadequate because they are not legally binding. Proposals made during the Conference for negotiation of an additional protocol were rejected, in part with the argument that the participants lacked a mandate to negotiate an additional protocol. It was also argued that it would be appropriate to await the conclusion of a chemical weapons convention, given the generally optimistic view that that convention would be completed soon. This optimism has proved to be misplaced. It is questionable whether a chemical weapons convention will be completed or enter into force in the near future. There is no longer any justification for postponing the preparation of legally binding measures to strengthen the biological weapons Convention. The Third Review Conference should therefore be given a mandate to convoke a series of meetings of experts from the parties to draw up a draft proposal for an additional protocol.

Proposed Additional Measures to Strengthen the BW Convention

Proposals to strengthen the Convention have already been put forward. A comprehensive set of recommendations was provided by an expert group convened by the Federation of American Scientists. Proposals put forward to strengthen the biological weapons Convention include, *inter alia,* the following recommendations:

1. It might be appropriate for the Preparatory Committee of the Third Review Conference to request the United Nations Department for Disarmament Affairs to prepare and circulate in advance of the Conference a paper describing, *inter alia,* (*a*) the results of the confidence-building measures; (*b*) domestic compliance measures including national implementation systems.
2. The Third Review Conference should define unambiguously which activities, agents etc. are covered by the phrase "directly related to the Convention", and which activities are permitted.
3. The Conference should reaffirm that microbial and other biological agents and toxins deleterious to plants, animals and humans are included under the agents covered by the Convention.
4. The Conference should reaffirm that biologically produced chemicals are included under "other biological agents, or toxins" covered by article I of the Convention and should define which organisms are covered by the term "other biological agents."

5. The Conference should emphasise that the creation of biological agents or toxins with altered properties that might increase their usefulness as weapon agents is not justified for any military purpose, including protection against possible hostile use.
6. The Conference should establish (an) expert group(s) to consider: (*a*) whether measures can be established to prevent biomedical research from being misused in support of offensive purposes; (*b*) whether an epidemiological surveillance programme can be established; (c) whether an international verification laboratory can be established; (*d*) whether an international programme for the development and usage of vaccines can be established.
7. The Conference should recommend that States parties adopt national legislation that would require adherence in the levels of containment for infectious agents set by WHO and would require that recombinant and other novel infectious agents be subjected to the highest level of containment appropriate.
8. The Conference should emphasise that all activities in the field of biological defence R&D be conducted in complete openness, preferably in civilian facilities and with public health rather than military funding.
9. Each State party should be required to make routine annual declarations of (a) all facilities, governmental and private, that conduct research, development, testing, production or other permitted activities directly related to the Convention; (b) all biosafety level 4, biosafety level 3, and other special facilities possessing containment equipment and/or structural features designed to protect the environment and personnel outside the containment unit; (c) all facilities for the deliberate production of aerosols under biosafety level 2 or higher containment; (d) all transfers of controlled agents into and out of the boundaries of the facilities declared; (e) all outbreaks of disease caused, or possibly caused, by agents subject to declaration; (f) all military and all mass civilian immunisation programmes and all military programmes for the development and use of vaccines; (g) all sites for open-air field-testing or training for protection against biological and toxin warfare; (h) the time and site of any open-air military operation that includes field testing or training in protection against biological and toxin warfare; (i) actions it has taken to assure domestic compliance with the Convention; (j) all publications based on work done at declared facilities; even if only to state that it has nothing to declare.

10. The Conference should seek the assistance of WHO in reporting and evaluating information provided on such matters as facilities, agents and outbreaks.
11. The Conference should agree that States parties will give advance notice of the time and site of any open-air military training operation in biological and toxin weapon defence.
12. The Conference should consider the question whether all information to be reported on should be fed into a central data base affiliated with a verification agency, the United Nations Department for Disarmament Affairs, or WHO.
13. The Conference should consider establishing a continuing body (a) to oversee and facilitate the functioning of the Convention during the intervals between review conferences; (b) to process and evaluate the outcome of the information exchange; (c) to report any questions raised by States parties about information supplied by other States and make suggestions with regard to the further monitoring or scrutiny of the reports of States parties; (d) to ask countries which did not report why they failed to do so.
14. The Conference should agree to establish an inspectorate to administer the verification protocol and procedures for inspections of declared facilities, for challenge inspections, and for special monitoring.
15. The Conference should declare that any State party has the right to request the Secretary-General of the United Nations to conduct a timely fact-finding inquiry into compliance concerns and should stress the obligation of States parties to cooperate with such an inquiry. The Third Review Conference should request the General Assembly to adopt a resolution enabling the Secretary-General to respond to such requests.
16. The Conference should consider expanding article IV of the biological weapons Convention to emphasise that: (a) it shall be unlawful for any person living in any State party knowingly to engage in any activity prohibited by the Convention; (*b*) any person living in a State party who knows of any activity in violation of the Convention shall have the affirmative duty to report such activity to suitable national and international supervisory organisations; (*c*) any person living in a State party who shall have made a good faith report under the preceding

mandate shall be protected from adverse economic or other sanctions by his or her State, by the community of scientists, and by the community of nations.

Conclusion

The biological weapons Convention should and can be strengthened in order to prevent biological and toxin warfare and to restrict the use of biotechnology to peaceful purposes. The confidence-building measures agreed upon by the Second Review Conference represent a first, though incomplete, step in this direction. Additional legally binding actions need to be taken as discussed in this paper.

States Which Participated in the Information Exchange

Australia	(1987,1990)
Austria	(1990)
Belgium	(1988)
Bulgaria	(1988-1989)
Byelorussian SSR	(1987-1990)
Canada	(1987-1990)
Chile	(1990)
China	(1989-1990)
Czechoslovakia	(1987-1990)
Denmark	(1987-1990)
Democratic People's Republic of Korea	(1990)
Ecuador	(1990)
Finland	(1987-1990)
France	(1989)
German Democratic Republic	(1988-1990)
Germany, Federal Republic of	(1987-1990)
Greece	(1990)
Hungary	(1987)
Ireland	(1988,1990)
Italy	(1989-1990)
Japan	(1988)
Mexico	(1990)
Mongolia	(1990)
Netherlands	(1987-1990)
New Zealand	(1987-1990)
Norway	(1987-1990)

Poland	(1987-1988)
Portugal	(1990)
Spain	(1987-1990)
Sweden	(1987-1990)
Switzerland	(1988-1990)
Togo	(1988)
Ukrainian SSR	(1987-1990)
United Kingdom	(1987-1990)
United States	(1987-1990)
Union of Soviet Socialist Republics	(1987-1990)

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THE NEXT STEP: A BIOLOGICAL VERIFICATION REGIME

The Third Review Conference of the Treaty on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction has been entrusted with a serious responsibility, one that will determine the course and the success of biological disarmament for a long time to come. The Review Conference is awaited with great expectations for real progress.

The Need

Yasushi Akashi, United Nations Under-Secretary-General for Disarmament Affairs, commented recently on the present state of the Convention:

> "In spite of its intrinsic value, the biological weapons Convention has been criticised for its lack of appropriate measures for verification of compliance. Over the past ten years, some concerns have been expressed in the international community regarding certain ambiguities and unresolved matters ... including questions of verification and compliance, confidence building measures, and legal and ethical issues."

These concerns spring from the explosive growth of biotechnology since the time when the Convention was signed, which has made biological and toxin weapons agents far more accessible than they ever were before and provided means for altering their characteristics, through genetic engineering, in ways that might be military useful. The inevitable and widespread military interest in the technology has generated suspicions, intensified because biological weapons are relatively cheap and technologically accessible as weapons of mass destruction and because the use of chemical weapons in the course of the last decade without significant international response has weakened the moral barriers to the use of biological weapons.

The Convention itself, as it now stands, does not help to resolve these concerns. By permitting the possession of biological agents of types and in quantities that are justified for "prophylactic, protective or other peaceful purposes", it permits the possession of seed stocks that can now be rapidly amplified and it permits programmes in biological defence that also have offensive import. Threat assessment, for example, carried out for defensive purposes, unavoidably provides information on the optimal procedures for the offensive use of the agents assessed; it might even be construed by some as including the creation of novel agents, in order to test defences against them. Even vaccine development has an offensive component, for the use of a biological weapon requires a good defence to protect the user. The strong overlap between defensive and offensive activities makes intention a determinant of compliance with the convention, and this is an invitation to controversy and loss of confidence—especially since the convention does not provide adequate procedures for resolving compliance concerns and complaints.

On the other hand, biotechnology has made the biological weapons convention more necessary than ever. Given the vast variety and unpredictability of the biological agents that exist or could be engineered, and the intrinsically unpredictable nature of their behaviour as weapons, it is not possible to develop a sure defence. An effective treaty is the best defence; and so the Convention must be amended.

At the Second Review Conference, in 1986, "most delegations agreed that the verification of compliance and complaints procedures required improvement. It was generally recognised that... [this] would promote confidence among States Parties." The President of the Review Conference, Austrian Ambassador Winfried Lang, wrote afterwards:

> "In the light of repeated statements to the effect that the treaty regime was in trouble and that its vulnerability could not be overlooked any longer, the Conference was challenged ... to strengthen an ailing treaty regime without the possibility of major surgery.

The Second Review Conference did its best, agreeing on an unprecedented extension of the interpretation of article V of the Convention, on co-operation in solving problems, to include an annual exchange of information on high-containment facilities and those that specialise in biological defence, and on unusual outbreaks of disease. But, although some five formal proposals were put forward to consider the negotiation of a supplemental protocol on verification, the idea was set aside pending the completion—thought to be imminent—of

the chemical weapons convention, whose stringent verification provisions would serve as a model. The "major surgery" was left to the Third Review Conference.

The results of the voluntary information exchange instituted at the last Review Conference have been disappointing in that the majority of the States parties have not participated, in spite of reminders sent by the Department for Disarmament Affairs of the United Nations Secretariat, even to say they had nothing to report; and the information that has been provided by participants has not always been complete. The information exchanged is very limited; proposals for additional, highly relevant exchanges were turned down at the Review Conference. It seems unlikely that a great deal more can be expected of voluntary measures.

Confidence-building, however, is urgent, particularly in the Middle East, where only a minority of States have ratified the biological weapons Convention and none have participated in the exchange. The present crisis there holds out hope for an eventual settlement that would eliminate weapons of mass destruction from the region— but, for biological weapons, that would not be likely without a legally binding regime for demonstrating compliance and detecting violations of the Convention.

The Final Declaration of the Second Review Conference reads:

> "The Conference, noting the differing views with regard to verification, decides that the Third Review Conference shall consider, *inter alia: . . .* the effectiveness of the provisions in Article V for consultation and co-operation and of the co-operative measures agreed in this Final Declaration, and... whether or not further actions are called for to create further co-operative measures in the context of Article V, or legally binding improvements to the Convention, or a combination of both."

The Third Review Conference is the time for action, regardless of the state of the chemical weapons negotiations. Without the openness that only a legally binding verification regime could impose, suspicions will continue to erode the biological weapons Convention. The onward march of biological science and technology will continue to make their military exploitation ever more dangerous and more tempting. Military investment in biotechnology is growing and will become increasingly difficult to reverse; the possibility of accidental escape of biological weapons agents will increasingly threaten public health. The threat of biological weapons proliferation is growing as tensions reorient from East/West to North/South; international concern was evident at the

1989 Paris Conference on the Geneva Protocol and is evident in the current Gulf crisis. The Third Review Conference should build on this concern and set in motion the process of drawing up verification procedures. This in itself would constitute a powerful confidence-building measure.

Proposals for Action

To take advantage of the historic opportunity offered by the Third Review Conference, the Federation of American Scientists* convened a Working Group on Biological and Toxin Weapons Verification composed of experts from the fields of biological science, industry and diplomacy, chaired by Dr. Robert Weinberg, Member of the Whitehead Institute and Professor of Biology at the Massachusetts Institute of Technology. The Group developed a series of proposals, which were reviewed, with written commentaries, by more than 130 scientists, policy-makers, industry representatives and academics with appropriate expertise from around the world before they were made final and issued in October 1990 as a report entitled "Proposals for the Third Review Conference of the Biological Weapons Convention". Part of the report is included in the annex to this article. The report includes both short-term proposals for immediate action at the Review Conference and long-term proposals for incorporation into a verification protocol, with a rationale for each proposal.

Among the short-term proposals are three affirmations of the intent of the biological weapons Convention (under article I), upon which specific verification measures can be based. If the Review Conference were to agree explicitly to these interpretations they would carry weight, even without a legal document, as a part of "subsequent practice" as defined by the United Nations Convention on the Law of Treaties adopted at Vienna. Affirmation A, which states that the creation of novel agents for any military purpose is not justified under the biological weapons Convention, is important because it deals with a major fear that drives suspicions. Affirmation B, which states that all biologically produced chemicals not justified for peaceful purposes are covered by the biological weapons Convention (as well as by the chemical weapons convention currently under negotiation), makes it clear that emerging threats such as endogenous bioregulators are covered, as well as classical toxins. These are statements of coverage, not definitions; the Convention language must not be limited by precise definitions if it is to remain relevant to new and unforeseen scientific developments and applications.

Several other proposals would extend the present voluntary annual information exchange. Most notably, proposal D under article V would specify declaration of all facilities engaged in biological defence activities, without the present limitations. In general, these are the facilities of greatest concern, and an exchange of information on all of them would provide considerable reassurance.

The Review Conference could also agree on a prohibition of transfers and co-operative activities relevant to biological defence involving non-parties to the biological weapons Convention (proposal A under article III). Article III already prohibits such activities with respect to weapons. Because of the significant overlap between defensive and offensive activities, this extension is important as a non-proliferation measure. It also provides an additional incentive to ratify the biological weapons convention.

Two proposals (B and E) under article V are particularly important as interim measures before the adoption of a legally binding verification regime. The Secretary-General of the United Nations could be requested to investigate compliance concerns relating to the biological weapons Convention, as he has been empowered to do for the Geneva Convention; and a committee could be established to oversee the annual information exchange and the proper functioning of the treaty regime between review conferences. In this regard, small contributions from States parties would enable the Department for Disarmament Affairs of the United Nations Secretariat to act as a temporary secretariat; among other things, the information exchanged could be made more accessible by translation and incorporation into the Department's verification data bank, now under development.

The major recommendation in the report is that the Review Conference should call an *ad hoc* meeting of experts from the States parties to draft proposals for a verification protocol to the biological weapons Convention. The resulting proposals could be used subsequently as a basis for negotiation, perhaps after completion of the chemical weapons convention. While much could be borrowed from the chemical weapons convention once it has been signed, verification with regard to biological weapons also has many unique requirements, including declarations, prohibitions and lists of controlled agents. By taking up these specific issues in a less formal way now the parties would convey the seriousness of their concerns and intentions and would make it possible to adopt a verification protocol with little delay after the completion of the chemical weapons convention.

A Verification Protocol

The long-term proposals in the report of the Federation of American Scientists are put forward not only as suggestions for the drafters of a protocol but, most important, as evidence that it is possible to design a workable and effective verification regime. Additional evidence is contained in a second report, issued by the Federation in January 1991, entitled "Implementation of the Proposals for a Verification Protocol to the Biological Weapons Convention".

The proposals for a verification protocol are presented in the annex and will be discussed here. They are based on the following principles:

1. The regime should borrow as extensively as possible from the draft chemical weapons convention, which is already under negotiation and has many similarities.
2. Because of the very substantial civilian-military overlap in biological activities, the regime should rely on openness rather than prohibitions. Both civilian and military facilities must be included, in order to avoid circumvention of verification measures by the use of civilian facilities as covers for military activities. This will necessitate some intrusion into civilian matters. There must be arrangements to safeguard confidentiality, where needed.
3. Everything objectively verifiable that could give rise to suspicions or might be useful for prohibited purposes should be declared and thereby opened to the possibility of routine inspection. Because stockpiles of weapons agents could be produced relatively quickly, production potential as well as actual production of agents must be open for verification. Most of the declared facilities will be civilian and unquestionably peaceful; but in order to make sure that any illegitimate activities that may occur anywhere (regardless of the level of prudence or technological sophistication) are covered, all parties must declare certain normal civilian operations. These will include the kinds of basic facilities that a weak nation under pressure might be tempted to utilise for biological weapons purposes.
4. Annual declaration requirements should be clearly defined, avoiding matters of judgement or matters of intent or purpose, which are too subjective to be reliable. Incisive and comprehensive declaration requirements would serve best to deter activities not justified for peaceful purposes and would

tend to force violations to go clandestine. Violations of the biological weapons Convention would then be equivalent to lack of compliance with declaration requirements, which could be objectively established without reference to motives, purposes or even specific biological agents.

5. Declarations and inspections of declared sites should be routine, with no implication of non-compliance.
6. The declaration requirements should be such that complete and accurate compliance with them would provide the transparency in relevant activities that is needed to inspire confidence in compliance with the biological weapons Convention. Verification would consist of demonstrating the accuracy of the declarations. This would be the aim of inspections of all types.
7. The regime should be acceptable to all affected, including science, industry and the military.

The proposals represent a rough sketch for a biological verification regime, with many details missing. They would not provide perfect verification; that would not be realistic. Their purpose is to institutionalise openness and provide a means of demonstrating compliance, allaying suspicions and deterring violations. Means are also proposed for uncovering violations, but this is not the main concern, for almost nothing is generically prohibited. The primary objective is to make all relevant information openly available. Thus, a legally binding protocol is essential, for it will be necessary to divulge what is now usually withheld for reasons of national security. It is unlikely that this would be considered acceptable without the assurance that others will do the same.

A verification regime must elicit a maximum of information with a minimum of political difficulty. The proposed scheme utilises mandatory annual declarations and inspections for this purpose. One of the requirements, the declaration of all facilities containing controlled agents, necessitates an agreed list of such agents. In an appendix to the annex (not included here), the report proposes a set of controlled categories, summarised as follows:

- All agents already developed as weapons
- All agents of World Health Organisation (WHO) risk groups III and IV
- All risk group II agents that are possible biological weapons candidates

- All pathogens quarantined by any Party
- All serious animal and plant pathogens
- All pathogens not fully described in the literature (including recombinants involving a pathogen)
- All derivatives of the foregoing agents that have decreased pathogenicity (and could therefore be used as simulants for offensive studies under low containment)
- All classical toxins and other chemicals of biological origin with an LD of less than 10 mg/kg.

Because of the widespread use of toxins in civilian research, the possession of specified small quantities is exempted from declaration. All of the agents to be controlled are pathogenic, whereas most organisms and chemicals handled in civilian research and technology are not. The verification proposals include a requirement for appropriate containment of infectious agents and a prohibition on open-air release of controlled agents.

Other annual declarations take aim, among other things, at certain "choke points" in the production and weaponisation of biological agents. The declaration of all facilities engaged in biological defence activities, discussed under short-term proposals, would become obligatory. (Other relevant short-term measures would also be included in the protocol.) Collateral information to be supplied with each declaration is specified in the January 1991 Implementation Report and is meant to indicate the capabilities and actual activities of the declared facility/site so as to be both effective in providing reassurance about the declared site and adequate as a basis for the interpretation of any subsequent inspection results.

The Working Group also recommends that personnel exchange, particularly between declared government facilities, should be encouraged on a bilateral basis among States parties under a verification protocol, and the possibility of a multilateral exchange programme should be considered. This would provide an important means of reassurance and a valuable supplement to the verification regime.

Verification would also be enhanced by an international programme for surveillance of infectious diseases, intoxinations and the emergence of new epidemic/epizootic threats. Such a programme is much needed as a global health measure. In connection with biological verification, unusual outbreaks of disease could be more accurately interpreted and the detection of illicit testing, accidental escape or hostile use of

controlled agents would be greatly facilitated. Participation in such a programme, which should include the training of local experts and should be directed towards the internationalisation of vaccine production, could be limited to States parties to the biological weapons Convention and its verification protocol. In the absence of an established programme, the treaty organisation under the protocol could collect and collate the data available from States parties, WHO and other sources and could encourage and assist the States parties in developing an appropriate infrastructure for surveillance.

The proposed inspection measures (see annex) include challenge inspection, with provisions similar to those in the draft chemical weapons convention, and inspection of declared facilities, utilising a targeted system in which each State party selects a fixed number of inspection sites per year, with additional sites chosen by the inspectorate. There would be no suggestion of treaty violation in the selection process.

The Federation's "Report on Implementation" lists the documentation that should be maintained at declared sites for access during inspection and broadly outlines proposed inspection procedures, based in so far as possible on those of the draft chemical weapons convention. The report covers sources of information relevant to compliance with the biological weapons, Convention, and discusses the kinds of information accessible through on-site inspection and its effectiveness for verification.

Although there are characteristic difficulties in verification of biological weapons, there are also unique and extremely valuable facilitating factors in comparison with verification of other types of weapons: namely, the need for stringent safety precautions, and the inevitable presence of specific antibodies in the blood of humans and animals either exposed to biological agents or immunised against them. The physical safety measures needed for many biological weapons agents exceed and differ from those required even for chemical weapons, and it would be essentially impossible to hide them from inspectors. Antibodies can readily be detected in blood samples from any exposed mammal, from laboratory mice to troops. Thus, antibodies are always there to bear witness to biological agents, even when agent stocks have been removed, hidden or destroyed before inspection. Traces of the agents may also be found in, for example, wastes and air filters.

A practised inspector would be able to extrapolate from a relatively few observations and could confirm his conclusions with a few more spot checks. The relevant facts assembled by the inspector would then make possible an estimate of the nature and scale of potential or current

operations at the inspected site, to be weighed against the capabilities and activities declared. The degree of openness evidenced, together with the appropriateness for peaceful purposes of the activities and facilities in their social and economic context, would enable other States parties to evaluate the degree of confidence they should place in compliance with the biological weapons convention at the inspected site. The availability of reliable facts would reduce misunderstanding, and the effectiveness of inspection would provide an additional incentive for States parties to ensure that their own declarations were accurate.

Under the proposed verification regime, the following conclusions could be drawn from on-site inspection:

- No evidence of non-compliance;
- Failure to comply or incomplete compliance with one or more declaration requirements; or
- Inconsistency or ambiguity of declared information with respect to the observed facts regarding the capabilities of the site, the activities conducted there, or the agents handled.

Clearly, the more extensive and incisive the declaration requirements, the more meaningful these conclusions would be. Specification of the nature of the incompleteness, inconsistency or ambiguity in the inspection report would focus attention on the character of possible violations of the biological weapons Convention that might be present at the inspected site.

With the proposed verification regime, the major hurdle (which must be left to the national intelligence of the States parties) would be the discovery of clandestine sites and activities so that they can be inspected or monitored. Once opened for routine or challenge inspection, however, illicit activities on any significant scale could not be covered up with any likelihood of success. They would be exposed as, at the least, questionable. This is not the same thing as proof of violation of the biological weapons Convention, however; it would still be up to the States parties to judge whether or not the situation could be justified for peaceful purposes. This uncertainty is intrinsic in biological verification, but it does not preclude operational conclusions regarding the trustworthiness and responsibility of States parties.

By opening their facilities to international inspection, States parties would enhance their credibility and encourage other States to participate in the Treaty regime. Confidence and mutual trust would gradually increase as the information provided in annual declarations was

consistently confirmed by on-site inspection. In cases of ambiguity or clear violation, the regime would prevent surprise and allow political action or protective measures to be taken. It would build confidence that the parties would act collectively to oppose any violation.

Cost

A verification protocol will of course cost money, but considerably less than for the chemical weapons convention; and less still if some organisational arrangements can be shared with the chemical weapons convention. There is no destruction of stockpiles or production facilities to be monitored, and, with the targeted inspection system proposed for declared facilities, a relatively small number of inspections per year would still exert a strong deterrent effect. Many declared facilities would be inspected very infrequently, perhaps never. Although not predictable, inspections would generally be concentrated on the sites of most concern. The regime would provide confidence with relatively little intrusion and at reasonable cost.

A rough estimate of the international costs can be made on the basis of several recent studies on verification in connection with the draft chemical weapons convention. For a total of 400 inspections per year, probably more than enough (for example, 2 declared sites selected by each State party, 78 selected by the inspectorate, and 100 challenge inspections or special monitoring of declared occurrences), about 90 inspectors and 162 additional staff would be ample.

For this case (case A) the annual costs (not including start-up) can be estimated at the amounts shown in the table in millions of US dollars:

	Case A	*Case B*
Inspectors	$8.1	$2.25
Other staff	6.5	1.8
Travel	6.0	2.5
Other costs	1.5	0.4
Equipment	1.0	0.5
Overhead	1.0	0.5
Total	$24.1	$6.0

This is a very liberal estimate. Divided among over 100 States parties, $24.1 million is a small sum, to be weighed against the security benefits and savings realised—including decreased expenditures on defence and on weapons for deterrence, and increased access to biological

intelligence (which is particularly difficult to obtain). The trade-offs are discussed by Beck. Compared with the many thousands of sites to be inspected regularly, and the correspondingly high costs, under the Treaty on Conventional Armed Forces in Europe, for example, a biological weapons verification protocol would be a real bargain.

ANNEX

Proposals for the Third Review Conference of the Biological Weapons Convention

submitted by
The Federation of American Scientists Working Group on Biological and Toxin Weapons Verification
September1990
(*Excerpts*)

Short-Term Proposals for Immediate Action by the Third Review Conference

Article I

Proposals:

A The Review Conference should reaffirm that the creation, by any means, of biological agents or toxins with altered properties that might increase their usefulness as weapons agents is not justified under the BWC for any military purpose, including protection against possible hostile use.

Rationale:

The intent of the Convention needs to be clarified in this regard because the creation of new and novel warfare agents (through genetic engineering or other biotechnologies, for example) might be contemplated for protective purposes such as threat assessment or the development of specific detectors or vaccines. Suspicions that activities of this kind may be taking place would undermine the Convention. New pathogens pose a threat to world health and welfare that outweighs any possible protective value. The use of standard cloning vehicles would not be affected.

B The Review Conference should reaffirm that all biologically produced chemicals, whatever their origin or method of production, of types and in quantities not justified for prophylactic, protective or other peaceful purposes are included under "other biological agents or toxins" covered by the Convention.

Rationale:

Chemicals produced biologically that are not normally toxic but are toxic at non-physiological doses (certain hormones for example) are similar to other biological agents and toxins in terms of methods of production, dosage and quantity required for use as weapons, and means of verification. Like classical toxins, they can be produced readily in quantity, using cloning techniques, in microorganisms. All harmful chemicals are covered under the draft Chemical Weapons Convention (CWC); if they are biologically produced, however, like classical toxins, they are also covered under the BWC.

C The Review Conference should reaffirm that all microbial and other biological agents and toxins deleterious to plants, animals and humans are included under the agents covered by this treaty.

Rationale:

The BWC prohibits "microbial or other biological agents... of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes", without any limitations regarding the target organisms or the nature of the biological agents. Green plants and livestock are susceptible to numerous deleterious agents, whose deliberate introduction could affect food production and cause direct injury to a human population. Since many modern societies are based on monoculture (rice in the Orient, corn in the middle Americas, taro in pans of Africa, etc.), large-scale outbreaks of plant diseases or insects could produce catastrophic effects. Advances in biotechnology have greatly magnified the dangers of biological anti-plant agents.

Article III

Proposal:

A The Review Conference should agree that the States Parties will not transfer to non-Parties any biological agents or toxins or any material, equipment or information under their jurisdiction or control that is relevant to permitted or prohibited biological activities directly related to the convention, nor will they undertake or permit, with non-Parties, any personnel transfer, cooperative activity or other collaboration involving otherwise permitted activities directly related to the Convention.

Rationale:

Because many protective activities have dual significance, and because a good defense is generally considered to be a prerequisite for

offensive use of BW, this measure would eliminate any form of cooperation between a Party and a non-Party that could contribute to the proliferation of BW. Moreover, it may provide an incentive for non-Parties to join the Convention. This non-proliferation measure is intended to extend the prohibition on assistance for non-peaceful purposes with a voluntary renunciation of any assistance to non-Parties to the Convention in the area of permitted activities directly related to the Convention. (The phrase "permitted activities directly related to the Convention" is the term used in the Final Declaration of the Second Review Conference in setting up criteria for information exchange, to specify activities for the purpose of protection against the hostile use of biological weapons.)

Article IV

Proposal:

A The Review Conference should agree that States Parties will declare annually what actions they have taken to assure domestic compliance with the Convention.

Rationale:

Article IV of the Convention requires Parties to take measures to assure domestic compliance with the Convention. Many Parties to the BWC have not informed other Parties of the measures that they have taken with regard to this Article. The United States enacted a specific BWC implementation law in 1990 and similar measures are known to have been taken by a number of other Parties. An exchange of information on all actions taken to assure domestic compliance will encourage all Parties to act and will increase confidence in the Convention.

Article V

Proposals:

A The Review Conference should call a series of meetings of experts from the Parties to draw up a draft proposal for a Protocol to the BWC on verification.

Rationale:

The report of the Committee of the Whole at the Second Review Conference stated that "most delegations agreed that the verification of compliance and complaints procedures required improvement". The above action would provide a mode of consultation and cooperation

for resolving future compliance concerns. The draft Protocol proposal would be submitted to the States Parties to serve as a basis for subsequent negotiations. By setting this process in motion, the Third Review Conference would do much to strengthen confidence in the efficacy of the BWC.

B The Review Conference should declare that any State Party has the right to request the Secretary-General of the United Nations to conduct a timely fact-finding inquiry into compliance concerns and should stress the obligation of States Parties to cooperate with such an inquiry. The Conference should request the General Assembly to pass a resolution enabling the Secretary-General to respond to such requests.

Rationale:

The Secretary-General already has the authority—under the United Nations General Assembly resolutions 37/98 D, 39/65 E, and 42/37 C—to conduct an inquiry into the *use* of biological weapons. This proposal would empower the Secretary-General, following procedures available to him, to conduct an inquiry, with the assistance of qualified experts, into compliance concerns that do not entail use. Australia, Belgium, the Federal Republic of Germany, France and the United States jointly made such a proposal and Nigeria made a similar proposal at the Second Review Conference. The inquiries carried out by the Secretary-General in 1984,1985 and 1986 with respect to allegations of use of chemical weapons provide an appropriate model.

Provision should be made for the Secretary-General to receive confidential communications from non-governmental organisations and private individuals, especially concerning any suspicious activities in declared or undeclared sites, in a way that would protect the identity of the informant.

C The Review Conference should recommend that States Parties adopt national legislation that would require adherence, within their jurisdiction and control, to the levels of containment for infectious agents set by the World Health Organisation (WHO) and would require that new, recombinant and other novel infectious agents be subjected to the highest level of containment appropriate, by WHO standards, for the genetic donor, recipient, or any closely-related agent, or for the known or conjectural risk.

Rationale:

WHO has described specific containment levels for work with pathogens of various risk groups. This proposal would counter the

temptation to set aside precautions to protect world health and welfare in favour of expediting or concealing biological defense activities or prohibited activities.

D The Review Conference should agree that each State Party will declare annually all facilities, governmental and private, under its jurisdiction or control anywhere, that conduct research, development, testing, production or other permitted activities directly related to the Convention.

Rationale:

The intent of this proposal is to prevent or reduce the occurrence of ambiguities, doubts and suspicions in regard to activities permitted under the Convention. The States Parties agreed to a number of measures at the Second Review Conference, embodied in the Final Declaration, designed to enhance confidence in the Convention. One of the measures they agreed to was an exchange, of information on very high containment [BL4] facilities and those that "specialise in permitted biological activities directly related to the Convention". This proposal extends that measure to all permitted activities directly related to the Convention (i.e., for the purpose of protection against the hostile use of biological weapons) without regard to containment or specialisation.

Many States Parties have not made any declarations pursuant to the measures agreed upon at the Second Review Conference. While one may presume that nations omitting declarations have nothing to report, stating this explicitly would remove suspicions concerning States' motives for not filing the required reports. The Third Review Conference, therefore, should reaffirm all the measures adopted at the Second Review Conference under Article V and request each State Party to submit annual declarations responding to those measures and to the additional measures proposed here, even if only to state that it has nothing to report, or that it is unable to respond for a given reason.

E The Review Conference should consider the desirability of establishing a continuing body to oversee and facilitate the functioning of the BWC during the intervals between Review Conferences. This body could be called the "Oversight Committee".

Rationale:

The Oversight Committee could function, *inter alia,* to oversee the collection of annual declarations and their distribution and to report on the response; to facilitate the organisation of Consultative Meetings of the Parties if they are requested; to support the Secretary-General in

carrying out his responsibilities under the BWC, if requested; and to arrange informal discussions among States Parties concerning any compliance problem that may arise, or possible actions to increase the effectiveness of the Convention. The Oversight Committee could be designated from the ranks of the United Nations Representatives of the States Parties.

F The Review Conference should agree that States Parties will give advance notice of the time and site of any open-air military training operation in BW defense.

Rationale:

This proposal would provide confidence that any military training operations concerning BW would be defensive. Furthermore, military observers could be exchanged for monitoring operations of this type.

Article XII

Proposal:

A The Review Conference should agree that conferences of States Parties to review the operation of the Convention should be held at least every five years.

Rationale:

Conferences to review the operation of the Convention should be held at least every five years because of the rapid pace of scientific and technological developments in the fields relevant to the Convention.

Long-Term Proposals for Incorporation in a Verification Protocol

The Protocol should incorporate all the relevant short-term measures proposed above. The proposals under Article I are particularly important to affirm the scope of the Protocol.

Article V

Proposals:

A Require States Parties to adhere to the levels of containment for infectious agents set by WHO, and require new, recombinant and other novel infectious agents to be subjected to the highest level of containment appropriate (by WHO standards) for the genetic donor, recipient, or any closely related agent, or for the known or conjectural risk.

Rationale:

This measure will require activities with all hazardous infectious agents to be conducted in facilities with reporting requirements (proposed

herein). Standards for specific agents in the categories designated by WHO have been set by, among others, the Federal Republic of Germany and the German Democratic Republic, and the U.S. Public Health Service. (See Erhard Geissler, ed., *Strengthening the BWC by Confidence-Building Measures,* SIPRI (New York: Oxford University Press, 1990, Annex 5.) These or other existing specifications could be adopted, or another set could be especially drawn up for the Protocol.

B Prohibit the open-air release of controlled agents, with the following exception for plant pathogens. Prohibit the open-air release of controlled plant pathogens for military purposes, including protection, and require that any open-air release of plant pathogens take place under controlled conditions.

Rationale:

There are certain stages of development that biological agents ordinarily must pass through in the process of weaponisation. The more accessible developmental stages that can be monitored or restricted constitute "choke points", those places where the development of biological weapons can be intercepted most readily. The open-air release of agents is such a stage or choke point. It requires an isolated area and protection of observers. Moreover, it is more open to public or aerial surveillance than is work done under containment. The needs of research and industry make it impractical to apply a blanket prohibition to plant pathogens, however. The establishment of proper oversight regulations for the open-air release of controlled plant pathogens for peaceful civilian purposes should be part of the national implementation of the verification protocol.

C Annual Declarations:

Each State Party should be required to make routine annual declarations of the facilities and activities elaborated below, even if only to state that it has nothing to declare. Declarations of facilities will include the size of the facility, its auspices and sources of funding, its purpose, a brief description of all its activities, whether encapsulating protective clothing is available, the sources and quantities of each specific controlled agent (if any) that is handled and its disposition.

Rationale:

Routine annual declarations that are specific and mandatory will establish a standard and provide evidence of openness. Declarations will establish a base line against which national intelligence can be

checked, and will simplify the task of inspection. Moreover, they put potential violators on notice of the requirements of the BWC and establish a chain of documentation that can be the foundation for domestic or international enforcement of the BWC. To the extent that the required declarations are comprehensive it will make all activities that might be relevant to the Convention subject to routine modes of verification, or, if not declared, subject to detection as violations, thereby eliminating questions of intent.

States Parties will have to maintain registries of the specified facilities and activities, most of which will have peaceful purposes unrelated to the Convention but may have military potential. (In the United States, the requirement for declarations can help establish that at least some of the private firms that might be subject to these requirements comprise a "pervasively regulated industry", which would have the effect of reducing the extent of protection enjoyed by these firms against unreasonable searches provided in the Fourth Amendment to the United States Constitution.)

C1 All facilities containing agents belonging to the categories listed in Appendix A, in quantities greater than those noted therein, and all open-air field release sites for controlled plant pathogens. Facilities that function in an exclusively diagnostic or therapeutic manner are exempted from this provision; instead, they would only be required to report incidents of the possession or detection of controlled agents to a national health authority, which would make a single, annual diagnostic facility declaration specifying the facilities reporting controlled agents and the frequency of such encounters.

Rationale:

This proposal would disclose all military and civilian research and development with biological agents and toxins that could have weapons potential. Declaring all such facilities and opening them to routine inspections under proposal Dl would alleviate suspicions that any work in violation of the Convention is taking place in these facilities. It is necessary to include civilian facilities because they may be adequate for military purposes. This proposal deters illicit activities by making it more difficult to conceal them.

C2 All transfers of controlled agents into and out of the boundaries of the facilities declared under Cl, including the source(s), quantities and destination(s) of the agents and a declaration of the peaceful purpose for which they will be used.

Rationale:

This proposal would establish a paper trail of all controlled agents, making it more difficult for governments and sub-national groups to acquire biological agents and toxins that could be used as weapons.

C3 All outbreaks of disease caused, or possibly caused, by agents belonging to the categories in Appendix A.

Rationale:

At the Second Review Conference, States Parties agreed to exchange information on "all outbreaks of infectious diseases and similar occurrences caused by toxins, that seem to deviate from the normal pattern as regards type, development, place, or time of occurrence." This measure has proved impractical, because diseases that deviate from the normal pattern are difficult to define. The new proposal would simplify which disease outbreaks are subject to reporting requirements without any stigma that an outbreak is suspicious or unusual in any respect.

C4 All facilities for the deliberate production of aerosols under Biosafety Level (BL)2 or higher containment.

Rationale:

Aerosols are a suitable method for delivering BW agents and toxins. Facilities for aerosol production and study are, consequently, of particular concern and the openness of such activities needs to be established. Aerosol equipment is identifiable; therefore, this can be considered a choke point. Most work with biological agents and toxins does not involve the deliberate production of aerosols, although some permitted activities do involve aerosol production.

C5 All BL4, BL3, and other special facilities possessing containment equipment and/or structural features (to be specified) designed to protect the environment and personnel outside the containment unit.

Rationale:

This declaration, together with the requirement to adhere in appropriate containment standards (Proposal V. A, above) would mean that all facilities working with agents requiring the specified containment must be reported. If prohibited activities were occurring in clandestine facilities, violation could be established either on the basis of non-reporting of containment facilities, or of inappropriate containment, thereby eliminating the need to establish purpose. All BL3 facilities

are included because some countries might conduct prohibited activities in BL3 facilities if BL4 facilities were unavailable. The relevant design features and containment equipment to be reported should be listed specifically when the Protocol is drawn up.

C6 All military and all mass civilian immunisation programmes and all military programmes for the development and usage of vaccines.

Rationale:

Immunisation is not only a protective activity, but is generally considered to be a necessary preparation for offensive use of BW. Because objective tests can be carried out to monitor this provision, if necessary, it can be considered a choke point. C7 All sites for open-air field-testing or training for protection against BW.

Rationale:

This information would facilitate monitoring by national technical means. Offensive field testing and training are choke points.

C8 The time and site of any open-air military operation that includes field testing or training in protection against BW, to be provided in advance on an *ad hoc* basis.

Rationale:

This provision would make possible routine monitoring of such operations to ensure that no offensive training is included. Field training is a choke point. The term "field testing or training" includes any open-air release of uncontrolled biological agents or simulants for purposes related to protection against the possible hostile use of biological weapons.

C9 A list of all publications based on work done at declared facilities. (This requirement would not include publications based on work carried out entirely in undeclared facilities at institutions that also include a declared facility.)

Rationale:

This would provide invaluable information on the openness of activities at declared facilities. The cumulative declarations would constitute a resource and guide for the inspectorate (described below).

D Establish a Technical Secretariat/Inspectorate to administer the Protocol.

Rationale:

The functions of the Secretariat/Inspectorate would include compiling and checking annual declarations, carrying out inspections, disseminating information, organising an information exchange, organising and coordinating personnel exchange programmes, and organising assistance to States Parties endangered, threatened or injured by BW.

The organisation and governance of this body could be based on the Technical Secretariat/Inspectorate under negotiation for the CWC, including provisions for confidentiality. Many functional aspects of the body, its relationship to the analagous CWC body and provisions for its funding, will have to be established.

E Establish procedures for three types of inspections:

E1 Declared facilities. The Inspectorate would conduct a fixed number of inspections each year, on short notice, with each State Party allowed to request a certain number of inspections, chosen from declared sites within any State Party. These requests would not be linked to any allegations of breach of the Convention. The Chief of the Inspectorate would also choose a number of sites to inspect each year, including, especially, sites in States Parties not otherwise inspected for the year and sites the inspection of which would (in the opinion of the Inspectorate) contribute to the effectiveness of the treaty regime.

Rationale:

The non-confrontational character of the system could perhaps be enhanced as follows: States Parties would select sites for inspection at the start of each year and communicate them in secret to the Inspectorate, which would then carry out those inspections, plus those chosen by the Inspectorate. The Inspectorate would determine the order in which to carry out the inspections so that no one would know who had designated which inspection. At the end of the year each Party would affirm that its requests had been carried out, without divulging which they were.

Provision could be made for the inspectorate to receive confidential communications from non-governmental organisations and private individuals, especially concerning any suspicious activities in declared or undeclared sites, in a way that would protect the identity of the informant.

This proposal is based in part on the successful inspection experience under the Stockholm Document, and on a recent British proposal for

the CWC (CD-CW/VP232, 30 March 1989). It would constitute a more economical and efficient mechanism than routine inspection of declared facilities, and still serve as a deterrent to prohibited activities.

The British proposal cited above suggests that similar inspections would have the following advantages:

- a manageable number of inspections;
- attention focused on declared facilities of most concern both to the Convention and to the States Parties;
- the mandatory nature and very short advance warning would provide a high level of reassurance and deterrence;
- the targeted nature of the system would enable the vast numbers of facilities involved to be subjected to verification at a high level of cost-effectiveness; and
- the absence of expressed doubts about compliance would give the system a routine character.

E2 Challenge Inspections. The Inspectorate would conduct a challenge inspection of any site on short notice without right of refusal, at the request of any State Party for clarification of doubts about compliance.

Rationale:

When suspicions of violation of the Convention arise, a mechanism to carry out a rapid inspection of the relevant facility is necessary. Details of this procedure could be borrowed, wherever possible, from the challenge inspection procedure under negotiation for the CWC.

E3 *Special Monitoring.* Activities to be monitored would include: announced open-air dissemination of BW simulants, BW training operations, declared immunisation programmes, and outbreaks of disease caused by controlled agents.

Rationale:

Monitoring could be carried out by the Inspectorate or by a roster of experts at the request of the Inspectorate for the purpose of verifying declarations and assuring that no prohibited activities occur.

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THE STATE OF THE BIOLOGICAL WEAPONS CONVENTION

The Geneva Protocol of 1925

By learning to understand the causes of disease and by mastering methods of combating disease, man has also obtained the power to use disease for hostile purposes. An important milestone in the efforts to prevent such misuse of science and technology is the Geneva Protocol of 1925, which not only reaffirmed the prohibition of the use of chemical weapons, but extended this prohibition to "the use of bacteriological methods of warfare".

Inadequacies of the Protocol

The inadequacies of the protocol are, however, numerous. They fall into three categories: scope; confidence-building and verification; and world-wide application. These categories are discussed below.

Scope

1. The Protocol prohibits the use only *in war*. It could therefore be argued that in internal types of armed conflict the Protocol is not applicable.
2. Some parties have reserved the right to use chemical and biological weapons against non-parties.
3. Many parties have reserved the right to use chemical and biological weapons against parties that violate the Protocol.
4. The Protocol does not prohibit research, development, production and stockpiling of these weapons.
5. It is not clear whether the Protocol covers only lethal warfare agents or also non-lethal agents (such as tear gases).

6. It is not clear whether the Protocol covers only the use of agents directly against humans, or whether it also covers hostile use of such agents against animals (for example cattle) and plants.
7. The term "bacteriological" does not include all possible types of biological warfare agents (because in 1925 micro-organisms such as viruses were not yet known). The Protocol is nevertheless generally understood to encompass all types of micro-organisms.

Confidence-building and Verification

8. The Protocol does not provide for measures to give confidence that other parties are honouring their obligations.
9. The Protocol does not provide for measures for investigating doubts about compliance.
10. The Protocol does not have a mechanism for dealing with violations.

World-wide Application

11. During the first decades of its existence the effectiveness of the Protocol was limited because some major countries did not ratify the Protocol although they had originally signed it. Japan ratified it only in 1970 and the United States in 1975. Now, however, its membership is virtually universal.

Implications of the Shortcomings

As science and technology developed further after 1925, these shortcomings became more apparent. Biological weapons were developed, produced (among others by France, Japan, the United Kingdom and the United States) and even used. Although the military utility of these weapons remained very questionable, there was a growing danger that the prohibition of their use would erode.

At the end of the 1960s, therefore, negotiations began on a treaty that would complement the Protocol with a comprehensive ban on chemical and biological weapons. As chemical weapons were considered to be a more real threat than biological weapons, most Western countries were not willing to agree to a comprehensive prohibition of chemical weapons without adequate assurances that the obligations would be honoured by all parties. This would, however, require on-site inspections and the Soviet Union was vehemently against such inspections. The issues of chemical and biological weapons were therefore uncoupled

and in 1972 a convention was signed that was limited to a prohibition of biological and toxin weapons.

Toxin weapons are, technically speaking, chemical weapons but because they are normally produced by biological organisms such as microbes, animals and plants, and production therefore requires facilities similar to those required for the production of biological warfare agents, they were included in the scope of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction.

The Biological Weapons Convention

The biological weapons Convention made up for many of the shortcomings of the Geneva Protocol. Although the Convention did not explicitly prohibit the use of these agents, the undertaking in article I "never in any circumstances to develop, produce, stockpile or otherwise acquire or retain" such agents "of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes" left no doubt that their use would never be permitted. But the provisions for lodging complaints and initiating investigations were very weak. It should be noted that several of the concepts that were dropped during the negotiations, such as openness of research for investigation and challenge inspections, are now being considered again with a view to strengthening the Convention.

Inadequacies of the Convention

To facilitate a comparison with the Geneva Protocol, we can classify the weaknesses of the Convention into the same three categories.

Scope

1. The Convention does not prohibit research and allows development, production and stockpiling in quantities justified for "protective or other peaceful purposes" without setting a clear and objective limit on such quantities.
2. The Convention does not explicitly cover biological and toxin agents directed against animals and plants.

Confidence-building and Verification

3. Routine measures to give confidence in compliance are missing.
4. Doubts about compliance cannot effectively be investigated.
5. The Convention does not provide mechanisms for dealing with violations.

World-wide Application

6. Several relevant countries did not become parties.

Implications of the Inadequacies

A comparison with the shortcomings of the Geneva Protocol illustrates the accomplishments of the biological weapons Convention. The remaining weaknesses were very serious, but in 1972 the military relevance of biological weapons was still considered to be so slight that it was possible to reach an agreement on a comprehensive, but basically flawed, ban on biological weapons.

However, around the time of the First Review Conference, in 1980, the Convention was assailed by allegations that the Soviet Union was violating it. An unusual anthrax epidemic in Sverdlovsk was suspected of being the result of an explosion in a biological weapons plant and the United States Government alleged that it had irrefutable proof that the Soviet Union was involved in the use of toxin weapons in Afghanistan, Laos and Cambodia.

Confidence in the Convention was undermined and, especially in the United States, the question was raised whether the Convention served any useful purpose or only provided a false sense of security. What would be the future of the Convention if confidence in compliance could not be restored? At least these issues helped to convince parties of the need for greater openness, not only in case of allegations, but as a matter of routine with regard to relevant research centres, such as the laboratory in Sverdlovsk, and to unusual outbreaks of diseases, such as the anthrax epidemic.

The Second Review Conference

It was in this atmosphere that the Second Review Conference convened in 1986. In its assessment of scientific and technological developments the United States stressed that, although in the 1980s no scientific breakthroughs had occurred, such as the development of recom-binant DNA techniques in the 1970s, the adaptation of these earlier scientific advances to widespread applications might be of even greater relevance to the Convention. Of most concern were the improvements in the equipment used and the speed and cost of production and in the creation of safer conditions for handling biological materials. As a result, it had become more difficult to distinguish a large production facility from a laboratory, and the capabilities for breaking out of the Convention in a very short time had increased.

The great surprise of the Conference was the U-turn in the position of the Soviet Union. It suddenly emerged as a champion of strengthening the Convention with a legally binding verification regime. As the United States began at the same time to oppose a verification regime, it seemed that the Soviet Union had changed positions with the United States. The reason for the United States' opposition to a verification regime was, however, not a fundamental aversion to intrusive verification, as had been the case with the Soviet Union, but a fundamental lack of trust in its feasibility.

The other parties did not fully share the scepticism of the United States, but agreed that it would not be useful to start negotiations on verifying compliance with the Convention as long as the Conference on Disarmament was engaged in working out the verification provisions of a chemical weapons convention. These provisions should serve as a model for a possible verification protocol to the biological weapons convention.

The best option therefore seemed to be to strengthen the Convention in the same manner as had been done at the First Review Conference. At that Conference the Final Declaration of the Conference had been used to record agreement on an interpretation of article V of the Convention. This procedure was used again. To describe the measures agreed at the Second Review Conference as "interpretation" or "clarification" of the Convention would, however, give a false impression of the innovative character of these measures. It could well be claimed that the confidence-building measures that were adopted in the Final Declaration amounted in fact to a sort of politically binding additional protocol to the Convention and their adoption came as close to amending the Convention as a Review Conference possibly could.

The main accomplishment of the Second Review Conference was probably the agreement to implement the following measures:

1. Exchange of data on laboratories:
   (a) That "meet very high national or international safety standards...";
   (b) That "specialise in permitted biological activities directly related to the Convention";
2. Exchange of information on "all outbreaks of infectious diseases and similar occurrences caused by toxins that seem to deviate from the normal pattern ...";

3. Encouragement of the publication of results of biological research "directly related to the Convention ...";
4. Promotion of contacts between scientists engaged in biological research directly related to the Convention.

The modalities of these measures were finalised in April 1987 by a meeting of experts.

From an East-West Issue to a North-South Problem?

Slightly more than a year after these confidence-building measures were finalised, reports began to appear about countries that seemed interested in acquiring biological weapons. The People's Democratic Republic of Korea, Iran and Iraq are among the countries mentioned. According to the United States Department of Defense in 1988, 10 countries possessed biological weapons, and in September 1990 United States intelligence sources reported that Iraq had a sizeable stockpile of biological weapons. As a precaution, United States forces in the Gulf area were inoculated against anthrax.

The production and subsequent use of chemical weapons by Iraq had taught some important lessons. Iraq had in secrecy built production plants for chemical weapons, importing most of the necessary technology and materials from the West. Iraq had subsequently used chemical weapons in flagrant violation of the Geneva Protocol (to which it was a party). The industrialised countries could no longer close their eyes to the fact that their exports were sometimes used for the production and use of weapons of mass destruction. The signs that a few countries were actively trying to acquire a biological warfare capability therefore worried them. But what to do?

A combination of experience and deduction lead to the conclusion that a country that wants to produce biological weapons will probably try to acquire the following:

- Strains of the organisms (small quantities are sufficient)
- Equipment and materials for (large-scale) reproduction, such as fermenters, cultivating agents and harvesters
- Equipment for handling hazardous materials
- Equipment for conserving and disseminating agents. The problem is that most of this is also needed for very peaceful purposes, such as the production of vaccines. The techniques used for the production of a vaccine against a disease and for the production of a warfare agent to disseminate the same

disease are in fact strikingly similar. In both cases the organism that causes the disease is reproduced in large quantities. In the case of vaccine production, the disease-causing organism is, however, either changed or killed to prevent it from causing the disease.

A policy of simply denying countries the technology needed for health care and cattle-breeding would be unacceptable and, certainly in the long run, also impossible to implement. That is not to say that nothing can be done to prevent countries from producing or using biological weapons. Relevant research establishments and companies should be warned against the danger that they might unwillingly become involved in the production of biological weapons. In addition, particular relevant items, such as equipment for cultivating, harvesting and conserving biological organisms, could be brought under export controls, for example by requiring certain safeguards against misuse for biological weapon purposes. In the long run, however, a policy of non-proliferation is doomed, for by developing their own health-care infrastructure countries will automatically also obtain a capability to produce biological warfare agents. The only way to prevent the proliferation of biological weapons is, therefore, to strengthen the Convention.

The Concept of the Biological Weapons Convention and its Limits

The concept underlying the biological weapons Convention is that, in order to prevent biological warfare effectively, not only should the use of biological weapons be prohibited, but also, as far as possible, the route to such use. The Convention therefore complemented the Geneva Protocol with a ban on the activities that necessarily precede any use of biological weapons, that is, their development, production and stockpiling. Many of the shortcomings of the Convention are the result of the fact that this concept is fine in theory but very difficult to implement. Most of the steps that can lead to the use of biological weapons are also necessary for civil purposes or for protection against these weapons and cannot therefore simply be prohibited. Production of vaccines against a micro-organism, for example, has much in common with the production of that micro-organism as a biological warfare agent. The prohibitions under the Convention are therefore limited to activities that are intended for biological warfare purposes.

The following table illustrates the fact that the Convention prohibits only a small part of all potentially relevant activities. Such activities that might lead to biological warfare can be undertaken for three different purposes: civil, protection against biological weapons and offensive

use of biological weapons. Activities for the first two purposes are permitted. Activities for the latter purpose are usually, but not always, prohibited.

	Civil	*Protection*	*Offence*
1. Fundamental research	permitted	permitted	not prohibited
2. Applied research	permitted	permitted	not prohibited
3. Development	permitted	permitted	banned
4. Open-air testing	permitted	permitted	not prohibited
5. Development of production process	permitted	permitted	not prohibited
6. Small-scale production at pilot plant	permitted	permitted	banned
7. Production of precursors	———not applicable———		
8. Building of production installation	permiitted	permitted	not prohibited
9. Production of agent	permitted	permitted	banned
10. Conservation of agent	permitted	permitted	banned
11. Development of dissemination techniques	permitted	permitted(?)	banned
12. Production of dissemination equipment	permitted	permitted (?)	banned
13. Filling of shells, bombs etc.	———not applicable———		banned
14. Integration in military doctrine	———not applicable———		not prohibited
15. Deployment	———not applicable———		banned
16. Training in use: with mock agents	———not applicable———		not prohibited
Training in use: with real agents	———not applicable———		banned
17. Protection and prophylaxis	not applicable cable	permitted	—
18. Use	———not applicable———		not prohibited (but use is excluded)

The main criterion for prohibition or non-prohibition is the purpose of a given activity. That is why the Convention in its present form is extremely difficult to verify: intentions cannot be verified. However,

on the basis of a few, relatively minor, additional obligations, a credible verification regime can probably be developed.

What Is Needed to Use Biological Warfare Agents as Weapons?

A country that wants to use biological weapons has first of all to acquire biological warfare agents. Because the most relevant agents have no, or almost no, civil applications, import of relevant quantities is usually impossible. A country can, however, often skip several of the steps mentioned above by importing relevant equipment and materials. But acquiring a capability to produce biological warfare agents is by no means identical with acquiring a capability to use biological weapons, which requires development of an effective weapons system and introduction of it in its armed forces. Acquiring a military relevant quantity of biological warfare agents is not easy, but it is a light task in comparison with the problems involved in turning the agents into a military useful weapon. It can be argued that so far nobody has ever succeeded in solving the latter problems. Whereas all steps leading to the production of a stockpile of agents could in theory be circumvented by imports, use of the agents as weapons requires a number of steps, such as integration in the military doctrine and training in use, that a country has of necessity to take itself.

Research and the Example of the Chemical Weapons Convention

The biological weapons Convention bans the development of such weapons, but does not mention research on them, because it was considered impossible to make a clear and objective distinction between research for permitted purposes and research with the intention of producing biological warfare agents. Take, for example, research into a rare and very virulent disease. The most obvious reason for such research would of course be purely medical or scientific. Such research might, however, be undertaken with the purpose of using the disease for biological warfare. Or a country might start (permitted) research to develop prophylactic and protective measures against feared use of the disease by another party. An independent observer would probably not be able to tell for sure for what purpose the research activities were undertaken. It was therefore argued that a ban on research would not lead to more confidence, but would instead lead to accusations that could neither be validated nor disproved.

Regrettably, it is very difficult to draw a clear line between research and development.

The main difference seems to be the intention with which the activities take place—but intentions cannot be verified. For all practical purposes, a sliding scale exists between fundamental research and development of new types of warfare agents. The methods used are essentially the same. And although the quantities of agents needed for research purposes will in general be smaller than the quantities needed for development, even the scale of the activities is not really a distinguishing factor.

The problem is further aggravated because even the equipment needed for the production of biological warfare agents on a relevant scale is not very different from the equipment used for research. A plant for the production of biological warfare agents could be hidden in what seems to be a laboratory. As a result, we cannot afford to avoid the problem of inspection of research establishments. It should, however, be added that little is known about how much of a biological agent would constitute a military relevant quantity. As the victims of a biological weapon attack will not line up to become infected, quite large amounts of agents might be necessary, especially if quick and widespread results are required.

Part of the solution could possibly be found in an explicit prohibition of offensive research, but quantitative constraints on research and development for protective purposes and complete openness of all such research would probably be more effective.

The example of the negotiations on a chemical weapons convention is of only limited help. On the one hand, the projected convention does not provide for measures to verify the prohibition on the development of chemical weapons. The lack of a regime to verify what is going on in laboratories might not be fatal for the chemical weapons convention. Such verification is not considered essential as production of military relevant quantities of chemical warfare agents, in contrast to biological warfare agents, is not possible under the cloak of a research institute, but requires a full-scale production plant.

On the other hand, the projected chemical weapons convention will put research on the most risky chemicals under certain constraints. These chemicals, listed on schedule 1 of the draft Convention under preparation by the Conference on Disarmament, may be produced for research and some other permitted purposes, but every laboratory that produces or uses more than 100 grams should be declared. The total volume of all chemicals on this list in a country may never exceed 1

metric ton. The regime does not verify non-development of chemical warfare agents, because schedule 1 necessarily contains for the most part existing agents, not agents that might be in development. The principle of declaring relevant research facilities, of setting concrete limits to the quantities of relevant agents that may be produced or retained for permitted purposes and of opening them for international on-site inspection is, however, a useful example for the biological weapons convention.

Many other useful lessons can be drawn from the negotiations on a chemical weapons convention. But it should be remembered that biological agents differ fundamentally from chemical agents, and that the objects of verification, such as potential production facilities, differ also. The most fruitful way to test the utility, for the biological weapons Convention, of the experience of the negotiations on the chemical weapons convention would be to use the concepts in trial inspections of facilities relevant to the biological weapons Convention.

What Can Be Done?

To make the biological weapons Convention into a ban that is capable of withstanding the pressures of developments in biotechnology and proliferation, several different types of measures are necessary: the existing provisions should be fully implemented and further elaborated, a verification protocol should be added and the ban should be made truly universal. Some of the measures that should be considered are discussed below.

Make the Ban Global

More that 110 States are party to the biological weapons Convention, but many States are not. A concentrated effort should be made to make the ban global. In some cases a regional approach might be necessary. Staying outside the Convention could be made less attractive by installing controls for the export of relevant technology to non-parties.

Widen Participation in the Data Exchange

The confidence derived from the agreed confidence-building measures is dependent on the implementation of the measures. Parties that until now have not taken part in the information exchange (about two thirds) should undertake to do so, because an effective ban on biological weapons is in their interest also.

Improve the Processing of the Data

The information provided by parties to the Department for Disarmament Affairs of the United Nations Secretariat is forwarded to all parties in the form received. The accessibility of the information could easily be improved if the Department would play a more active role in processing the data, for example by providing, on request, a translation of all information received.

Costs

An effective exchange of data requires an effective international mechanism. This does not have to be expensive, but even the smallest possible mechanism costs money. The Second Review Conference ignored this fact. If a more effective functioning of the current measures is desired—this will be still more relevant when the next Review Conference decides on supplementary measures— parties will have to pay for it.

Consultative Meetings Open to All Parties

A forum should be created to provide parties with feedback on the information they have given, and to discuss problems in the implementation of the measures. For this purpose, consultative meetings open to all parties should be convened on a regular basis (at least once a year). Useful lessons can possibly be drawn from the way the recently created Conflict Prevention Centre supports and discusses the confidence- and security-building measures that have been agreed by the States that participate in the Conference on Security and Co-operation in Europe (CSCE).

Widen the Scope of Data Exchange on Laboratories

The Second Review Conference decided that data would be exchanged on two types of research centres: centres with very high containment facilities and centres that specialise in protection against biological weapons. Both categories were defined by the Meeting of Experts in 1987 in a restrictive way.

Confidence in the Convention would be strengthened if all laboratories that are involved in protection against biological and toxin weapons would be declared, even if they have no containment units or do not specialise in this type of work.

A laboratory does not have to possess maximum containment facilities to be capable of producing biological warfare agents. Apart

from the laboratories that are directly involved in protection against biological weapons and toxins, laboratories and other institutes can be of concern for one or more of the following reasons:

1. The types of agents that are handled, for example biological and toxin agents that have been developed and used as weapons in the past;
2. The presence of equipment for producing and conserving micro-organisms (such as large-scale fermenters), advanced equipment for harvesting (such as continuous flow centrifuges and filtration techniques), and equipment for long-term conservation of agents (such as freeze-drying equipment);
3. The facilities for containment.

The Third Review Conference could decide to convene an *ad hoc* meeting of experts, as the Second Review Conference did in 1986, to elaborate the details of an extension of the exchange of data on laboratories to facilities that meet one or more of these criteria. Lists of relevant agents and equipment would have to be revised regularly.

Constraints on Development and Production for Protective Purposes

Protection and prophylaxis against biological weapons should not be prohibited, but constraints would be useful. Quantities produced or stockpiled for these purposes could be strictly limited. Open-air testing with real agents could be subjected to notification in advance, and creation of new or altered potential warfare agents for protective purposes should be prohibited.

Open All Declared Facilities for Routine Verification

Exchange of relevant data builds confidence, but also gives rise to questions and will not dispel doubts unless a regime exists for verifying the accuracy of the data. A verification regime is therefore needed.

However, the convention is almost unverifiable in its present form, because its scope depends on the intentions of a party. For example, a stockpile of a potential biological warfare agent might, after discovery, be described as a stockpile for several years of vaccine production and large-scale testing of protective measures. The credibility of such a declaration might be extremely low, but it would nevertheless be difficult to prove that it was false. Only if biological weapons were used, or were found in the operational stockpiles of standing armed forces, would a party not be able to find a justification.

This problem can be solved relatively easily if parties would agree to subject relevant items to obligatory declaration and quantitative constraints. This would provide the clear and objective criteria needed for an effective verification regime. A much more difficult problem is how an inspection team would verify the accuracy of the data provided. The experience of the negotiations on a chemical weapons ban has demonstrated that an effective verification regime can be developed only by trying out the proposed procedures in practice by means of trial inspections. This is the only way to find a realistic answer to the question whether verification of the biological weapons Convention is feasible.

A routine verification regime could possibly be modelled after the *ad hoc* inspection regime currently under negotiation for the projected chemical weapons convention. The essence of this regime is that a wide range of potentially relevant facilities would be declared and in principle opened for inspection, whereas the actual number of inspections will be small and will possibly be based on a combination of random selection and requests by parties.

Challenge Inspections

A routine verification regime cannot solve all doubts, in particular not about non-declared facilities. A challenge inspection regime will therefore be needed to complement a routine inspection regime. It would seem that the concept of "any time, anywhere inspection with no right of refusal", which was introduced in 1984 by (then Vice-) President Bush, is the best basis for an efficient regime. Commercial and other secrets could be protected by elaborate inspection procedures, shrouding of objects, selection of inspectors and rules for the protection of confidential information, but such rules should not form a pretext for excluding certain facilities or locations from inspection. Any exception to the "any time, anywhere" rule would open the possibility of keeping a stockpile or plant of biological weapons outside the scope of inspections and would therefore undermine the whole regime.

Conclusion

Since the biological weapons Convention came into force the fear that biological weapons might eventually be used has revived. The desire shown by some regimes to acquire biological weapons is probably the result of the growing interest in the production and use of weapons of mass destruction for terrorising external and internal adversaries,

and is facilitated by the development and worldwide spread of civil biotechnology that allows production of large quantities of biological agents within a short period of time.

A policy of non-proliferation might slow down this trend, but in the long run only an effective and world-wide ban on biological weapons has a chance of turning it. This will require more than adding a few confidence-building measures to the existing ban; it will rather require a structural rejuvenation of the biological weapons Convention through the addition of a verification protocol.

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EFFORTS TO ACHIEVE A COMPREHENSIVE BAN ON CHEMICAL AND BACTERIOLOGICAL (BIOLOGICAL) WEAPONS*

Early Initiatives

In its Very First Resolution (1 (I) of 24 January 1946). Early the General Assembly envisaged not only the elimination from Initiatives national armaments of atomic weapons, but also "of all other major weapons adaptable to mass destruction." Also, in resolution 41 (I) of 14 December 1946, the General Assembly made specific recommen-dations to ensure the elimination of "atomic and all other major weapons adaptable now or in the future to mass destruction." Following the establishment of the Commission for Conventional Armaments by the Security Council, the Commission, on 12 August 1948, adopted a resolution which said in part that "weapons of mass destruction should be denned to include . . . lethal chemical and biological weapons ...".

On a number of subsequent occasions, the United Nations showed its awareness of the threat posed by chemical and biological weapons and its concern about their deadly potency. Only in recent years,

* The living micro-organisms, or infective material derived from them, which can be used as agents, of warfare are variously referred to as "bacterial" or "bacteriological" or "biological" agents or weapons. In order to eliminate any possible ambiguity, the phrase "bacteriological (biological) weapons" has recently been used to comprehend all forms of biological warfare, in the *Report of the Secretary-General on Chemical and Bacteriological* (*Biological*) *Weapons and the Effects of their Possible Use*. In this, chapter, an effort has been made to use in every case the language of the document or proposal referred to. When not referring to any specific document or proposal, either "biological" or "bacteriological (biological)" has been used, as the case might be.

however, have the problems in this area moved close to the forefront of disarmament negotiations.[1]

In 1952, and for a year or two thereafter, some attention was given to this subject in connexion wit the adoption of General Assembly resolutions 502 (VI), 704 (VII) and 715 (VIII) on regulation, limitation and balanced reduction of all armed forces and all armaments..

A discussion also took place in the United Nations, in 1952 and the following year, on the question of the alleged use of bacterial warfare in China and Korea, by United Nations forces. These charges were denied by the United States and the other countries supplying forces to the United Nations Command in Korea. Reference has been made in this context to the adoption by the Disarmament Corn-mission, on 27 August 1952, of a plan of work, proposed by Chile, France and Turkey, which had as one of its main headings the "elimination of weapons or mass destruction, including bacterial weapons". This plan was adopted by 10 votes in favour, none against and 2 abstentions (USSR and Pakistan).[2] An earlier proposal by the USSR to consider "the question of violation of the prohibition of bacterial warfare, the question of the impermissibility of the use of bacterial weapons and the question of calling to account those who violate the prohibition of bacterial warfare" had been rejected by the Disarmament Commission by 9 votes to 1, with 2 abstentions (Chile and Pakistan).[3] Following the Commission's adoption of the plan of work, the United States submitted a working paper setting forth proposals "for the elimination of bacterial weapons in connexion with the elimination of all major weapons adaptable to mass destruction."[4]

The question of bacterial warfare was also on the agenda of the Security Council in the course of 1952, and of the seventh and eighth sessions of the General Assembly in 1952 and 1953.

In the Security Council, on 18 June 1952, a draft resolution was submitted by the Soviet Union under the item "Question of an appeal to States to accede to and ratify the Geneva Protocol of 1925 for the prohibition of the use of bacterial weapons". By this resolution, the Security Council would decide to appeal to all States, both Members of the United Nations and non-Member States, which had not yet ratified or acceded to the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925, to accede to and ratify the Protocol. The draft resolution was not adopted; there was 1 vote in favour (USSR) to none, with 10 abstentions.[5]

Meanwhile, on 20 June 1952, the United States had requested that the item "Question of a request for investigation of alleged bacterial warfare" be put on the agenda of the Security Council and had submitted a draft resolution whereby the Security Council would request the International Committee of the Red Cross to make an impartial investigation of the charges of alleged bacterial warfare. The draft resolution was not adopted; there were 9 votes in favour and 1 against (USSR). The United States then submitted a new draft resolution by which the Council would conclude, "from the refusal of those governments and authorities making the charges to permit impartial investigation, that these charges must be presumed to be without substance and false". On 9 July 1952, this draft resolution was also not adopted; there were 9 votes in favour, 1 against (USSR) and 1 abstention (Pakistan).[6]

At the seventh session of the General Assembly, on 23 April 1953, resolution 706 (VII) was adopted under the item "Question of impartial investigation of charges of use by United Nations Forces of bacteriological warfare", which had been placed on the agenda at the request of the United States. By the resolution, which was adopted by 52 votes to 5, with 3 abstentions, the General Assembly resolved that, after the President of the General Assembly had received an indication from all Governments and authorities concerned of their acceptance of the investigation, a Commission, composed of Brazil, Egypt, Pakistan, Sweden and Uruguay, would be set up and would carry out immediately an investigation of the charges that had been made.[7] At the eighth session, the President of the General Assembly reported that only three replies to resolution 706 (VII) had been received (United States, Republic of Korea and Japan).[8] A draft resolution submitted by the USSR, calling upon all States which had not acceded to or ratified the Geneva Protocol, to accede to or ratify it, was referred by the General Assembly to the Disarmament Commission for consideration (resolution 714 (VIII) of 3 November 1953).[9]

On 28 November 1953, the General Assembly adopted resolution 715 (VIII), which affirmed once more its desire to reach agreement as early as possible on a comprehensive and coordinated plan, under international control, for the regulation, limitation and reduction of all armed forces and all armaments and "for the elimination and prohibition of atomic, hydrogen, bacterial, chemical and all such other weapons of war and mass destruction". Another provision of this resolution led to the establishment of the Sub-Committee of the Disarmament Commission

which was composed of Canada, France, the USSR, the United Kingdom and the United States. In the disarmament negotiations conducted by the Sub-Committee, from 1954 to 1957, many references were made to the elimination of nuclear "and all other weapons of mass destruction", and provision for the control and the elimination of chemical and biological weapons was explicitly included in some of the proposals before the Sub-Committee, but no detailed discussion took place on the subject.

Among the few documents related to this subject, which were submitted to the Sub-Committee, there was a Statement by the Government of the Soviet Union of 21 December 1953, dealing both with the question of chemical and bacteriological weapons and the question of nuclear weapons. The Statement, referring to the Geneva Protocol of 1925, stressed the "positive significance" of that international agreement and suggested that the considerations which applied to it also applied fully to nuclear weapons.[10]

In a memorandum submitted by the United Kingdom on 21 May 1954, dealing with the categories of weapons and armed forces to be covered by a disarmament convention, it was stated that the weapons to be "prohibited", as against weapons to be "limited and reduced", should include chemical and biological weapons.[11] Later, in a new memorandum dealing with methods, objects and rights of inspection and supervision, dated 13 September 1955, the United Kingdom, *inter alia*, suggested that all States should supply the appropriate control organ with all the information it required on "plants making chemical and biological weapons", and the control organ would have the right to check that information in accordance with a wide range of procedures.[12] The following year, the United Kingdom together with France again suggested, in a working paper on control dated 3 May 1956, that the objects of control should include chemical and bacteriological armaments, all military establishments and installations which used or stored such armaments, and all documents necessary to verify expenditure relating to such armaments.[13]

Question of Chemical and Biological Weapons in the Context of General and Complete Disarmament

When the new item "General and complete disarmament" was included in the agenda of the fourteenth session of the General Assembly at the request of the Soviet Union, the question of chemical and biological weapons received further consideration. In the Declaration of the Soviet

Government on general and complete disarmament of 18 September 1959, it was stated that "stockpiles of chemical and bacterial weapons accumulated by some States, asphyxiating and poisonous substances, and cultures of lethal bacteria which are potential sources of severe epidemic disease will all be finally and irretrievably destroyed" as part of a programme for general and complete disarmament.[14] In the programme itself, as submitted by the Soviet Union to the General Assembly, provision was made in the third and final stage for the entry into force of a prohibition on the production, possession and storage of means of chemical and bacterial warfare.[15]

At the same session of the General Assembly, the United Kingdom submitted a Declaration embodying a comprehensive disarmament plan in three stages. A ban on the manufacture and use of nuclear, chemical, biological and other weapons of mass destruction was envisaged in the third stage of the plan.[16]

Provisions similar to the above were included in the basic working documents which were submitted by the two sides to the short-lived Conference of the Ten-Nation Committee on Disarmament in 1960.

At the fifteenth session of the General Assembly, Italy, the United Kingdom and the United States submitted a draft resolution,[17] on 14 October 1960, in which they reiterated that a programme of general and complete disarmament must achieve, among other things, the elimination of all weapons of mass destruction—nuclear, chemical and bacteriological — as well as the elimination of their delivery systems. In another draft resolution,[18] Burma, Cambodia, Ceylon, Ghana, India, Indonesia, Iraq, Morocco, Nepal, the UAR, Venezuela and Yugoslavia declared that one of the directives for an agreement on general and complete disarmament should be the total prohibition of the "manufacture, maintenance and use" of nuclear weapons and of bacteriological and chemical weapons, as well as the elimination of all equipment and facilities for "the delivery, the placement and the operation" of all mass destruction weapons. In a third draft resolution, on 14 October 1960, the United Kingdom called for an expert report on systems of inspection and control in relation to a number of disarmament measures, including the prevention of the manufacture of chemical and biological weapons. None of those draft resolutions was put to a vote.

In the "Joint statement of agreed principles for disarmament negotiations" of 1961, one of the principles agreed to by the Soviet Union and the United States, and accepted by the General Assembly

in resolution 1722 (XVI), was that a programme for general and complete disarmament should contain the necessary provisions, with respect to the military establishment of every nation, for the "elimination of all stockpiles of nuclear, chemical, bacteriological and other weapons of mass destruction, and the cessation of the production of such weapons". Efforts to ensure early agreement on partial measures of disarmament could also be undertaken.

The question of chemical and biological weapons was considered, first, in the context of general and complete disarmament. Both the "Draft treaty on general and complete disarmament under strict international control" submitted by the Soviet Union to the endc on 15 March 1962 (*see appendit* II), and the "Outline of basic provisions of a treaty on genera] and complete disarmament in a peaceful world" submitted by the United States in that same body on 18 April 1962 (see *appendix* III), contained provisions for the elimination of chemical and biological weapons. The Soviet document envisaged (article 1) "the prohibition and destruction of all stockpiles and the cessation of the production of all kinds of weapons of mass destruction, including atomic, hydrogen, chemical, biological and radiological weapons", as well as the destruction and cessation of the production of all means of delivering weapons of mass destruction to their targets. It further provided (article 23) that the cessation of production of chemical and biological weapons and their total elimination, together with the destruction of the means of delivery, would take place in the second stage of the three-stage disarmament plan. The United States document similarly stated that one of the "objectives" to be achieved was the "elimination of all stockpiles of nuclear, chemical, biological and other weapons of mass destruction and cessation of the production of such weapons", as well as the elimination of the means of delivery of weapons of mass destruction. This process would take place in stages II and III of the three-stage disarmament programme.

The joint working draft by the Soviet Union and the United States of Part I of a treaty on general and complete disarmament, submitted by the two Powers in the endc on 31 May 1962, setting forth the general objectives of the treaty, provided for the elimination of all stockpiles of nuclear, chemical, biological and other weapons of mass destruction, as well as the cessation of the production of such weapons; the elimination of all means of delivery of weapons of mass destruction and the cessation of the production of such means of delivery.

As indicated elsewhere in this volume, the discussion on the above drafts did not result in progress towards a comprehensive agreement.

Therefore, it was found necessary increasingly to resort to the step-by-step approach in disarmament negotiations, with the understanding that this approach would facilitate the achievement of the larger and more distant goal.

Consideration by the General Assembly 1966

At the twenty-first session of the General Assembly, in 1966, under the item "General and complete disarmament", Hungary submitted a draft resolution[20] whereby the Assembly would (1) demand strict and absolute compliance by all States with the principles and norms established by the Geneva Protocol of 17 June 1925, which prohibited the use of chemical and bacteriological weapons; (2) condemn any actions aimed at the use of chemical and bacteriological weapons; and (3) declare that the use of chemical and bacteriological weapons for the purpose of destroying human beings and the means of their existence constituted an international crime. In the debate on the draft resolution, Hungary, supported by several countries including the Soviet Union, protested the use of chemical weapons in Vietnam, but asserted that its proposal was not solely directed against United States activities in Vietnam, as the banning of chemical and bacteriological weapons Was also an integral part of the efforts to achieve general and complete disarmament.

Extensive discussion developed around this draft resolution. Some countries not only objected to the political implications of the draft resolution, but also affirmed that the proposed draft, instead of simply referring to the Geneva Protocol, tended to interpret that instrument. In the debate, the United States opposed any suggestion of having violated the Protocol, even though it is not a party to that agreement. Referring to the use of tear gas in Vietnam, the United States maintained that the Protocol did not apply to all gases and did not prohibit the use of tear gas, a chemical agent that Governments around the world commonly used as a riot-control agent. It also held that the use of herbicides was not contrary to international law. Some countries believed that a review of the Geneva Protocol should be undertaken by an appropriate body, in view of the technological advances made since 1925.

Canada, Italy, the United Kingdom and the United States introduced amendments[21] to the Hungarian proposal, which were later revised. Another set of amendments to the Hungarian draft resolution was introduced by Burundi, Guinea, Kenya, Mauritania, Somalia, Uganda,

the United Republic of Tanzania, and Upper Volta. By these eight-Power amendments,[22] the General Assembly would, among other things: (1) deplore the use of chemical and bacteriological weapons for the purpose of destroying human beings and the means of their existence; and (2) invite all States to accede to the Geneva Protocol. Hungary accepted the eight-Power amendments, and these eight offered to co-sponsor the Hungarian draft resolution as thus amended. Subsequently, the revised draft was also co-sponsored by Nigeria and Syria.

Canada, Italy, the United Kingdom and the United States then revised their amendments. By the revised amendments,[23] the General Assembly would call for strict observance by all States of the principles and objectives of the Geneva Protocol and condemn all actions contrary to those objectives. The new amendments would not affect the paragraph inviting all States to accede to the Geneva Protocol.

In the voting, the four-Power amendments were opposed by the co-sponsors of the original draft resolution but were adopted. On 5 December 1966, the draft resolution, as amended, was adopted by the General Assembly by 91 votes to 0, with 4 abstentions, as resolution 2162 B (XXI). It reads as follows:

The General Assembly,

Guided by the principles of the Charter of the United Nations and of international law,

Considering that weapons of mass destruction constitute a danger to all mankind and are incompatible with the accepted norms of civilisation,

Affirming that the strict observance of the rules of international law on the conduct of warfare is in the interest of maintaining these standards of civilisation,

Recalling that the Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, of 17 June 1925, has been signed and adopted and is recognised by many States,

Noting that the Conference of the Eighteen-Nation Committee on Disarmament has the task of seeking an agreement on the cessation of the development and production of chemical and bacteriological weapons and other weapons of mass destruction, and on the elimination of all such weapons from national arsenals, as railed for in the draft proposals on general and complete disarmament now before the Conference,

1. *Calls for* strict observance by all States of the principles and objectives of the Protocol for the Prohibition of the Use in War

of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925, and condemns all actions contrary to those objectives;

2. *Invites* all States to accede to the Geneva Protocol of 17 June 1925.

Consideration by the General Assembly 1967

At the twenty-second session of the General Assembly, in 1967, a brief discussion took place on two draft resolutions which were submitted respectively by Malta and Hungary. The main provisions of the draft resolution by Malta,[24] as subsequently revised to incorporate amendments by the Netherlands, were that the General Assembly would recommend that the endc consider as a matter of urgency the problems relating to the definition and use of chemical and biological weapons with a view to revision, updating or replacement of the Geneva Protocol, and would request the Secretary-General to prepare a concise report on the nature and probable effects of existing chemical and biological weapons and on the economic and health implications of the possible use of such weapons, with particular reference to States that were not in a position to establish comprehensive methods of protection. By the Hungarian draft resolution,[25] which was subsequently co-sponsored by Madagascar and Mali, the General Assembly would:

(1) demand strict and absolute compliance by all States with the principles and norms established by the Geneva Protocol;

(2) declare that the use of chemical and bacteriological weapons for the purpose of destroying human beings and the means of their existence constituted a crime against humanity; and (3) appeal to those States which had not done so, to accede to the Geneva Protocol. Neither of the two resolutions was pressed to a vote.

Eighteen-Nation Committee on Disarmament 1968

In the Soviet memorandum of 1 July 1968 on some urgent measures for stopping the arms race and for disarmament, it was suggested that high priority be given to the consideration of a number of measures, including the securing of observance by all States of the Geneva Protocol.

During the brief session of the endc in the summer of 1968. the Committee adopted a provisional agenda which, under the heading "non-nuclear measures", envisaged the discussion of the question of chemical and bacteriological warfare. A number of proposals on the

subject were also made during the session. Paragraph 26 of the report of the Conference,[26] dated 4 September 1968, contained the following:

Taking into account resolution 2162 B (XXI) of the General Assembly, the Committee considered the problem of chemical and bacteriological weapons. The United Kingdom proposed a study by the Secretary-General on the nature and possible effects of chemical weapons and on the implications of their use. Poland proposed a study by the Secretary-General on the effects of the use of both chemical and bacteriological weapons. The Committee agreed to recommend to the General Assembly that the Secretary-General appoint a group of experts to study the effects of the possible use of chemical and bacteriological means of warfare. Because of the importance of this matter, the hope was expressed that the report on this study would be referred at an early date to the General Assembly, the Security Council and the Committee. A number of other proposals were also made concerning chemical and bacterio logical weapons.

Other proposals on this question included a working paper on microbiological warfare by the United Kingdom[27] in which it was asserted that, for a number of reasons, the Geneva Protocol of 1925 was not an entirely satisfactory instrument for dealing with the question of chemical and microbiological warfare, and it was suggested that the problem could become more manageable by considering chemical and microbiological methods of warfare separately. "The use of microbiological methods of warfare has never been established, and these are generally regarded with even greater abhorrence than chemical methods", and on this basis, the United Kingdom proposed the early conclusion of a new convention for the prohibition of microbiological methods of warfare, which would "supplement but not supersede" the Geneva Protocol. This convention would proscribe the use for hostile purposes of microbiological agents causing death or disease by infection in man, other animals, or crops. The convention would include a ban on the production of microbiological agents "which was so worded as to take account of the fact that most of the microbiological agents that could be used in hostilities are also needed for peaceful purposes".

These views were not shared by all the members of the endc. The USSR, for instance, stated that the proposals contained in the working paper meant the reopening of issues which were long solved. In its view, the Geneva Protocol was not obsolete and its prohibitions covered not only the methods and agents of warfare which existed at the time the Protocol had been concluded, but also the new methods and agents of warfare that had emerged since then.

Observations and Proposal by the Secretary General

In the introduction to his annual report on the work of the Organisation for 1967-1968, the Secretary-General made the following proposal:[28]

While progress is being made in the field of nuclear disarmament, there is another aspect of the disarmament problem to which I feel too little attention has been devoted in recent years. The question of chemical and biological weapons has been over-shadowed by the question of nuclear weapons.... Nevertheless, these too are weapons of mass destruction regarded with universal horror. In some respects they may be even more dangerous than nuclear weapons because they do not require the enormous expenditure of. financial and scientific resources that are required for nuclear weapons. Almost all countries, including small ones and developing ones, may have access to these weapons, which can be manufactured quite cheaply, quickly and secretly in small laboratories or factories. This fact in itself also makes the problem of control and inspection much more difficult. Moreover, since the adoption, on 17 June 1925, of the Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases and of Bacteriological Methods of Warfare, there have been many scientific and technical developments and numerous improvements, it that is the right word, in chemical and biological weapons which have created new situations and new problems. On the one hand, there has been a great increase in the capability of these weapons to inflict unimaginable suffering, disease and death to ever larger numbers of humanity; on the other hand, there has been a growing tendency to use some chemical agents for civilian riot control and a dangerous trend to accept their use in some form in conventional warfare.

Two years ago, by resolution 2162 B (XXI), the General Assembly called for the strict observance by all States of the principles and objectives of the Geneva Protocol of 1925, condemned all actions contrary to those objectives and invited all States to accede to the Protocol. Once again I would like to add my voice to those of others in urging the early and complete implementation of this resolution. However, in my opinion, much more is needed.

During the twenty-three years of the existence of the United Nations, there has never been a thorough discussion in any United Nations organ of the problems posed by chemical and biological weapons, nor has there been a detailed study of them. Recently the matter has been receiving more attention and it is felt that the time has come to deal

more fully with the problem. I therefore welcome the recommendation of the Conference of the Eighteen-Nation Committee on Disarmament to the General Assembly that the Secretary-General appoint a group of experts to study the effects of the possible use of chemical and bacteriological means of warfare. I believe that such a study, which would explore and weigh the dangers of chemical and biological weapons, would prove to be a most useful undertaking at the present time. It could attract attention to an area of multiplying dangers and of diminishing public appreciation of them. It could also serve to clarify the issues in an area which has become increasingly complex. Certainly a wider and deeper understanding of the dangers posed by these weapons could be an important element in knowing how best to deal with them.

Considering by the Generla Assembly 1968

At the twenty-third session of the General Assembly, the debate on this question centered around a draft resolution submitted, under the item "Question of general and complete disarmament", by Canada, Denmark, Ghana, Hungary, India. Mexico, Poland, Sweden, the United Arab Republic and the-United Kingdom, later co-sponsored by several other countries and revised.[29] By the revised draft resolution, the Secretary General would be requested to prepare, with the assistance of qualified consultant experts, a report in accordance with his proposal as quoted above and with the recommendation of the endc contained in paragraph 26 of its report. The report; of the Secretary-General was to be transmitted to the ENDC, the Security Council and the General Assembly by 1 July 1969. and to the Governments of Member States in time to permit its consideration at the twenty-fourth session of the General Assembly. The draft resolution was adopted by the General Assembly on 20 December 1968 by a vote of 107 to 0. with 2 abstentions, as resolution 2454 A (XXIII). It reads as follows

The General Assembly.

Reaffirming the recommendations contained in its resolution 2162 B (XXI) of 5 December 1966 calling for strict observance by all States of the principles and objectives of the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925, condemning all actions contrary to those objectives and inviting all States to accede to that Protocol,

Considering that the possibility of the use of chemical and bacteriological weapons constitutes a serious threat to mankind,

Believing that the people of the world should be made aware of the consequences of the use of chemical and bacteriological weapons,

Having considered the report of the Conference of the Eighteen-Nation Committee on Disarmament which recommended that the Secretary-General should appoint a group of experts to study the effects of the possible use of such weapons,

Noting the interest in a report on various aspects of the problem of chemical, bacteriological and other biological weapons which has been expressed by many Governments and the welcome given to the recommendation of the Conference of the Eighteen-Nation Committee on Disaramament by the Secretary-General in the introduction to his annual report on the work of the Organisation submitted to the General Assembly at its twenty-third session,

Believing that such a study would provide a valuable contribution to the consideration by the Conference of the Eighteen-Nation Committee on Disarmament of the problems connected with chemical and bacteriological weapons,

Recalling the value of the report of the Secretary-General on the effects of the possible use of nuclear weapons,

1. *Requests* the Secretary-General to prepare a concise report in accordance with the proposal contained in paragraph 32 of the introduction to his annual report on the work of the Organisation submitted to the General Assembly at its twenty-third session and in accordance with the recommendation of the Conference of the Eighteen-Nation Committee on Disarmament contained in paragraph 26 of its report;
2. *Recommends* that the report should be based on accessible material and prepared with the assistance of qualified consultant experts appointed by the Secretary-General, taking into account the views expressed and the suggestions made during the discussion of this item at the twenty-third session of the General Assembly;
3. *Calls upon* Governments, national and international scientific Institutions and organisations to co-operate with the Secretary-General in the preparation of the report;
4. *Requests* that the report be transmitted to the Conference of the Eighteen-Nation Committee on Disarmament, the Security Council and the General Assembly at an early date, if possible by 1 July 1969, and to the Governments of Member States in time to permit its consideration at the twenty-fourth session of the General Assembly;

5. *Recommends* that Governments should give the report wide distribution in their respective languages, through various media of communication, so as to acquaint public opinion with its contents;
6. *Reiterates* its call for strict observance by all States of the principles and objectives of the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare signed at Geneva on 17 June 1925, and invites all States to accede to that Protocol.

Report of the Secretary-General 1969

It was the view of the Secretary-General that the consultant experts appointed by him, in accordance with resolution 2454 A (XXIII), acting in their personal capacities, should survey the entire subject from the scientific and technical viewpoint, so that the report could place chemical and bacteriological (biological) weapons in proper perspective. It was also the hope of the Secretary-General that an authoritative report could become the basis for political and legal action by the Members of the United Nations.

The group of consultant experts submitted to the Secretary-General a unanimous report embodying its findings and conclusions. The latter read as follows:

All weapons of war are destructive of human life, but chemical and bacteriological (biological) weapons stand in a class of their own as armaments which exercise their effects solely on living matter. The idea that bacteriological (biological) weapons could deliberately be used to spread disease generates a sense of horror. The fact that certain chemical and bacteriological (biological) agents are potentially unconfmed in their effects, both in space and time, and that their large-scale use could conceivably have deleterious and irreversible effects on the balance of nature adds to the sense of insecurity and tension which the existence of this class of weapons engenders. Considerations such as these set them into a category of their own in relation to the continuing arms race.

The present inquiry has shown that the potential for developing an armoury of chemical and bacteriological (biological) weapons has grown considerably in recent years, not only in terms of the number of agents but in their toxicity and in the diversity of their effects. At one extreme, chemical agents exist and are being developed for use in the control of civil disorders; and others have been developed in order to

increase the productivity of agriculture But, even though these substances may be less toxic than most other chemical agents, their ill-considered civil use or use for milttary purposes could turn out to be highly dangerous. At the other extreme, some potential chemical agents which could be used in weapons are among the moot lethal poisons known. In certain circumstances the area over which some of them might exercise their effects could be strictly confined geographically. In other conditions some chemical and bacteriological (biological) weapons might spread their effects well beyond the target zone. No one could predict how long the effects of certain agents, particularly bacteriological (biological) weapons, might endure and spread and what changes they could generate.

Moreover, chemical and bacteriological (biological) weapons are not a cheap substitute for other kinds of weapon. They represent an additional drain on the national resources of those countries by which they are developed, produced and stockpiled. The cost, of course, cannot be estimated with precision; this would depend on the potential of a country's industry. To some the cost might be tolerable; to others it would be crippling, particularly, as has already been shown, when account is taken of the resources which would have to be diverted to the development of testing and delivery systems. And no system of defence, even for the richest countries in the world, and whatever its cost, could be completely secure.

Because chemical and bacteriological (biological) weapons are unpredictable, in varying degree, either in the scale or duration of their effects, and because no certain defence can be planned against them, their universal elimination would not detract from any nation's security. Once any chemical or bacteriological (biological) weapon had been used in warfare, there would be a serious risk of escalation, both in the use of more dangerous weapons belonging to the same class and in the use of other weapons of mass destruction. In short, the development of a chemical or bacteriological (biological) armoury, and a defence, implies an economic burden without necessarily imparting any proportionate compensatory advantage to security. And, at the same time, it imposes a new and continuing threat to future international security.

The general conclusion of the report can thus be summed up in a few lines. Were these weapons ever to be used on a large scale in war, no one could predict how enduring the effects would be and how they would affect the structure of society and the environment in which we

live. This overriding danger would apply as much to the country which initiated the use of these weapons as to the one which had been attacked, regardless of what protective measures it might have taken in parallel with its development of an offensive capability. A particular danger also derives from the fact that any country could develop or acquire, in one way or another, a capability in this type of warfare, despite the fact that this could prove costly. The danger of the proliferation of this class of Weapons applies as much to the developing as it does to developed countries.

The momentum of the arms race would clearly decrease if the production of these weapons were effectively and unconditionally banned. Their use, which could cause an enormous loss of human life, has already been condemned and prohibited by international agreements, in particular the Geneva Protocol of 1925, and, more recently, in resolutions of the General Assembly of the United Nations. The prospects for general and complete disarmament under effective international control, and hence for peace throughout the world, would brighten significantly if the development, production and stockpiling of chemical and bacteriological (biological) agents intended for purposes of war were to end and if they were eliminated from all military arsenals.

If this were to happen, there would be a general lessening of international fear and tension. It is the hope of the authors that this report will contribute to public awareness of the profoundly dangerous results if these weapons were ever used and that an aroused public will demand and receive assurances that Governments are working for the earliest effective elimination of chemical and bacteriological (biological) weapons.

The Secretary-General decided to accept the unanimous report of the group of consultant experts in its entirety and transmitted it, on 1 July 1969, to the General Assembly, the Security Council, the endc and to the Governments of Member States, as the report called for by resolution 2454 A (XXIII). Its official title was *Chemical and Bacteriological* (*Biological*) *Weapons and the Effects of their Possible Use.*[30] In a foreword to the report, the Secretary-General urged that the Members of the United Nations undertake the following measures in the interests of enhancing the security of the peoples of the world:

1. To renew the appeal to all States to accede to the Geneva Protocol of 1925;
2. To make a clear affirmation that the prohibition contained in the Geneva Protocol applies to the use in war of all chemical,

bacteriological and biological agents (including tear gas and other harassing agents) which now exist or which may be developed in the future;

3. To call upon all countries to reach agreement to halt the development, production and stockpiling of all chemical and bacteriological (biological) agents for purposes of war and to achieve their effective elimination from the arsenal of weapons.

Eighteen-Nation Committee on Disarmament 1969

After the submission of the report of the Secretary-General, 1 July 1969, the endc gave considerable attention to the question of chemical and bacteriological (biological) weapons, and the following documents were submitted to the Committee: a draft convention for the prohibition of biological methods of warfare by the United Kingdom (*for text of the draft convention, sec appendix* XI) a working paper by Poland on the significance of the report of the Secretary-General; a draft General Assembly declaration by the twelve non-aligned members of the Committee on the scope of the prohibition of the use of chemical and biological methods of warfare; a working paper by Canada on a United Nations draft resolution designed to facilitate the consideration of the question of chemical and bacteriological (biological) weapons at the twenty-fourth session of the General Assembly. In addition, Japan proposed that the Committee should study, with the assistance of a group of scientists and technologists, the technical problems relating to the verification of the production and stockpiling of chemical and biological weapons, so that an agreement could be reached by the Committee as soon as possible on appropriate means of verification. Mongolia suggested that the General Assembly appeal to all Governments which had not yet done so to accede to or ratify the Geneva Protocol in the course of 1970, the forty-fifth anniversary of the signing of that document. Members of the Committee underlined the necessity of supporting the purposes and principles of the Geneva Protocol and the hope was expressed that additional countries would adhere to it in the near future. In its report to the General Assembly, which included the above mentioned documents,[31] the Committee stated that it intended to continue intensive work on the problem of chemical and bacteriological (biological) warfare.

Consideration by the General Assembly 1969

The General Assembly, at its twenty-fourth session, had before it three basic documents: (i) the report of the Secretary-General on chemical

and bacteriological (biological) weapons and the effects of their possible use; (ii) the report of the ccd; and (iii) a draft convention on the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons, and on the destruction of such weapons,[32] submitted by the Soviet Union, together with Bulgaria, the Byelorussian Soviet Socialist Republic, Czechoslovakia, Hungary, Mongolia, Poland, Romania and the Ukrainian Soviet Socialist Republic (*for text of the draft convention, see appendix* XII). These three documents were considered by the General Assembly as part of an agenda item entitled "Question of chemical and bacteriological (biological) weapons".

The report of the Secretary-General was widely welcomed as a highly authoritative, comprehensive and timely study, which increased the volume of knowledge of chemical and bacteriological (biological) weapons, thus facilitating the achievement of satisfactory solutions to the problem. The report was commended in a resolution, as indicated below.

The co-sponsors of the draft convention stressed the comprehensive approach of their document, as evidenced by the first three articles, which dealt with the basic prohibitions. Articles IV, V and VI contained provisions -relating to the problem of control, which, they stated, was extremely complex; international control in this case would be tantamount to "intrusion" of foreign personnel. It would be more practical and appropriate, they suggested, to leave control to the national Governments, which would see that no firm, no legal or physical person would produce chemical and bacteriological (biological) weapons, and the Government would be responsible for compliance with this provision. To strengthen this provision, article V contained an undertaking for States parties to the convention to take, as soon as possible, necessary legislative and administrative measures to prohibit the development, production and stockpiling of chemical and bacteriological (biological) weapons. Some of the co-sponsors also emphasised that the draft convention was fully in keeping with the third recommendation of the Secretary-General. The USSR stated, in particular, that a complete ban on chemical and bacteriological (biological) weapons should be linked with a further strengthening of the Geneva Protocol by the accession to it by States which had not yet done so and through strict compliance by all Governments with its objectives.

The draft convention won explicit support from several Members. Some Members, while welcoming the comprehensive approach of the draft, said that the control measures were not adequate.

The nine co-sponsors of the draft convention jointly submitted a draft resolution,[33] later co-sponsored by Cuba, which, *inter alia*, would request the ccd to conduct negotiations as a matter of urgency with a view to reaching agreement on the text of a convention on the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons and their destruction.

Hungary, Mongolia and Poland submitted another draft resolution,[34] which, among other things, would reaffirm resolution 2162 B (XXI) of 5 December 1966 and urge all States, which had not yet done so, to accede to or ratify the Geneva Protocol in the course of 1970, in commemoration of the forty-fifth anniversary of its signing and the twenty-fifth anniversary of the United Nations. It would also welcome the report of the Secretary-General and request the Secretary-General to publicize it in as many languages as desirable and practicable.

A third resolution,[35] by Australia, Canada, Ghana, the Netherlands, Nigeria and the United Kingdom, subsequently co-sponsored by Chad, Cyprus and Uganda, contained provisions very similar to those mentioned in connexion with the draft resolution by Hungary, Mongolia and Poland. In addition, this third draft resolution would, *inter alia*, request the ccd to give urgent consideration to reaching agreement on the prohibition of chemical and bacteriological (biological) methods of warfare, taking full account of the draft convention on the prohibition of biological methods of warfare submitted by the United Kingdom to the ccd, and the draft convention on the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons submitted to the General Assembly by the nine Powers.

At a later stage, these three draft resolutions were withdrawn in favour of a draft submitted by thirty-two delegations, including the sponsors of the three replaced drafts. This thirty-two-Power draft resolution, which embodied several of the provisions of the three earlier draft resolutions, was adopted by the General Assembly on 16 December 1969, by a vote of 120 to 0, with one abstention, as resolution 2603 B (XXIV). It reads as follows:

The General Assembly,

Recalling its resolution 2454 A (XXIII) of 20 December 1968,

Having considered the report of the Secretary-General, entitled *Chemical and Bacteriological* (*Biological*) *Weapons and the Effects of Their Possible Use*,

Noting the conclusions of the report of the Secretary-General and the recommendations contained in the foreword to the report,

Noting also the discussion of the report of the Secretary-General at the Conference of the Committee on Disarmament and during the twenty-fourth session of the General Assembly,

Mindful of the conclusion of the report that the prospects for general and complete disarmament under effective international control and hence for peace throughout the world would brighten significantly if the development, production and stockpiling of chemical and bacteriological (biological) agents intended for purposes of war were to end and if they were eliminated from all military arsenals,

Recognising the importance of the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925,

Conscious of the need to maintain inviolate the Geneva Proctocol and to ensure its universal applicability,

Emphasising the urgency of the need for achieving the earliest elimination of chemical and bacteriological (biological) weapons,

I

1. *Reaffirms* its resolution 2162 B (XXI) of 5 December 1966 and calls anew for strict observance by all States of the principles and objectives of the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925;
2. *Invites* all States which have not yet done so to accede to or ratify the Geneva Protocol in the course of 1970 in commemoration of the forty-fifth anniversary of its signing and the twenty-fifth anniversary of the United Nations;

II

1. *Welcomes* the report of the Secretary-General as an authoritative statement on chemical and bacteriological (biological) weapons and the effects of their possible use, and expresses its appreciation to the Secretary-General and to the consultant experts who assisted him;
2. *Requests* the Secretary-General to publicize the report in as many language's as is considered desirable and practicable, making use of the facilities of the United Nations Office of Public Information;
3. *Recommands* to all Governments the wide distribution of the report so as to acquaint public opinion with its contents, and

invites the specialised agencies, intergovernmental organisations and national and international non-governmental organisations to use their facilities to make the report widely known;

4. *Recommends* the report of the Secretary-General to the Conference of the Committee on Disarmament as a basis for its further consideration of the elimination of chemical and bacteriological (biological) weapons;

III

1. *Takes note* of the draft Convention on the Prohibition of the Development, Production and Stockpiling of Chemical and Bacteriological (Biological) Weapons and on the Destruction of such Weapons submitted to the General Assembly by the delegations of Bulgaria, the Byelorussian Soviet Socialist Republic, Czechoslovakia, Hungary, Mongolia, Poland, Romania, the Ukrainian Soviet Socialist Republic and the Union of Soviet Socialist Republics—and of the draft Convention for the Prohibition of Biological Methods of Warfare submitted to the Conference of the Committee on Disarmament by the United Kingdom of Great Britain and Northern Ireland, as well as other proposals:
2. *Requests* the Conference of the Committee on Disarmament to give urgent consideration to reaching agreement on the prohibitions and other measures referred to in the draft conventions mentioned in paragraph 1 above and other relevant proposals;
3. *Requests* the Conference of the Committee on Disarmament to submit a report on progress on all aspects of the problem of the elimination of chemical and bacteriological (biological) weapons to the General Assembly at its twenty-fifth session;
4. *Requests* the Secretary-General to transmit to the Conference of the Committee on Disarmament all documents and records of the First Committee relating to questions connected with the problem of chemical and bacteriological (biological) weapons.

At its twenty-fourth session, the General Assembly also dealt with another aspect of the question of chemical and bacteriological (biological) weapons which was reflected in the second of the three recommendations of the Secretary-General, as mentioned above. The twelve non-aligned members of the ccd submitted to the General Assembly a draft resolution,[36] subsequently co-sponsored by nine additional countries,

by which the Assembly would declare as contrary to the generally recognised rules of international law, as embodied in the Geneva Protocol, the use in international armed conflicts of (a) any chemical agents of warfare, which might be employed because of their direct toxic effects on man, animals or plants; (b) any biological agents of warfare, which were intended to cause disease or death in man, animals or plants, and which depended for their effects on their ability to multiply in the person, animal or plant attacked.

In the debate on this draft resolution, Sweden stated that there existed a clear prohibition of the use of all chemical and biological means of warfare, notably, in the Geneva Protocol, and that this prohibition had gradually come to be considered as a generally recognised rule of customary international law, binding *erga omnes.* If queries as to the character of the prohibition were not authoritatively answered by an affirmation of its comprehensive nature, there was a risk that limited interpretations might spread and gradually have a destructive influence. In recent years, the view had been officially expressed that the use in warfare of tear gas and other harassing agents and also of herbicides might not be covered by the existing prohibition. However, it was perfectly clear from the records of the 1925 Conference at which the Geneva Protocol had been negotiated, and even more so from those of the Disarmament Conference of 1932 and 1933 and its Preparatory Commission, that the parties to the Protocol, as well as the non-parties, were convinced that the prohibition was comprehensive. It seemed appropriate, therefore, that the world community, as represented by the General Assembly, should take the step of clarifying and consolidating the existing prohibitionary rules. Sweden also stated that the prepared draft declaration did not interpret the Geneva Protocol *per se,* but rather expressed the generally recognised rules of international law which had emerged in this matter. It was entirely proper for the General Assembly to affirm and to seek to clarify those rules. The co-sponsors hoped that the declaration would become a meaningful manifestation of international opinion as to the universality and comprehensive nature of the prohibition of use of chemical and biological agents of warfare. These views were shared by many Members.

Some States expressed doubts about the wisdom of making the proposed declaration. It raised, they felt, complex legal problems, such as the existence and the scope of customary rules and their relation to contractual rules of international law. The declaratory character of its operative part, moreover, might be considered by prospective signatories

as providing an extensive interpretation of the Geneva Protocol. Australia believed that the General Assembly should be cautious about interpreting the Geneva Protocol and should not interpret it so as to include such agents as tear gas, herbicides and defoliants, which, it said, were not banned by customary international law and were non-lethal agents, possibly more humane than some conventional weapons. The United States felt that it was inappropriate for the General Assembly to interpret the Geneva Protocol or any treaty by a majority vote and held that such actions tended to undermine international law. Since 1925, it said, States had recognised the ambiguity of the Geneva Protocol, as to whether it prohibited the use of riot-control agents. The United States for its part had concluded from the history of international negotiations up to and including the Geneva Protocol that such agents were not covered by the Protocol Chemical herbicides, moreover, which were unknown in 1925, could not be included.

The twenty-one-Power declaratory resolution was adopted by the General Assembly on 16 December 1969, by a vote of 80 to 3 (Australia, Portugal and the United States), with 36 abstentions, as resolution 2603 A (XXIV). It reads as follows:

> *The General Assembly,*
>
> *Considering* that chemical and biological methods of warfare have always been viewed with horror and been justly condemned by the international community,
>
> *Considering* that these methods of warfare are inherently reprehensible because their effects are often uncontrollable and unpredictable and may be injurious without distinction to combatants and non-combatants, and because any use would entail a serious risk of escalation,
>
> *Recalling* that successive international instruments have prohibited or sought to prevent the use of such methods of warfare,
>
> *Noting specifically* in this regard that:
>
> (a) The majority of States then in existence adhered to the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925,
>
> (b) Since then, further States have become Parties to that Protocol,
>
> (c) Still other States have declared that they will abide by its principles and objectives,
>
> (d) These principles and objectives have commanded broad respect in the practice of States,

(e) The General Assembly, without any dissenting vote, has called for the strict observance by all States of the principles and objectives of the Geneva Protocol,

Recognising therefore, in the light of all the above circumstances, that the Geneva Protocol embodies the generally recognised rules of international law prohibiting the use in international armed conflicts of all biological and chemical methods of warfare, regardless of any technical developments,

Mindful of the report of the Secretary-General, prepared with the assistance of the Group of Consultant Experts, appointed by him under General Assembly resolution 2454 A (XXIII) of 20 December 1968, and entitled *Chemical and Bacteriological* (*Biological*) *Weapons and the Effects of Their Possible Use,*

Considering that this report and the foreword to it by the Secretary-General add further urgency for an affirmation of these rules and for dispelling, for the future, any uncertainty as to their scope and, by such affirmation, to assure the effectiveness of the rules and to enable all States to demonstrate their determination to comply with them, rules and to enable all States to demonstrate their determination to comply with them,

Declares as contrary to the generally recognised rules of international law, as embodied in the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925, the use in international armed conflict of:

(a) Any chemical agents of warfare—chemical substances, whether gaseous, liquid or solid—which might be employed because of their direct toxic effects on man, animals or plants:

(b) Any biological agents of warfare—living organisms, whatever their nature, or infective material derived from them—which are intended to cause disease or death in man, animals or plants, and which depend for their effects on their ability to multiply in the person, animal or plant attacked.

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30. Document A/7575 and S/9292.
31. Document DC/232, para. 45.
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ENVIRONMENTAL HAZARDS IN GENERAL

Environmental Hazards in General

There is a growing awareness of the adverse effects ordinary human activity has on the environment. The recent war in the Persian Gulf in which hundreds of Kuwaiti oil wells were ignited and millions of gallons of oil were released into the Gulf has highlighted the ways in which military activity may be particularly deleterious as far as the environment is concerned. The various kinds of environmental destruction can be organised into the following six categories:

Category A: Destruction of the Human Environment

The intentional large-scale destruction of developed areas to deprive the local population of shelter and expose it to the elements could be labelled environmental destruction. However, such action is generally not thought to be prohibited under international law. The term "environment" is usually restricted to the natural environment, including plant and animal life. Activities which present possible "grey" areas might be the destruction of artificial water- or sewage-treating facilities, resulting in depriving populations of water and the spread of disease.

Category B: Destruction of the Cultivated Environment

People are dependent on agriculture to sustain life. The destruction of crops or of arable fields, or the destruction of domestic animals or their pastures, can be life-threatening in areas with poor communications or areas where the population lacks the economic capacity to obtain food elsewhere. Peasants have often suffered from roving armies which not only seized food and animals, but also trampled crops. When such destruction occurs on a broad scale, it may be termed "environmental".

Category C: Destruction of the Natural Environment

People are dependent on natural resources supplied by forestry, fisheries or the like for economic well-being and sometimes even for

survival. If forests and lakes are destroyed, or if their output decreases because of environmental degradation, people will suffer.

Category D: Destruction of the Natural Environment of Non-Economic Value

There is growing concern about the progressive reduction of the size of the natural wilderness, as this is considered a loss to the world as a whole. There is good reason to fear that the ability of the global ecosystem to sustain human life could in the long run be drastically reduced.

Category E: Environmental Degradation

Ever-increasing human activity may lead to general environmental degradation of regional and even global dimensions, unless sufficiently powerful countermeasures are implemented. Acid rain is causing widespread damage in forests and in the oceans. Fluctuations in the ozone layer over the poles, apparently resulting from industrial emissions, could give rise to serious problems in the next century. There is even reason to suspect that we may be facing a global climate change because of emissions of greenhouse gases. Powerful fires or explosions (such as nuclear explosions) can whirl up dust and harmful substances, causing regional chilling, acidic precipitation or even the destruction of parts of the ozone layer.

Category F: Environmental Manipulation as a Tool in Warfare

It is conceivable that environmental forces could be manipulated with hostile intent. For example, weather patterns could be changed in order to induce drought. Such manipulation could have various effects, from destruction of the human environment to general regional or even global environmental degradation.

The focus of this study will be on *legal instruments as they relate to* environmental destruction of the types indicated in categories C to F—mother words, destruction of the natural environment, affecting people directly or indirectly. Environmental destruction through the use of noxious gases will not be covered, nor will nuclear warfare be dealt with in this connection, though it is clear that nuclear, biological or chemical warfare would harm both the human and the natural environment seriously.

Legal Provisions Concerning Environmental Destruction in War

The Hague Convention IV

In its annex (regulations respecting the Laws and Customs of War on Land), the Hague Convention IV, of 1907, gives rules which are

considered to be customary law today. According to article 23 of the Regulations it is especially forbidden to destroy or seize the enemy's property, unless such destruction or seizure be imperatively demanded by the necessities of war.

The Geneva Convention IV

The Geneva Convention IV, relative to the Protection of Civilian Persons in Time of War, of 12 August 1949, is binding on virtually all independent States in the world. With its accession to the Convention on 10 January 1991, Bhutan became the 164th and latest adherent.

According to article 53 of the Convention, "any destruction by the Occupying Power of real or personal property belonging individually or collectively to private persons, or to the State, or to other public authorities, or to social or cooperative organisations, is prohibited, except where such destruction is rendered absolutely necessary by military operations".

Article 52 of Protocol I Additional to the Geneva Convention of 1949

As of 30 April 1991, Protocol I of 1977, Additional to the Geneva Conventions of 12 August 1949, had been ratified or acceded to by 102 States. A steady flow of ratifications and accessions gives reason to believe that the Protocol will achieve more or less universal acceptance, although some major Powers have strong objections to certain clauses of the Protocol. Many of the provisions, however, are of a general nature, more or less confirming customary law.

Article 52 confirms an old customary rule protecting civilian objects in general, limiting attacks to "military objectives". The point of this rule and other related rules is that there shall be no destruction unless it has a military purpose, giving a military advantage that outweighs the concern for collateral damage to civilian objects—referred to as the principle of proportionality.

Article 54 of Protocol I

Article 54 of Protocol I prohibits starvation of civilians as a method of warfare. According to paragraph 2 of the article, it is prohibited to attack, destroy, remove or render useless objects indispensable to the survival of the civilian population for the specific purpose of denying them for their sustenance value to the civilian population. This prohibition does not apply to a party defending its own national territory when imperative military necessity requires derogation from the prohibition in paragraph 2.

Article 35, Paragraph 3, and Article 55 of Protocol I

According to article 35, paragraph 3, of Protocol I, it is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment.

According to article 55, paragraph 1, care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population. Paragraph 2 states that attacks against the natural environment by way of reprisals are prohibited. According to the commentary by the International Committee of the Red Cross to the Protocols, "long-term" is interpreted as a matter of decades.

Article 56 of Protocol I

Article 56 of Protocol I protects works and installations containing dangerous forces. These, namely dams, dykes and nuclear electrical generating stations, shall not be made the object of attack, if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population. The list of protected objects is exhaustive, and oil-producing facilities were considered, but deliberately deleted when the text was drafted, because of the obvious military value of such installations, at least in a war of some duration.

ENMOD Convention of 1977

The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (the ENMOD Convention) has been ratified by more than 50 States, including some major States, such as the United Kingdom, the United States and the former USSR.

According to article I, each State party to the Convention undertakes not to engage in military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party.

The prohibition refers to the causing of earthquakes and tsunamis, an upset in the ecological balance of a region, changes in weather patterns, changes in climate patterns, changes in ocean currents, changes in the state of the ozone layer, and changes in the state of the ionosphere, as illustrative examples.

In the negotiation of the Convention it was understood that the terms "widespread", "long-lasting" and "severe" were to be interpreted as follows:

(a) "widespread": encompassing an area on the scale of several hundred square kilometres;

(b) "long-lasting": lasting for a period of months, or approximately a season;

(c) "severe": involving serious or significant disruption or harm to human life, natural and economic resources or other assets.

It should be noted that the terms are not necessarily interpreted in the same way as the corresponding terms in Protocol I, articles 35 and 55. The interpretation of "long-term" in Protocol I is definitely different from that of "long-lasting" in the ENMOD Convention. It should also be noted that the above-mentioned conditions are cumulative in Protocol I, and alternative in the ENMOD Convention.

Martens Clause

In the preamble to the 1907 Hague Convention IV are found some general principles, including the so-called Martens clause (suggested by the Russian Czar's plenipotentionary Professor Martens), which says:

> "Until a more complete code of the laws of war has been issued, the High Contracting Parties deem it expedient to declare that, in cases not included in the Regulations adopted by them, the inhabitants and the belligerents remain under the protection and the rule of the principles of the law of nations, as they result from the usages established among civilised peoples, from the laws of humanity, and the dictates of the public conscience."

A corresponding formulation is found in Protocol I, article 1, paragraph 2. In so far as environmental destruction may not be specifically covered by the above-mentioned rules, this clause seems highly relevant.

The author has been advised informally that in State practice there is an obligation, corresponding to the Martens principle, to avoid environmental destruction in military operations unless military necessity demands and the rule of proportionality permits. Customary law is, however, by nature crude and does not supply rules of procedure or practical measures of implementation.

General International Law on Protection of the Environment

There are a great number of internationally binding rules on pollution, ranging from general prohibitions against dumping at sea

to local or regional agreements concerning such matters as transboundary pollution. These conventions or tractates can be more or less specific as regards, for example, permitted emissions or levels of pollution, procedural rules and assistance in efforts to combat abuses.

It is somewhat uncertain to what extent such rules still apply in wartime. A reasonable solution might be that general prohibitions and emission limits still apply between belligerent adversaries, but will yield to military necessity balanced by the principle of proportionality. The law of neutrality in general acknowledges the right of belligerents to take measures which can be very inconvenient to neutrals, to say the least. For such "inconveniences" of an environmental nature, there should be narrow margins for what neutrals will have to suffer, at least without compensation. There should also be narrow margins for the right of any belligerent to strain the common environment of the atmosphere, the high seas, the polar caps, or possibly even outer space even when no neutral country is specifically affected.

When it comes to practical cooperation, it can hardly be expected that belligerent adversaries would continue to make cooperative efforts between themselves, or meet their obligations according to some agreement of mutual assistance in pollution disasters. On the other hand, a belligerent should respect and protect an adversary's pollution-combating activities, and should not regard assistance from neutrals in such matters as a hostile act. Anti-pollution activities deserve protection analogous to humanitarian relief and civil-defence activities.

Question of the Adequacy of Legal Provisions

The question whether the existing legal aspects are adequate may be discussed from several viewpoints. One of the aspects in question concerns the substance of the basic rules; another whether there is a need for practical arrangements to facilitate adherence for those who honour the rules; and a third is enforcement against those that do not. The question could be discussed in detail. In this connection I can give only some general indications, leaving it to others to analyse more precisely what is covered by the various rules.

Rules of Substance

The Hague Convention IV, the Geneva Convention IV and Protocol I, articles 52, 54 and 56, cover in general environmental destruction of categories A and B. Protocol I, in its article 35, paragraph 3, and article 55, gives some protection against destruction in categories C, D and E, but with a very high threshold. The ENMOD Convention covers the

cases in category F, but it is questionable whether the coverage is adequate.

It seems that customary law is developing beyond the requirements set forth in Protocol I, article 35, paragraph 3, and article 55, as these do not prohibit acts harmful to the environment unless the effects are rather drastic. The content of the articles mentioned might be developed through a renewed understanding of the criteria "widespread, long-term and severe". The wording of the articles is, however, not very accommodating, since it does not cover considerations of military necessity, which will clearly be needed if the general threshold of the prohibition is to be lowered substantially.

Protection of environmental values on a belligerent's own territory raises fundamental questions about ownership and responsibility for those values. A conservative view is that environmental values within the territory of a sovereign State belong to this State and are at its free disposal as long as no other State is directly affected. A more radical approach might be that there are some values which belong to mankind as a whole—for instance, species of life threatened with extinction. A duty to protect such values, whether on the grounds of tractate or customary law, should be honoured also in wartime, even if this is contrary to national defence interests at the time.

The release of oil into the Persian Gulf and the setting on fire of the Kuwaiti oil wells have been seen as important examples of environmental warfare calling for new international legislation or at least the examination of existing international law. From a legal viewpoint, however, these events are not as interesting as they seem, because they involve destruction of the oil itself as a valuable substance. Iraqi liability towards Kuwait is therefore covered by well-established rules in the Hague and Geneva Conventions.

There could be a question, however, whether Iraq has some responsibility towards other countries in the area as a result of regional environmental degradation of the sea and air. There could also be a question whether the burning of the oil is covered by the ENMOD Convention. These questions would have come into sharper focus if the Iraqis had released and burned their own oil for some real or alleged military purpose.

Rules for Practical Arrangements

With a view to facilitating the protection of certain objects, installations or areas there are several rules in international humanitarian

law concerning safety zones, non-defended localities, protective signs and the like. For objects or areas of specific ecological value, analogous arrangements might be needed. In the absence of rules laid down by a convention, this cannot be done without specific agreement in each case—which is not always very easy to obtain.

Rules of Enforcement

As regards criminal prosecution, the need for the inclusion of specific rules in a convention addressing criminal responsibility seems to vary according to the legal system in question.

From the point of view of Norway, the salient points are whether the act to be prosecuted is against the laws and customs of war, and whether there is an internal penal provision which applies. A specific rule of criminal responsibility in a convention is neither necessary nor sufficient, but it can be useful in obligating the parties to the convention to enact relevant legislation. In some cases it can also be necessary in providing competence *vis-d-vis* rules in international law regarding limits of national jurisdiction.

Liability to make economic compensation presents problems of its own. It seems to me that these problems lie, not so much in the rules of liability as such, as in the rules about how such liability is to be enforced—in other words, the problems are not specific to liability for environmental damage as such. There are, however, serious difficulties in determining the economic loss to be compensated in environmental matters, especially when it comes to destruction of natural environment of non-economic value and general environmental degradation. How does one, for instance, determine the value of a species which has been made extinct, and who is to receive the compensation? These are general problems, not specific to environmental destruction in war, nor even to environmental destruction with international aspects, and shall, therefore, not be dealt with further here.

Legal Initiatives

Falk's Proposal Concerning a Convention on the Crime of Ecocide

Richard A. Falk, of Princeton University, has proposed a convention on the crime of ecocide. The definition of ecocide includes any of a number of acts committed with intent to disrupt or destroy, in whole or in part, a human ecosystem; including use of nuclear, biological or chemical or other weapons of mass destruction, chemical herbicides to defoliate and destroy natural forests for military purposes, and extreme

use of bombs and artillery. The proposal includes rules for criminal responsibility and investigation by a commission established by the United Nations.

Plant's Elements of a New Convention on the Protection of the Environment in Time of Armed Conflict

Glen Plant, Director of the London School of Economics Centre for Environmental Law and Policy, proposes a convention on the protection of the environment in time of armed conflict. The proposal has been developed in connection with a conference held in London on 3 June 1991, and the proposer's participation at the Meeting on the Use of the Environment as a Tool of Conventional Warfare sponsored by Canada and the United Nations and held at Ottawa on 10 and 12 July 1991. The proposal is mainly a discussion paper, setting forth a structure, but leaving options as to the degree of protection that should be given. It addresses environmental destruction in a broad sense, including a section on the use of mines, booby traps and other devices. It also addresses rules of liability to make restitution, pursuant to criminal prosecution, organisation of protection, and relief in favour of the environment.

Goldblat's Suggestion on Procedures Based on Existing Treaties

Jozef Goldblat, Geneva Graduate Institute of International Studies, has some proposals for further procedures. He points out a number of deficiencies in current treaty law; notes that amending existing agreements carries a risk that their very survival will be jeopardised; but suggests that, on the other hand, drafting and negotiating a new treaty would be a lengthy procedure, the result of which would be unpredictable. His suggestion is that the adherence to existing treaties should be expanded so as to make them quasi-universal. Parties to Protocol I of 1977 to the Geneva Convention IV could conclude "further agreements" to ensure additional protection of objects containing dangerous forces, and areas requiring special protection for environmental reasons could be declared as non-defended localities (Protocol I, art. 59).

The parties to the ENMOD Convention could agree, at their review conference in September 1992, to reduce the "widespread, long-lasting or severe" threshold to zero, formally by changing the definition without changing the wording of the Convention as such.

Additional protocols could be proposed to the 1980 Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have

Indiscriminate Effects— known as the inhumane weapons Convention— to cover weapons with environmental effects.

Other Initiatives

Proposals have been made both to the United Nations General Assembly and to the International Red Cross and Red Crescent Conference for wider adherence to the relevant international conventions and for further clarification of the scope of Protocol I and the ENMOD Convention.

The Author's Suggestions for the Future

It seems to me that it is hardly possible to achieve institutionalised protection against environmental destruction in the form of practical arrangements, protected zones, protective signs, protecting organisation and the like without new treaty provisions. There is also a need for rules concerning enforcement.

There is good reason to believe that a clarification of the scope of existing treaty law will reveal lacunae which will need more precise remedies than emerging customary law can provide.

Changing old treaties or making a new convention, however, is a risky project, one which should not be embarked upon unless the prospects of success are good. In the meantime, as this question matures, one might work along the lines proposed by Jozef Goldblat.

One should be conservative as regards the degree of protection, not forgetting that war is a life-and-death business for those concerned, and not a game for which new rules can be written at one's discretion. In war, as opposed to a game, it is not only a victory in conformity with the rules which is a real victory. The law of war can by its nature regulate only those phenomena which are not crucial to the outcome of the battle. It is my general view that, in order to be viable in the long run and in order to survive the stresses of real life, the law of war must take this into consideration.

This means that complete protection of the environment will be unattainable. Situations can, and probably will, arise where considerations of military necessity will override important environmental concerns. As long as war is not effectively outlawed, we will have to live with this.

INTERNATIONAL LAW APPLICABLE TO THE GULF WAR

Introduction: Injuries to the Environment in the Gulf War

Every war inflicts damage on the environment. For a conflict of relatively limited duration and geographical scope, the Gulf War seems

to have been more destructive in this respect than most, in part because of the unprecedentedly massive use of certain conventional weapons, but mostly because of the following apparently deliberately anti-environmental actions by Iraqi forces:

- Spilling oil into the Persian Gulf, beginning on 21 January 1991 from the Sea Island Terminal near Kuwait City and again on about 31 January from the off-shore terminal at Mina Al-Bakr—though the Iraqis claim that these spills were the result of allied bombing, it seems more likely that they were deliberately caused by Iraqi forces;
- Sabotaging and torching Kuwaiti oil wells, beginning about 12 February and continuing throughout the month, until over 600 wells were on fire and an additional 200 were gushing oil;
- Laying massive numbers of non-self-destructing mines and booby-traps, mostly in and around Kuwait, including in the oil fields, and to some extent off the coast of Kuwait.

It should, however, be recognised that the massive allied bombing, and especially the selection of certain targets (namely those whose destruction could lead to the release of dangerous forces)—even if not constituting deliberate attacks on nature—also gave rise to environmental concerns and are subject to testing against the legal principles discussed below.

The question addressed in this study is whether international law is at present adequate to prohibit the several environmental excesses committed during the recent Gulf War, in particular by the Iraqi forces. The answer must be sought first of all in recent international norms designed to protect the environment in warfare; secondly, in well-established humanitarian rules relating to the conduct of war; and thirdly, in international regimes which protect the environment in general but which do not refer to military operations. Lastly, the possible civil and criminal liability of those who perpetrate outrages against the environment in the course of warfare is considered.

In respect of each of these matters, account must be taken of international law both as expressed in treaties, the so-called "conventional" law that is binding only on the parties to the respective agreements, and as the more generally applicable "customary" law, which reflects the way in which States actually behave because they understand that such behaviouris required by that law.

Many of the outrages against the environment that occurred during the Gulf War appear to have violated obligations under the general

laws of war, particularly those designed to protect property; most of the substantively pertinent environmental rules, on the other hand, were not binding on the parties concerned. It would therefore seem desirable to strengthen the existing environmental norms and to clarify their applicability to military actions, to encourage wider participation in some existing treaties, and possibly also to negotiate suitable additional specialised international agreements.

International Legal Instruments Relating to the Environment and Warfare

Explicit concern for protection of the environment from the ravages of warfare has only a relatively brief history, following on the internationalisation of environmental concerns at the 1972 United Nations Conference on the Human Environment held in Stockholm, and the end of the war in Vietnam. During the late 1970s and early 1980s a number of instruments were adopted which either addressed this concern exclusively or included it in instruments primarily devoted to humanitarian law. To the extent that these instruments are multilateral treaties, they have (as indicated below) not yet attracted sufficiently wide participation; to the extent that they are merely declarations of international organs they do not of course inherently have binding force, and their recent vintage makes it difficult to conclude that they are as yet expressive of customary international law—the creation of which requires relatively extensive State practice.

The ENMOD Convention

The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, the so-called ENMOD Convention, was negotiated in the Conference of the Committee on Disarmament (CCD) and adopted by the United Nations General Assembly on 10 December 1976, but as of 31 December 1991, had attracted only 55 parties, including the United States of America, the Soviet Union and the United Kingdom, but not China, France or Iraq (which signed, but has not yet ratified it). Its principal provisions are the following:

> *"The States Parties to this Convention,*
>
> "....
>
> *"Realising* that the use of environmental modification techniques for peaceful purposes could improve the interrelationship of man and nature and contribute to the preservation and improvement of the environment for the benefit of present and future generations,

> *"Recognising*, however, that military or any other hostile use of such techniques could have effects extremely harmful to human welfare,
>
> "....
>
> *"Article I*
>
> "1. Each State Party to this Convention undertakes not to engage in military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party.
>
> "....
>
> *"Article II*
>
> "As used in article I, the term "environmental modification techniques" refers to any technique for changing—through the deliberate manipulation of natural processes—the dynamics, composition or structure of the earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space."

In addition, ENMOD contains procedural provisions for consultations among the parties, including consultations with the assistance of a committee of experts, as well as for periodic review conferences of the parties. These mechanisms are all designed to operate under the aegis and with the assistance of the United Nations.

Aside from the fact that Iraq is not a party to ENMOD, the difficulty in bringing the terms of the Convention to bear on the actions of that State is that it is not clear that its forces were engaged in using "environmental modification techniques", that is, that they intended to modify the environment (for example, by preventing the use of the Gulf as a source of drinking-water, or by creating clouds of smoke) rather than merely acting destructively to deprive the enemy of assets. If Iraq were a party to the treaty, it might be possible to resolve these questions by procedures foreseen by that instrument.

Additional Protocol I to the 1949 Geneva Conventions (Relating to the Victims of Armed Conflicts)

This Protocol, adopted in 1977 after extensive negotiations under the aegis of the International Committee of the Red Cross (ICRC), is basically of a humanitarian nature, as are the four 1949 treaties that it supplements. Nevertheless, reflecting the spirit of the times, it also sets out a number of explicitly environmental provisions, which constitute at present the strongest expression of an obligation to protect nature in warfare:

"Part III—Methods and Means of Warfare Combatant and Prisoner-of-War Status

"Section I—Methods and Means of Warfare

"Article 35—Basic rules

"....

"3. It is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment.

"....

"Chapter III—Civilian objects

"Article 55—Protection of the natural environment

"1. Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.

"2. Attacks against the natural environment by way of reprisals are prohibited."

Unfortunately, the most significant combatants in the Gulf War, including the United States, France and the United Kingdom, as well as Iraq, have not yet become parties to Protocol I. Thus that treaty was at best of scant relevance to that war.

Parties to Protocol I are plainly precluded by the above-quoted provisions from inflicting the type of damage on the environment that Iraq's spillage and burning of oil constituted.

World Charter for Nature

In 1982, the United Nations General Assembly adopted, by an all but unanimous vote, the World Charter for Nature, which contains the following two relevant provisions:

"5. Nature shall be secured against degradation caused by warfare or other hostile activities.

"20. Military activities damaging to nature shall be avoided."

Though not a formally binding instrument, the World Charter, because of its extensive and careful negotiation and the large support it received on adoption, does constitute an instrument of which account must be taken in any description of international environmental law.

International Legal Instruments Relating to the Laws of War

The humanitarian laws of war are of much older vintage than those for protection of the environment. In a sense their codification began in the middle of the nineteenth century, gained momentum at

the 1899 and 1907 Hague Conferences, from which a number of treaties emerged that are still in force, and continued with the adoption of the four Geneva Conventions in 1949 and then in 1977 with the adoption of Protocols I and II to the latter instruments. The 1949 Conventions especially have received very wide participation (166 States as of 31 December 1991), and together with the Hague Conventions (to the extent that these have not been superseded) are also considered as expressing the binding customary law on the subjects covered. As indicated above, it is harder to argue that the 1977 Protocols, because of their more recent adoption and lesser participation (respectively 99 and 89 States, which do not include some very significant ones) as yet constitute customary law.

General Principles

1907 Hague Convention IV Respecting the Laws and Customs of War on Land

The "Martens Clause", set out in the preamble to the 1907 Hague Convention IV, states:

> "Until a more complete code of the laws of war has been issued, the High Contracting Parties deem it expedient to declare that, in cases not included in the Regulations adopted by them, the inhabitants and the belligerents remain under the protection and the rule of the principles of the law of nations, as they result from the usages established among civilised peoples, from the laws of humanity, and the dictates of the public conscience."

The current "dictates of the public conscience" certainly do not allow the type of environmental destruction in which Iraq engaged in respect of oil in the course, and especially at the very end, of the recent Gulf War.

Regulations Attached to the 1899 and 1907 Hague Conventions and 1977 Additional Protocol I

> Article 22 of the Hague Regulations, in both the versions attached to the 1899 Hague Convention II and to the 1907 Hague Convention IV, proclaimed:
>
> "The right of belligerents to adopt means of injuring the enemy is not unlimited".
>
> The above-mentioned 1977 Additional Protocol I broadened this principle slightly in article 35(1):
>
> "In any armed conflict, the right of the Parties to the conflict to choose methods or means of warfare is not unlimited."

It is clear that all these provisions are designed to prohibit unreasonable injuries or destructions, that is, ones that do not bear any rational relation to the military advantage that they might promise to the party concerned. Immediately following this general rule in Protocol I is article 35(3) (quoted above), relating to the environment. Iraq is certainly bound by the 1899/1907 expression of the principle—which constitutes firmly established customary law; however, as pointed out above, this cannot necessarily be claimed of the broader 1977 version, in particular as most of the principal parties to the Gulf War were not parties to Protocol I.

Protection of Property

Regulations Attached to the 1899 and 1907 Hague Conventions and 1949 Geneva Convention IV

Article 23 (*g*) of the Hague Regulations provides:

"... it is forbidden:

"(g) To destroy or seize the enemy's property, unless such destruction or seizure be imperatively demanded by the necessities of war;"

Article 55 of the Regulations provides:

"The occupying State shall be regarded only as administrator and usufructuary of public buildings, real estate, forests, and agricultural estates belonging to the hostile State, and situated in the occupied country. It must safeguard the capital of these properties, and administer them in accordance with the rules of usufruct."

Article 53 of Geneva Convention IV (Protection of Civilian Persons in Time of War) somewhat strengthens article 23 (*g*) of the Hague Regulations, as follows:

"Any destruction by the Occupying Power of real or personal property belonging individually or collectively to private persons, or to the State, or to other public authorities, or to social or cooperative organisations, is prohibited, except where such destruction is rendered absolutely necessary by military operations." It is clear that Iraq violated these treaty and customary principles in wantonly destroying oil wells and polluting land and water. Certainly these actions were neither "imperatively demanded" nor "absolutely necessary"—indeed, their military value appears most questionable, as they could not have been designed to halt any aspects of the allied attack, and indeed the worst offence, the torching of the oil wells, took place well after the outcome of the war had been determined. In any event, these actions were certainly incompatible with Iraq's obligation to act as a responsible tenant (that is, "usufructuary") of occupied territory and assets.

Protection of Containments of Dangerous Forces

1977 Additional Protocols I and II

Article 56 of 1977 Additional Protocol I and Article 15 of Additional Protocol II are both entitled "Protection of works and installations containing dangerous forces", and prohibit, unless excused by overriding military necessity, attacks on dams and dikes and on nuclear electrical generating stations, if to do so would unduly endanger the civilian population by the release of, respectively, waters or nuclear pollutants. Although these provisions are thus primarily humanitarian rather than environment-related, it might be noted that:

- In 1976 the International Law Association adopted its Madrid Resolution on the Protection of Water Resources and Water Installations in Times of Armed Conflict, which, *inter alia,* forbids the destruction of water installations "when such destruction may involve... substantial damage to the basic ecological balance".
- In December 1990, coincidentally just towards the end of the quiescent period of the Gulf War, the United Nations General Assembly, basing itself on a number of earlier resolutions by the General Conference of the International Atomic Energy Agency (IAEA), adopted a resolution on "Prohibition of attacks on nuclear facilities", in which it expressed its awareness that such attacks "could result in radioactive releases with grave consequences" and called for the conclusion of an international agreement to prohibit them, including through an improvement of the regime for the protection of nuclear facilities established by Additional Protocol I.

It should be noted that these provisions are narrowly formulated to relate only to the specified hazards, and do not quite establish a general principle that containers of dangerous forces or materials should not normally be attacked if to do so were to endanger civilians or the environment unduly. Thus, for example, attacks on oil tankers or containers are not prohibited by these rules.

Mines and Other Remnants of War

1907 Hague Convention VIII

The 1907 Hague Convention VIII (relative to the Laying of Automatic Contact Mines) contains regulations designed to minimise the possibility that naval mines laid in a particular location in time of war should

continue to endanger peaceful shipping after the occasion for using them has passed and outside of the area of intended use.

It is not clear whether these rules, which are also considered to constitute part of customary law, were fully observed by Iraq during the Gulf War.

Protocol II to the 1980 Inhumane Weapons Convention

Protocol II (on Prohibitions or Restrictions on the Use of Mines, Booby Traps and Other Devices) to the 1980 Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects requires that minefields either be carefully mapped to facilitate removal after the period of active hostilities or consist of mines that will self-destruct reasonably rapidly so as not to constitute a long-lasting hazard. It also calls for international cooperation in the removal of minefields, mines and booby-traps.

This Protocol unfortunately has, as of 31 December 1991, only 30 parties, which do not include the United States, the United Kingdom or Iraq. (It should be noted that the inhumane weapons Convention, though adopted at a United Nations-sponsored conference, is an extension of the ICRC-sponsored 1977 Additional Protocol I to the 1949 Geneva Conventions.)

General Assembly Resolution 37/215 of 1982

On 20 December 1982 the General Assembly of the United Nations, after having received reports on several studies concerning the dangers and other problems caused to civilian users of land that had formerly served as battlefields, as testing areas for new weapons or as training grounds for troops, adopted a resolution on "Remnants of war", relevant parts of which read as follows:

> *"The General Assembly,*
>
> "....
>
> *"Convinced* that the responsibility for the removal of the remnants of war should be borne by the countries that planted them,
>
> *"Recognising* that the presence of the material remnants of war, particularly mines, on the lands of developing countries seriously impedes their development efforts and causes loss of life and property,
>
> "....
>
> "2. *Regrets* that no real measures have been taken to solve the problem of remnants of war despite the various resolutions and decisions adopted

thereon by the General Assembly and the Governing Council of the United Nations Environment Programme;

"3. *Reiterates* its support of the just demands of the States affected by the implantation of mines and the presence of the remnants of war on their lands for compensation from the States responsible for those remnants;

"....."

There has been no follow-up on that resolution, and thus the sentiments expressed by the General Assembly remain at best hortatory. At this stage it would seem difficult to characterise them even as *de lege ferenda.* However, it might be noted that this resolution is fully compatible with the above-mentioned provisions of Protocol II to the inhumane weapons Convention, is reinforced by Security Council resolution 686 (1991) mentioned below, and also that the asserted primary obligation to remove remnants of war and the secondary one to pay compensation are in consonance with article 24 (*a*) of the draft articles on International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law at present being considered by the International Law Commission (ILC).

Cease-fire resolution of the Security Council

It should be noted that the limited legal force of these several provisions was reinforced by the fact that at the conclusion of the Gulf War Iraq was required to agree to assist in locating its mines, by the temporary cease-fire agreement of 2 March 1991 and by resolution 686 (1991) adopted by the Security Council later on the same day, which reads in relevant part as follows:

"The Security Council,

"....

"3. *Further demands* that Iraq:

"....

"(*d*) Provide all information and assistance in identifying Iraqi mines, booby traps and other explosives as well as any chemical and biological weapons and material in Kuwait, in areas of Iraq where forces of Member States cooperating with Kuwait pursuant to resolution 678 (1990) are present temporarily, and in the adjacent waters;"

International Legal Instruments Relating to the Environment

Although the world community, and particularly certain regions, have over the past two decades enormously increased their environmental consciousness, they are still very far from agreement

on any binding general environmental norms. Rather, the generally accepted principles are for the most part expressed in non-binding declarations and charters (so-called "soft law"), though, possibly, some of their provisions are gradually becoming accepted as customary law. There are, however, a number of treaties designed to protect certain "commons", such as international waters, from pollution.

These various instruments and principles are for the most part designed with a view to their application to normal activities, and not to the abnormal stresses of warfare. Therefore, in examining any of these norms, it is necessary first of all to determine whether they are meant to, or reasonably can, apply to the latter situation at all. A negative argument can be based on the normal rule of interpretation that the provisions of a general legal regime are normally superseded by those of a special one, and that the laws of war constitute such a special regime. However, this should not be read as suggesting that warfare dissolves all normal rules of international conduct, but merely that one must examine all such rules as to their applicability in wartime and to warfare.

To the extent that the norms are set out in treaties to which some of the belligerents are parties, it is also necessary to consider to what extent normal treaty relations may be suspended or even terminated by war. While at least suspension normally applies between belligerents, it is generally not true between belligerents and neutrals, and thus the latter may be able to insist that *vis-d-vis* themselves the normal treaty obligations continue to prevail.

General Environmental Declarations

The 1972 Stockholm Declaration

The Declaration of the United Nations Conference on the Human Environment, which was adopted by the Conference on 16 June 1972 and, later that year, called to the attention of Governments by the United Nations General Assembly, *inter alia* proclaims the following:

> *"Principle 2*
>
> "The natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.
>
> *"Principle 5*
>
> "The non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to

ensure that benefits from such employment are shared by all mankind.

"Principle 6

"The discharge of toxic substances or of other substances and the release of heat, in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted to ensure that serious or irreversible damage is not inflicted upon ecosystems....

"Principle 7

"States shall take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea,"

Of all general international environmental pronouncements, the Stockholm Declaration is closest to having attained the status of customary law. However, whatever the current binding effect of these originally hortatory statements might be, the question is whether they were ever intended and can now be interpreted to apply also to military activities. In this connection it might be noted that the Declaration contains one direct reference to war, in that principle 26 condemns "nuclear weapons and all other means of mass destruction"; whether this implies permission to use other types of weapons or means of warfare without regard to the environment is by no means clear.

World Charter for Nature

Aside from the provisions directly relevant to war quoted and discussed on the World Charter for Nature sets out a number of other important rules and prohibitions that were evidently violated by Iraq during the Gulf War.

It would, however, probably be difficult to argue, in the light of the above-quoted two explicitly warfare-related paragraphs, that the others are also meant to apply to military activities. In any event, this relatively recent pronouncement has hardly attained legal force beyond that of a strong recommendation by the United Nations General Assembly, to which Member States are bound to give good-faith consideration.

Treaties Relating to Seas

United Nations Convention on the Law of the Sea

One of the most important subjects dealt with in the United Nations Convention on the Law of the Sea (UNCLOS), adopted and opened for signature at Montego Bay, Jamaica, on 10 December 1982, is that of

"Protection and Preservation of the Marine Environment", to which the entire part XII (articles 192-237) is devoted.

This Convention has, of course, not yet entered into force, though by now 51 of the 60 ratifications required therefor have been secured, including that of Iraq. However, a number of important States have not yet taken action and some have formally declared that they do not intend to. Nevertheless, it is widely considered that many of the provisions of the Convention constitute either well-established or recent customary law, and this most likely applies to the general environmental provisions quoted in note 39—though perhaps not, to all the means of implementation set out in the rest of part XII.

The question again is whether these provisions were meant to and do apply during periods of hostilities and specifically to military activities—and whether neutral States may insist that their particular rights, as well as their rights in global commons (for example, the oceans), be respected regardless of any hostilities in which other parties may be engaged.

Global Treaties Relating to Pollution of the Oceans by Oil

During the past decades, a number of treaties have been concluded, for the most part under the auspices of the International Maritime Organisation (IMO), formerly the Intergovernmental Maritime Consultative Organisation (IMCO), designed to prevent the pollution of the seas, particularly by oil, and to establish certain legal consequences of such pollution. These instruments include:

(a) International Convention for Prevention of Pollution of the Sea by Oil, 1954 (as amended);

(b) International Convention for the Prevention of Pollution from Ships (MARPOL), 1973, and the Protocol of 1978 relating thereto (as amended);

(c) International Convention on Civil Liability for Oil Pollution Damage, 1969, and the Amending Protocol of 1984;

(d) International Convention on the Establishment of an International Fund for Oil Pollution Damage, 1971, and the Amending Protocol of 1984;

(e) International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990.

Unfortunately, although some of these treaties enjoy relatively wide participation, in particular among the States involved in the oil trade,

Iraq is not party to any of these. Nevertheless, this extensive acceptance, particularly of MARPOL in its 1978 version (57 States, responsible for 85 per cent of the world's tonnage), suggests that if so many States are willing to undertake to prevent even accidental or incidental pollution, any purposeful action in the opposite sense must be considered as internationally proscribed. Again, however, it must be questioned how far that proscription might be considered as applying to military operations, which are not referred to in any of these instruments.

Kuwait Regional Convention

The 1978 Kuwait Regional Convention for Cooperation on the Protection of the Marine Environment from Pollution provides in relevant part:

> *"Article III*
>
> *"General obligations*
>
> "(*a*) The Contracting States shall, individually and/or jointly, take all appropriate measures in accordance with the present Convention... to prevent, abate and combat pollution of the marine environment in the Sea Area [i.e. the Persian or Arab Gulf];"

This treaty was concluded between Bahrain, the Islamic Republic of Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. It should be noted that all of these, except of course Iraq, and Iran, which declared itself neutral, were parties of the allied Coalition in the Gulf War.

Liability

Civil Responsibility and Liability for Environmental Damage

Draft Articles Under Consideration by the International Law Commission

For a number of years, the International Law Commission has been working to codify the following two complementary topics:

Under the heading "State Responsibility" (for actions prohibited by international law), the Commission has agreed that the breach of an international obligation entails responsibility including, as appropriate, the responsibility to pay financial compensation. Such breaches can, according to the commission's tentative draft, be classified as either "crimes" or "delicts". In the category of crimes, the International Law Commission is considering the inclusion of:

> "a serious breach of an international obligation of essential importance for the safeguarding and preservation of the human environment, such as those prohibiting massive pollution of the atmosphere or of the seas."

Under the heading "International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law", the Rapporteur has suggested the adoption of the following draft articles:

"Article 24

"'Harm to the environment and resulting harm to persons or property

"If the transboundary harm proves detrimental to the environment of the affected State:

"(a) The State of origin shall bear the costs of any reasonable operation to restore, as far as possible, the conditions that existed prior to the occurrence of the harm. If it is impossible to restore these conditions in full, agreement may be reached on compensation, monetary or otherwise, by the State of origin for the deterioration suffered; it

"....

"Article 26

"Exceptions

"1. There shall be no liability on the part of the State of origin or the operator, as the case may be:

"(a) If the harm was directly due to an act of war, hostilities, civil war, insurrection or a natural phenomenon of an exceptional, inevitable or irresistible character; or

".....".

Thus, as here conceived, environmental harm suffered as a result of military action would be excluded from these proposed draft articles. It should, however, be noted that the obligation to "restore" or alternatively to "compensate" is a general expression of the special duties in respect of mines and other remnants of war discussed.

Comparing these extracts from the two sets of draft articles, it appears that if the International Law Commission follows the proposals of its Rapporteurs, it will eventually adopt provisions to the effect that if a *military action* against the environment violates international law, then it should be compensable; if, however, there is harm but no explicit violation of binding norms, then a State would not be liable.

Security Council Resolution

As it happens, the only international legal instrument that directly relates to civil liability for environmental damage caused by warfare is Security Council resolution 687 (1991), setting the conditions for the cessation of the Gulf War, which in pertinent part reads as follows:

"The Security Council,

"....

> "16. *Reaffirms* that Iraq, without prejudice to the debts and obligations of Iraq arising prior to 2 August 1990, which will be addressed through the normal mechanisms, is liable under international law for any direct loss, damage, *including environmental damage and the depletion of natural resources,* or injury to foreign Governments, nationals and corporations, as a result of Iraq's unlawful invasion and occupation of Kuwait;"

Though not explicitly stated by the Council, this specific disposition—which was accepted by Iraq and thus also acquired at least bilateral conventional force—appears to be based on those partly well-established and partly still developing principles of customary international law that the International Law Commission is, as pointed out above, trying to codify.

Criminal Responsibility

The 1949 Geneva Convention IV and the 1977 Additional Protocol I

Article 147 of the Geneva Convention relative to the Protection of Civilian Persons in Time of War provides in pertinent part as follows:

> "Grave breaches .. . shall be those involving any of the following acts, if committed against persons or property protected by the present Convention: . . . extensive destruction and appropriation of property, not justified by military necessity and carried out unlawfully and wantonly."

Thus at least the destruction of the Kuwaiti oil wells would seem to qualify as a "grave breach" of the 1949 Convention.

Article 85 of Additional Protocol I to the 1949 Conventions provides in relevant parts as follows:

> "3. . . .the following acts shall be regarded as grave breaches of this Protocol, when committed wilfully, in violation of the relevant provisions of this Protocol, and causing death or serious injury to body or health:
>
> "....
>
> "(c) launching an attack against works or installations containing dangerous forces in the knowledge that such attack will cause excessive loss of life, injury to civilians or damage to civilian objects;
>
> "....
>
> "5. Without prejudice to the application of the Conventions and of this Protocol, grave breaches of these instruments shall be regarded as war crimes." Thus, the Protocol, which of course is not yet as widely accepted or well-established as the Conventions that it supplements (and is not now binding as a treaty on most of the participants in the Gulf War), would specify that a grave breach such as the one of which Iraq appears to be guilty should be regarded as a war crime.

Draft Articles Under Consideration by the International Law Commission

As already mentioned in connection with civil liability, the International Law Commission, under the topic of "State Responsibility", is considering a proposal to characterise as an international crime "massive pollution of the atmosphere or of the seas".

Under another topic, the "Draft Code of Crimes against the Peace and Security of Mankind", the Commission has just completed its first reading of a set of draft articles (that is, it adopted them in provisional form for the purpose of submitting them to Governments for comments), which include the following two here relevant provisions:

"Article 22

"*Exceptionally serious war crimes*

"1. An individual who commits or orders the commission of an exceptionally serious war crime shall, on conviction thereof, be sentenced [to ...].

"2. For the purposes of this Code, an exceptionally serious war crime is an exceptionally serious violation of principles and rules of international law applicable in armed conflict consisting of any of the following acts:

"....

"(*d*) employing methods or means of warfare which are intended or may be expected to cause widespread, long-term and severe damage to the natural environment;

"....

"*Article 26*

"*Wilful and severe damage to the environment*

"An individual who wilfully causes or orders the causing of widespread, long-term and severe damage to the natural environment shall, on conviction thereof, be sentenced [to ...]."

It should be noted that draft article 22 quoted above specifically refers to the military actions. On the other hand, draft article 26, as well as the quoted extract from the Rapporteur's proposals as to State Responsibility, would apply to any type of international action, but, unlike the draft articles on International Liability... , there appears to be no intention to exclude military actions explicitly, nor would it be logical to do so.

It should also be noted that the draft articles on State Responsibility are meant to deal with crimes of States-a concept that has not as yet been clarified. On the other hand, the draft Code of Crimes... deals

with crimes by individuals, though article 5 of the draft makes it clear that States may also be responsible for the acts to be set out in the Code.

Conclusions

Evaluation of the Existing Law

As pointed out above, the particular offences against the environment that are listed in the introduction to this article are indeed illegal under international law, and may attract economic as well as criminal penalties under that law. However, these conclusions flow almost exclusively from the recognition that these offences constitute wanton crimes against property, rather than environmental offences.

Although some relevant environmental or environment-related law has already been adopted and more is in the process of formulation, that law suffers from one or more of the following defects when applied to the Gulf War:

(a) The most clearly formulated general provisions, those in articles 35(3) and 55(1) and (2) of the 1977 Additional Protocol I to the 1949 Geneva Conventions, have not yet been accepted by many military significant States;

(b) Other important and pertinent provisions, such as those in paragraphs 5 and 20 of the World Charter for Nature, merely constitute solemn recommendations of the United Nations General Assembly;

(c) Many general provisions, such as those of the 1972 Stockholm Declaration, which may be on the way to becoming customary international law, are not clearly enough applicable to war-related offences against the environment;

(d) Finally, certain treaty provisions, such as part XII of the 1982 United Nations Convention on the Law of the Sea, are not yet in force, and in any event it is not clear whether they apply to military hostilities at all and, if so, in respect of what States.

Some Proposals

In order to strengthen the existing international law for the protection of the environment against military activities, the following actions should be considered:

(a) Encouragement of wider participation in already adopted treaties that have directly relevant provisions, such as the 1976 ENMOD Convention, the 1977 Additional Protocol I to the 1949 Geneva

Conventions, and at least Protocols II (Mines) and HI (Incendiary Weapons) to the inhumane weapons Convention;

(b) Encouragement of wider participation in other treaties that are directly protective of the environment, even if their application to military situations is not clear, such as the 1982 United Nations Convention on the Law of the Sea and the various oil pollution conventions, especially the 1973/1978 MARPOL; their wartime applicability might be clarified or extended through the regular review and amendment processes built into most of these instruments.

In the long run, it may be desirable to formulate a special treaty explicitly to protect the environment in wartime Such an instrument should be designed to gain rapid acceptance by as many military significant States as possible, by minimising any avoidable political controversies, such as those that burden Additional Protocol I. Such a treaty might include:

(a) At a minimum, the general provisions in articles 35(3) and 55 of Additional Protocol I and paragraphs 5 and 20 of the World Charter for Nature;

(b) Some specific humanitarian provisions, clearly extended to environmental protection, such as those in article 56 of Additional Protocol I and in article II, paragraph 4, of Protocol III to the inhumane weapons Convention;

(c) Provisions relating to the remnants of war, such as those contained in Protocol II to the inhumane weapons Convention and as called for in the United Nations General Assembly resolution on remnants of war;

(d) Extension to military situations of at least certain well-established peacetime anti-pollution regulations, such as those set out in part XII of the 1982 United Nations Convention on the Law of the Sea, in the 1954 Oil Pollution Convention and in the MARPOL Convention;

(e) The introduction into military planning of certain well-established devices for protecting the environment, such as environmental impact evaluations of new weapons systems, the designation of especially protected areas, and the establishment or designation of a special protective organ (such as the International Committee of the Red Cross is in respect of humanitarian concerns);

(f) The financial liability of belligerents at least towards neutrals for damage done to the latter or to international commons (such as the high seas, Antarctica and outer space);

(g) The criminal liability of States and individuals for wanton destruction of the environment under the guise of military operations; for this purpose it may be useful, but not necessary, to establish an international criminal court.

Clearly, such a treaty will not be easy to negotiate.

However, this may be the time to do so, in a period of heightened environmental awareness and concern and at a time when military commitments and procedures are under re-examination in many parts of the world. Indeed, the General Assembly included hi the agenda of its forty-sixth session an item entitled: "Exploitation of the environment as a weapon in times of armed conflict and the taking of practical measures to prevent such exploitation", though after a brief debate in the Sixth Committee it decided to await a report at its next session on the activities undertaken in the framework of the ICRC on this issue, especially at the Twenty-Sixth International Conference of the Red Cross and Red Crescent.

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ENVIRONMENTAL DESTRUCTION AS A METHOD OF WARFARE

Introduction

The torching of the oilfields by Iraq during the recent Gulf War and the release of immense quantities of oil into the soil and the marine environment triggered not only a general feeling of disgust but also a debate on the question whether international law could or should have prevented these actions. Some legal experts believe that international law adequately covers and prohibits such acts and that the problem lies rather in implementation of the existing law. Others suggest that existing international law is not yet adequate to protect the environment against the perils of warfare. Both views are valid.

To evaluate the situation, it is necessary to understand laws governing armed conflict and laws governing the environment. Each body has its own history and has developed independently of the other. They are not fully in accord. Those who apply or develop one field of international law usually ignore others. The situation is, however, changing.

The main concern of the laws of war is to protect the victims of war. Above all, the laws of war are designed to reduce human suffering. On the other hand, military necessity is a key element of the law of war. This fact has had both a restraining and a permissive effect: it implies that any destruction or injury which does not yield any military advantage is illegal. Moreover, the notion of military advantage is by no means unlimited. Only "military targets" may be attacked, not the civilian population or civilian objects (principle of the "immunity" of the civilian population). Persons who are *hors de combat* must also be spared.

The laws of war date back a long way. Major efforts were made to codify the laws at the turn of the century at the Hague Peace Conferences

of 1899 and 1907. In parallel with those attempts, rules concerning the protection of particular kinds of victims were developed in the so-called Geneva Law, beginning with the Geneva Convention I of 1864, relating to the protection of the wounded and sick in the armed forces in the case of war on land. Today, larger fields of the laws of war are covered by the four Geneva Conventions of 1949 and the two Protocols Additional thereto of 1977. But, other questions, such as those of the protection of cultural property and of the prohibition of certain specific conventional weapons, are new developments contained in separate instruments. While the laws of war are in part based on customary law, many are also codified in a series of treaties, some of which are, however, rather old and do not correspond to the realities of modern warfare, in particular, as regards the law governing armed conflict at sea and the law of neutrality.

Environmental law consists of a mix of rules, and is a much more recent phenomenon—though elements of environmental law also date back many centuries, with some having roots in old Roman law, for example. The basic concern of environmental law is to preserve the limited resources of our planet. A principal element is that no State may cause, or permit, any significant damage to other States. Another old principle is that no State may use shared or common elements of the environment in a way that excludes their use by others, and that competing uses must somehow be accommodated. But, these traditional rules are by no means sufficient to protect natural resources, which are the life-support systems of all humanity, against the hazards of our modern industrial society. Thus, in the interest of preserving our planet for future generations, activities of potential danger to the environment must be restrained or prohibited. As future deterioration of the environment in many parts of the world may be the result of many small causes, it is essential to address each of those, even if the impact of a given activity may be minimal. No possible cause of environmental deterioration should be excluded from this kind of restraint, and this must apply to military activities as well.

It is obvious that such requirements are somewhat at odds with the notion of military necessity. Which, then is the necessity that counts? Is it the need to achieve a military victory—or to put it in more acceptable terms, the need to defend the security of a country? Or is it the need to preserve all elements of the environment for future generations? A military commander might say: How could I put the survival of my country in jeopardy for the sake of preserving some rare species of birds? An environmentalist might say: What entitles a few States to

put the future of humanity in jeopardy just because they are unable to resolve their problems by peaceful means?

An attempt will be made here to analyse where current international law stands on those questions and where those answers are not yet adequate. In the analysis, three quite realistic scenarios will be used as examples: the burning of oil installations, the destruction of a valuable habitat through its transformation into a battlefield, and the destruction of a tanker at sea.

The First Scenario: The Oil Blaze

The setting afire of oilfields by Iraq in Kuwait was clearly illegal. Because the action did not produce any military advantage whatsoever, it constituted destruction of enemy property which was not demanded by the necessities of war and as such was prohibited under article 23 (*g*) of the Hague Regulations Respecting the Laws and Customs of War on Land. Within the meaning of article 147 of the 1949 Geneva Convention IV Relative to the Protection of Civilian Persons in Time of War, it was "extensive destruction... of property, not justified by military necessity and carried out unlawfully and wantonly", and thus a grave breach of this Convention, which might be punished.

What would, however, be the legal situation if those installations were set afire in order to interdict access to an invading enemy? It may be recalled that at one stage there was some talk of filling the ditches around Kuwait with oil and setting them afire in order to prevent the allied forces from entering. It was also said that oil might be released into the Gulf in order to prevent an allied landing. Thus, if the installations were set afire in order to establish a barrier against an invading enemy, this would constitute destruction warranted by military necessity. In other terms, these installations become a military objective because denying them to the enemy constitutes a definite military advantage, as provided by article 52 of Protocol I Additional to the Geneva Conventions of 1949 and a corresponding rule of customary law.

But this does not necessarily mean that the act is permissible. The destruction may still be illegal under article 51, paragraph 5 (*b)* of the Protocol, inasmuch as it would be an attack that might be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated (principle of proportionality).

It must, therefore, be asked: What would be the side-effects of those fires? In Iraq, human, animal and plant life in areas surrounding the burning oil installations was greatly endangered. According to traditional standards, the value judgement that this damage was excessive would to a large extent depend on the actual use of that area. If it was a desert area where a few shepherds passed by with their sheep occasionally, one might come to the conclusion that the damage was not excessive. An environmentalist would make a different judgement: the desert being a sensitive environment where regeneration was achieved slowly, the destruction would be considered to be particularly serious. But, how far is this environmentalist view of the principle of proportionality already part of positive law? It is probably not a matter of controversy that environmental values have to be taken into account when this proportionality judgement is made. But how far can they, in a concrete case, tip the balance in one way or the other? In this respect, the law needs at least some clarification.

Another provision of Protocol I which may be violated is article 55:

> "Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the civilian population."

Is the damage caused by the burning oilfields "widespread, long-term and severe"? It must be noted that these requirements are cumulative. Some effects could be felt even several thousand kilometres away, but were those also "severe"? Nature around the oil installations being polluted by the smoke will probably not support significant life for a number of years if there is no extensive clean-up. Does that mean long-term and severe damage?

What is the meaning, in the case in point, of the additional requirement that there must be a prejudice to the health or survival of the population? If anything is clear in this respect, it is the fact that the terms used in article 55 (and similarly in article 35) of Protocol I are very difficult to apply. More serious thought must be given to the question of what can be done in order to yield the results of interpretation in particular practical cases.

Let us now turn to the question of States which are not parties to the conflict. The long-term damage caused by the burning oilfields has already been mentioned. While the principles and treaty provisions discussed so far apply between the parties to an armed conflict, they

have no significance in the relationship between the parties to a conflict, on the one hand, and States which are not involved in that armed conflict, on the other.

There was no armed conflict between Iraq and, for instance, Afghanistan, Pakistan or India, on which smoke particles from the burning oilfields may have fallen. The relationship between Iraq and those States is not governed by the laws of war but rather by the "normal" rules of the law of peace. Thus, the general rules of environmental law apply.

But, what does that mean in this particular case? There is, of course, the traditional law already mentioned that States may not engage in any activities which cause significant damage on the territory of other States. Do the black particles which apparently fell constitute "damage" within the meaning of the rule? That depends on the actual impact on the respective ecosystems. If, for example, a harvest is destroyed, that is clearly damage. But, if the reproduction of a rare animal or plant species is impaired, is that a type of damage that is serious enough to come within the purview of the rule just discussed? The application of the traditional rule becomes all the more questionable if the fumes caused by the blaze just add to the acid rain which falls anyway or to the greenhouse effect.

This, however, is not a specific problem of environmental destruction in times of war: it is a general difficulty of environmental law. Very slowly, international rules are being developed which are no longer damage-related but which put a limit on certain emissions regardless of the question of the effect a single emission might have somewhere else.

In the case of the Gulf War, there were no such specific rules applicable, but they are being developed. Most European States, for example, are bound by the environmental provisions of the Helsinki Final Act. If similar events occurred in a European State which is bound by the Final Act, the fact that an armed conflict of an internal or international nature involving that State existed would be irrelevant as regards the duties which the State has undertaken. In other words, the armed conflict does not exonerate the State from its duty to reduce sulphur dioxide (SO_2) emissions.

Some States would find it hard to accept that new legal impediment to the use of means of warfare of their choice. The problem has difficult political and military implications. Imagine, for example, what this kind of reasoning means for the use of nuclear weapons! Any use of nuclear weapons which causes serious radiation on the territory of a

neutral State would for that reason be prohibited. While it might be considered that the law should conform to that reasoning, any attempt to seek such clarification might be counterproductive because it might trigger resistance that would finally destroy the rule as it exists.

The Second Scenario: A Destroyed Habitat

Let us assume that a State uses the wetlands of a river delta to deploy troops advancing against the enemy. Let us further assume that these wetlands are registered in the list established under the Ramsar Convention of 1971, which means that these lands are a particularly valuable habitat for purposes of nature conservation. The Convention would not, however, prohibit those movements of troops even though they might prejudice the habitat. The presence of those troops would make the whole area a military objective. If, then, the enemy bombed the area, thus causing further and perhaps irreversible damage to the habitat, no legal objections could be raised under a traditional understanding of the laws of war. The bombing constitutes a perfectly legal attack against a military objective. If this result is to be avoided, military use of the area by the party to which it belongs must be prevented to begin with, but this is possible only if there is then, on the other hand, a legal guarantee that the other side will not use it for military purposes.

For the time being, there is no rule in the laws of war or in international environmental law which would confer any such demilitarised and protected status for the purposes of environmental protection. The idea of specially protected areas that may not be used for military purposes is, however, well known in international humanitarian law. Examples are the "hospital and safety zones and localities" under article XIV of Geneva Convention IV or "demilitarised zones" according to article 60 of Protocol I Additional to the Geneva Conventions of 1949. Both kinds of safety zones require an agreement between the parties to the conflict. Article 60 of Protocol I may well be used for the purpose of excluding certain areas from the conduct of hostilities and also for environmental purposes.

No change of the law is required for that purpose. The only disadvantage to that solution is, as already said, the need for an agreement between the parties.

This may to a certain extent be avoided if another regulatory model is adopted, namely that of the Convention for the Protection of Cultural Property in the Event of Armed Conflict, of 1984. This Convention provides for two degrees of protection, general and special (articles 4 and 8 of the Convention, respectively). The higher degree of protection

is acquired by the entry of the protected object in the "international register of cultural property under special protection" which is maintained by the Director-General of UNESCO (the United Nations Educational, Scientific and Cultural Organisation). The object under special protection and its surroundings may not be used for military purposes, but on the other hand, there is also a prohibition against attacking it. This kind of protection seems to be highly desirable for valuable habitat, but this would require a new convention.

The Tanker War

One of the worst hazards for the marine and coastal environment is oil pollution. For the environment, it makes no difference whether oil pollution occurs in times of peace or in times of armed conflict. Nevertheless, the rules designed to prevent and reduce oil pollution of the seas have been developed since 1954, when the first International Convention for the Prevention of the Pollution of the Sea by Oil was concluded, without specifically addressing the question of oil pollution caused by naval operations in times of armed conflict.

On the other hand, the traditional rules of the law of naval warfare—which would determine the question whether or not in a given case a tanker may be destroyed—are not designed to take environmental considerations into account. Those rules are designed to accommodate essentially three different kinds of interest: the military interest in barring an enemy from essential fuel supplies, the interest of neutral States in free trade and navigation, and concern for the safety of human life at sea.

Therefore four different situations have to be distinguished under the traditional law of naval warfare. First, if the tanker flies the enemy flag, it may be a military (naval auxiliary) or a merchant vessel. Enemy military vessels may be destroyed, and so also may merchant vessels, at least under certain conditions. In the case of a merchant vessel, destruction is not permissible if the ship can be seized. It must be stressed again that he main reason for that restriction is concern for the safety of the passengers and crew.

Secondly, if the tanker flies a neutral flag, a distinction must be made as to whether the cargo is destined to a neutral or to an enemy port. In the latter case, the oil aboard the ship constitutes contraband and the belligerent has the right to prevent it from getting to the enemy, essentially by exercising a right of visit, search and condemnation. Force may be used to the extent necessary to exercise that right. As a rule at least, destruction of the ship is not permissible.

Thirdly, if the tanker carries oil to a neutral port, the belligerent has no right to impede the continuation of the voyage, even if the fuel comes from the enemy port and the revenue derived from the sale of the oil is used to finance the enemy war effort. The definition of contraband is already quite broad, but it is still limited to materials that have some direct usefulness for the war effort of the enemy.

Fourthly, while this should not be controversial, another justification for attacking tankers flying a neutral flag played a certain role during the Iran-Iraq conflict, namely, the idea of reprisals. If the tanker flies the flag of a neutral State which has violated its duties of neutrality by massively supporting one of the belligerents, it may well be asked whether the other belligerent is entitled to attack and destroy these ships as a measure of reprisal against the violation of neutrality.

To sum up, the rules of traditional law of naval warfare in relation to the destruction of tankers are somewhat complicated, but it would certainly be inappropriate not to heed environmental concerns. On the other hand, as already mentioned, the general rules on the uses of the sea do not contain specific provisions relating to naval warfare operations, but they do contain certain general obligations to protect and preserve the marine environment (article 192 of the United Nations Convention on the Law of the Sea). It is often said that in the case of an armed conflict, multilateral treaties are suspended in the relationship between the parties to that conflict. This may or may not be so, but those conventions are certainly not suspended in the relationship between the belligerents and States that are not parties to the conflict. Thus, at least in the relationship to States which are not parties to the conflict, belligerents remain bound to respect the general rules that protect the marine environment.

The result of that reasoning may appear to be somewhat surprising, at least for traditional schools of military force. But this is only the result of developments during the last 20 or 30 years. Many human activities which were considered to be quite legitimate and inoffensive 30 years ago have now become illegal and immoral because we have learned that they constitute an unacceptable hazard for the life support systems of our Earth. There is no reason whatsoever to spare military operations from these developments of public conscience and the law.

It is the considered view of this writer that customary international environmental law, as it stands today, already restricts the freedom of States to cause marine pollution by naval warfare operations. This may not, however, be clear to all relevant military decision makers. There is thus every reason to make an effort to clarify the law in this respect by creating more explicit treaty provisions.

Currently, efforts are being made on an expert level to update the treaties relating to naval warfare. The input of environmental law in these discussions has so far been inappropriate. Serious efforts must be made to strive for new rules governing the law of naval warfare that adequately protect the environment. In relation to land warfare, the provisions of Protocol I Additional to the Geneva Conventions concerning protection of the environment constitute an example in this respect, imperfect as they may be. But it must be stressed that any new treaty provision must reflect the state of environmental conscience today, not that of 1977. In a sense, the environment-related provisions of the Protocol of 1977 are also out of date.

Another area in which the law may need some development is that of facilitating and protecting environmental cleanup operations. There have been some discussions about the creation of a "Green Cross" for that purpose. Instead of creating new institutions, it is more appropriate to consider what can be done with the existing ones. The International Committee of the Red Cross (ICRC) has invaluable experience in arranging operations for assistance to victims of warfare: Why not include the environment among those victims that may be protected? But the ICRC has no experience so far in environmental clean-up operations.

The obvious solution to this problem would be cooperation between the ICRC and other organisations or institutions that are physically in a position to take remedial action in the event of serious pollution. Without entering into the details of the matter, it might be appropriate to give some kind of additional legal protection to this kind of cooperative effort.

Some Conclusions

If correctly interpreted, the law relating to protection of the environment against damage caused by armed conflict is perhaps not so inadequate—but because of this "if", there is certainly at least a need for clarification of the law. As the examples have shown, there is also some need to develop new rules, for instance to exclude any military use of certain valuable habitats and to ensure the safety of environmental clean-up operations. It is time, in other words, to add environmental concerns more explicitly and more concretely to the restraints on military violence.

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THE 1981 INHUMANE WEAPONS CONVENTION

Introduction

According to Article 2, paragraph 4, of the Charter of the United Nations, all aggressive wars are unlawful. Yet, war exists and seemingly will continue to exist for the foreseeable future. Since it does not seem possible to eliminate the atrocities of war by outlawing war itself, the international community has long since tried the approach of disarmament as a method for building confidence between States and reducing the risk of outbreak of war.

In multilateral and bilateral negotiations, States have tried to eliminate certain categories of weapons from arsenals, to reduce the quantity of specific weapons, or to stop or slow down new dangerous developments in the qualitative arms race. This approach of disarmament or force reduction has not, so far, led to any multilateral treaties on conventional weapons. There is no treaty banning the production of a specific category of conventional weapons; nor is there today any treaty on quantitative restrictions on the deployment of conventional weapons, although the Vienna negotiations on conventional forces in Europe (CFE) may alter this picture.

In the quest for a safer and more decent world, there is also another approach to weapon negotiations: to lay down rules of a humanitarian nature restricting or prohibiting the *use of* specific weapons. The efforts to outlaw the use of excessively inhumane means and methods of warfare started in the late nineteenth century and were inspired by the work of Henry Dunant. So far, this humanitarian approach has been clearly more successful than the disarmament efforts related to conventional weapons, considering that a number of humanitarian regulations are in force and that more often than not they work in practice.

The most recent step forward in this field of international law was taken when the United Nations inhumane weapons Convention was adopted in 1980 and opened for signature in 1981. This article will focus on this Convention, its background, scope and content and the need for a follow-up.

Humanitarian Weapon Regulations before 1980

One of the first historical landmarks in the field of international humanitarian law was the Declaration of St. Petersburg of 1868, today expressing customary law. The preamble to that Declaration introduced the principle that in warfare a balance should be struck between military necessity and humanitarian considerations. It was stated:

> "That the only legitimate object which States should endeavor to accomplish during war is to weaken the military forces of the enemy;
> "....
> "That this object would be exceeded by the employment of arms which uselessly aggravate the sufferings of disabled men, or render their death inevitable;
> "That the employment of such arms would, therefore, be contrary to the laws of humanity."

In the concluding part of the Declaration, the parties envisaged new international agreements in which they would take into account future improvements of arms developments "... in order to maintain the principles which they have established, and to reconcile the necessities of war with the laws of humanity".

In 1868 this first step in the work "to reconcile the necessities of war with the laws of humanity" meant a prohibition against the use of high explosive bullets weighing less than 400 grams.

The next step was taken in 1899, when the First Hague Peace Conference outlawed the use of dum-dum bullets. These expanding bullets were used by the British in India, and the United States Government planned to make use of them in the Philippines. As they flattened easily on impact with the human body, they were generally considered to be excessively injurious and, following the spirit of St. Petersburg, the delegates voted 22 to 2 to prohibit their use. Since then this type of projectile has not been deployed in international conflicts, nor has it been produced or stockpiled for possible use by regular forces.

The next treaty to prohibit the use of specific weapons was the Geneva Protocol of 1925, relating to bacteriological (biological) and

chemical means of warfare. In the terminology of today, it was a regulation on weapons of mass destruction. Since 1925, there has been no further comprehensive prohibition of the use of any existing category of weapons.

Towards a United Nations Convention

Modern warfare has complicated the application of the principle of humanitarian law that a distinction must be observed between civilian and military targets. As a result, the protection of civilians has weakened considerably. This is, *inter alia,* due to the fact that many weapons systems tend to strike military targets and civilians alike, i.e., have indiscriminate effects. At the same time, new weapons causing intense suffering have materialised. The Geneva Protocol of 1925 did not cover incendiary weapons like napalm, and the fact that no new categories of weapons have been prohibited since 1925—although the technical evolution has led to the emergence of several new types of weapons which could be classified as unnecessarily injurious or as having indiscriminate effects—is increasingly looked upon as evidence of a failure.

The first call for action came from the International Conference on Human Rights, held in Teheran in 1968 under the auspices of the United Nations. The issue of prohibitions or restrictions for humanitarian reasons on the use of specific conventional weapons was now to be the subject of substantive discussion for some years, starting in the General Assembly in 1971. Earlier, most negotiations had focused on nuclear weapons, while conventional weapons were not an issue, although they were the ones which were actually used in armed conflicts.

In 1974 and 1976, sessions of the Conference of Government Experts on the Use of Certain Conventional Weapons were held under the auspices of the International Committee of the Red Cross (ICRC). The well-known Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts was convened in Geneva in 1974. In 1977, at the end of the fourth session of the Conference, two protocols were adopted. Protocol I (Additional to the Geneva Conventions of 1949) reiterates and expands the traditional rules regarding the protection of civilians. It also reiterates the "Hague rules" (the so-called combat law of the Hague Convention IV of 1907) and what was by now a principle of customary law, notably that "it is prohibited to employ weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or

unnecessary suffering" (article 35 of Additional Protocol I). But, this general formula is not very helpful. It is usually considered that a specific weapon is not governed by this rule unless there already exists an explicit prohibition of the weapon concerned, i.e., there has to be an agreement between States in cases where humanitarian imperatives are given precedence over military considerations.

The Convention

In 1977, the United Nations General Assembly adopted resolution 32/152, entitled "Incendiary and other specific conventional weapons which may be the subject of prohibitions or restrictions of use for humanitarian reasons". The first preambular paragraph of the resolution stated that "the suffering of civilian populations and combatants could be significantly reduced if general agreement can be attained on the prohibition or restriction for humanitarian reasons of the use of specific conventional weapons, including any which may be deemed to be excessively injurious or to have indiscriminate effects". Furthermore, the General Assembly decided by resolution 33/70 of 1978 to hold a conference on the above matter in September 1979 and to convene a preparatory committee for the Conference. In 1980, at the conclusion of its second session, the Conference adopted the text of the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects. Signed in 1981, the Convention applies to international conflicts in the same way as does Additional Protocol I to the 1949 Geneva Conventions. It has the format of an "umbrella treaty", under which specific agreements can be subsumed in the form of protocols. Three protocols on specific categories of weapons were agreed upon in the first instance. The scope of the Convention was established by reference to the Geneva Conventions and to Additional Protocol I. This means that the Convention covers international conflicts, with the understanding that these include "armed conflicts in which peoples are fighting against colonial domination and alien occupation and against racist regimes in the exercise of their right of self-determination."

It should also be noted that a State cannot become party to the Convention alone, because the Convention only provides the legal framework within which the specific prohibitions on weapons contained in the annexed Protocols are applicable. A State must accept at least two of the Protocols together with the "umbrella" Convention.

The Annexed Protocols

Protocol I totally prohibits the use of weapons whose primary effect is to "injure by fragments which in the human body escape detection by X-rays". From the point of view of disarmament or arms limitation, this Protocol is of limited interest, since the prohibition adopted concerns a category of weapons which does not exist and does not seem military useful enough to develop.

Protocol II, by contrast, which prohibits or restricts the use of mines, booby traps and other devices, deals with an existing and all-too-common problem. This Protocol is intended to prevent or reduce civilian casualties caused by these explosive devices during and after hostilities. Article 2 defines mines as "any munition placed under, on or near the ground or other surface area and designed to be detonated or exploded by the presence, proximity or contact of a person or vehicle". Booby traps are defined as any device or material "which is designed, constructed or adapted to kill or injure and which functions unexpectedly when a person disturbs or approaches an apparently harmless object or performs an apparently safe act". "Other devices", finally, are defined by Protocol II as "manually-emplaced munitions and devices designed to kill, injure or damage and which are actuated by remote control or automatically after a lapse of time".

The use of mines, booby traps and other devices against the civilian population as such or against individual civilians is prohibited in all circumstances, whether in offence, defence or by way of reprisal. Also prohibited is the indiscriminate use of all these devices against military objectives in conditions which may be expected to cause incidental loss of civilian life, injury to civilians or damage to civilian objects that would be excessive in relation to the concrete and direct military advantage anticipated. Booby traps designed to cause superfluous injury or unnecessary suffering are prohibited in all circumstances.

The Protocol bans the use of remotely delivered mines, i.e., those delivered by artillery, rocket, mortar or similar means, or dropped from an aircraft, unless such mines are only used within an area which is itself a military objective or which contains military objectives, and unless the location of mines can be accurately recorded, or a neutralising mechanism is used to render a mine harmless or cause it to destroy itself when it no longer serves the military purpose for which it was placed in position.

Protocol II also contains rules on the recording of the location of minefields and the exchange of information after the cessation of

hostilities. These rules may have the status of customary law. Guidelines on recording the location of minefields, mines and booby traps are contained in an annex to the Protocol. International co-operation in the removal of the devices in question after the cessation of hostilities is provided for in a separate article. The Protocol does not apply to the use of anti-ship mines at sea or in inland waterways. In this respect, the rules which were adopted at the Second Hague Peace Conference in 1907 and which deal with automatic submarine contact mines are still valid (Hague Convention VIII).

Protocol III refers to the use of incendiary weapons. Incendiary weapons are defined as those weapons or munitions which are primarily designed to set fire to objects or to cause burn injury to persons through the action of flame, heat, or a combination thereof, produced by a chemical reaction of a substance delivered on the target, for example: flame-throwers, fougasses, shells, rockets, grenades, mines, bombs and other containers of incendiary substances. Munitions which may have only incidental incendiary effects are excluded from the scope of the Protocol. The same applies to munitions designed to combine penetration, blast or fragmentation effects with an additional incendiary effect.

The prohibitions and restrictions introduced by Protocol III aim only at the protection of civilians. Thus, it is prohibited in all circumstances to make the civilian population as such, individual civilians or civilian objects the object of attack by incendiary weapons. It is also prohibited to make a military objective situated within a concentration of civilians the object of attack by air-delivered incendiary weapons.

But, even the protection of civilians is qualified: military objectives which are located within populated areas but which are clearly separated from a concentration of civilians are excluded from the restriction in respect of ground-delivered incendiary weapons. The Protocol stipulates that all feasible precautions should be taken in order to limit the incendiary effects on the military objective and to avoid or minimise incidental loss of civilian life, injury to civilians and damage to civilian objects.

The Protocol also prohibits attacks with incendiary weapons on forests or other kinds of plant cover, except when these are used to cover, conceal or camouflage combatants or other military objectives, or are themselves military objectives.

The Need for Follow-Up

The modest results of the conventional weapons Conference point to the need for a review and an amendment conference. A review is

also envisaged in the 1981 Convention itself. According to article 8, paragraph *l*(*a*), an amendment conference will be summoned after the entry into force of the Convention (i.e., after 20 ratifications or accessions) if a majority, that shall not be less than 18 of the parties to the Convention, so agree. As of 31 December 1989, the number of parties to the Convention is 32. Consequently, the conditions for a review conference are at hand. If, after a period of 10 years following the entry into force of the Convention (1983), no review or amendment conference has been convened, any party may request the depositary (the Secretary-General of the United Nations) to convene such a conference.

The issues which may be addressed by a future review conference will be taken up below.

First of all it should be remembered that during the Conference of 1979-1980, a number of non-aligned and neutral States advocated a comprehensive ban on all use of incendiary weapons, since incendiaries as such were considered to be excessively injurious. With regard to the Protocol on incendiary weapons, no protection of combatants was achieved. This will remain a central issue for later agreement.

A review conference would, in addition to incendiaries, probably also consider a "soft law" approach to small-calibre weapons systems. In 1979, at the first session of the United Nations Conference, a resolution was adopted appealing to all Governments to exercise the utmost care in the development of small-calibre weapons systems. In this context, reference was made to the 1899 Hague Declaration on dum-dum bullets. The resolution of 1979, although not legally binding, seems to have had a positive effect as regards the development of new weapons and ammunitions. Against this background, a review conference may not find it necessary to discuss legally binding rules on small-calibre weapons systems. A new resolution repeating the earlier appeal might prove sufficient.

Although land-mines and booby traps are dealt with in Protocol II, the Protocol is insufficient in the sense that it does not effectively deal with the question of "material remnants of war" (MRW). Mines and other explosives which are left behind after an armed conflict present a constant hazard to the population and the environment and an obstacle to many economic activities. Article 9 of the Protocol provides that after the cessation of active hostilities, States shall endeavour to agree among themselves and with international organisations on technical and material assistance necessary to remove or render ineffective mines and booby traps placed in position during the conflict. This provision

alone will not remedy the growing problem of MRW. In many parts of the world, mines and other explosive materials lie around the countryside for decades after the cessation of hostilities. The Falkland Islands (Malvinas), Afghanistan, the Islamic Republic of Iran, and Iraq all risk being unable to rid themselves of this problem, unless a solution in the field of international co-operation is found. A future review conference will have to address this matter. The question of sea-mines and remnants of war at sea was not regulated at all in 1981. The relevant rules in this context date from 1907 (Hague Convention VIII) and could usefully be updated and modernised, preferably within the framework of the present Convention. At the 1989 and 1990 sessions of the United Nations Disarmament Commission, Sweden presented a working paper which included a draft protocol on the use of sea-mines. Like the Hague Convention VIII, the draft protocol is built on the concepts of a neutralising mechanism and information, so as to protect innocent shipping and safeguard the principle of the freedom of the sea during and after an armed conflict.

Another category of weapons that certain delegations considered as excessively inhumane during the United Nations Conference and which might be taken up at a future review conference is that of fuel-air explosives (FAE). A FAE is a bomb which relies for its effect on shock waves caused by the detonation of a fuel cloud created in the air.

Anti-materiel use (against minefields, trucks and ships) creates no legal problems, while an anti-personnel use shows some disturbing features from the point of view of humanitarian law. Death from blast injuries is probably one of the most terrible ways of dying. A person caught by the shock wave will probably be suffocated by blood from his ruptured lungs.

Lately there has been some concern that military lasers (range-finders, weapon guidance devices or anti-materiel weapons) could be used for anti-personnel purposes on the battlefield or at sea in a way contrary to the standards of humanitarian law. There is today also a clear risk that dedicated anti-personnel laser weapons will be fielded. An international expert meeting sponsored by the ICRC looked into this matter in June 1989. One of the main problems with the use of laser beams is the danger they constitute for the human eye. Laser exposure, even for fractions of a second, may cause total blindness. Anti-eye laser weapons specifically designed for anti-personnel purposes will probably be discussed by a future review conference.

Finally, the 1981 Convention does not establish any rules for verification although, at the end of the Conference, the Federal Republic of Germany and others tabled a proposal providing for a consultative committee of experts that could investigate alleged violations of the Protocols. This is definitely a matter that could be expected to be brought up again, given the increased role of verification in international negotiations.

Conclusion

The adoption of the United Nations inhumane weapons Convention and its three Protocols on 10 October 1980 marks the completion of a significant phase in the evolution of international humanitarian law. The years 1974-1980 were filled with intense negotiations in this field of international law and the 1981 Convention was one of three treaties to materialise (the other two being the 1977 Additional Protocols to the Geneva Conventions). From the point of view of arms limitation, though, the Convention can be seen as only a modest move towards phasing out certain weapons, namely, those that, due to the review procedure of the Convention, could be agreed upon in the future as subject to absolute prohibitions of use. Only those humanitarian regulations which are of an absolute nature and prohibit *any* use (or at least any *first* use) of a specific category of weapons can be expected to lead to a phasing out of the weapon in question from the arsenals of States. Even if the Convention did not achieve this, it must be regarded as a legal step forward, because in regulating the use of certain weapons in certain circumstances it has given precedence to humanitarian imperatives over military considerations.

In conclusion, it should be pointed that any humanitarian weapon regulations gaining the acceptance of the major military powers will, due to the national security interests involved, yield significant confidence-building effects. In that sense, international agreements to ban some of the more inhumane or indiscriminate weapons may also contribute to building a climate of detente conducive to real measures of disarmament.

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