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A Zone Free of Weapons of Mass Destruction in the Middle East

Jan Prawitz and *James F. Leonard*

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UNIDIR

Palais des Nations
CH-1211 Geneva 10
Tel. (41.22) 917.42.93/917.42.56
Fax (41.22) 917.01.23

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Preface

This study is part of the UNIDIR project on "Confidence- Building and Arms Control in the Middle East". Early considerations within the project led to the conclusion that analyses of confidence-building, non-offensive defence and cooperative security, primarily defined in conventional force terms, would be difficult to undertake without also addressing the problems associated with weapons of mass destruction. It was understood that as long as one nuclear weapon was assumed to exist somewhere in the region, much attention would tend to be focused on that one weapon.

A natural point of departure was then to undertake a separate study of the concept of a nuclear weapon-free zone in the Middle East, long since unanimously supported by the UN General Assembly. In 1990, it was accepted that the scope of the concept should be widened to include all weapons of mass destruction.

The study begins by an examination of relevant parts of global arms control regimes, the most important one being the nuclear Non-Proliferation Treaty (NPT). Today, several such regimes are well enough established to constitute pillars for the drafting of regional treaties. Regional arrangements may, in turn, become important complements to the global regimes.

An account is made of the experiences of zonal arrangements accumulated so far, i.e. in Latin America, the South Pacific, Africa and South East Asia. Two United Nations studies summarized those experiences in 1975 and 1985. In 1990, a third UN study concentrated on the Middle East.

This study accounts for the lessons learnt in the form of a brief "zone theory" and applies the emerging concepts to the Middle East. The "theory" suggests a multifaceted regime composed of many "building blocs" relevant to the region. Main regime measures would be the non-possession by zonal states of prohibited weapons, the non-deployment of such weapons within the zone by any state, and the non-use or non-threat-of-use of prohibited weapons against targets in the zone. The study could be considered a follow-on to the 1990 UN study.

That far, the study is theoretical and static - in a sense, a handbook of experiences and lessons from zonal arrangements to date. The next part deals with the dynamic issue of going from here to there, analyzing sequences of steps and building processes within the ongoing general peace process that

would eventually lead to the establishment of a zone free of weapons of mass destruction in the Middle East.

In an Annex, the delicate problem of how to encourage the peaceful atom and at the same time ban the military one is discussed in greater detail. It examines two successful models, i.e. the regional organization of EURATOM operating in Western Europe and the bilateral ABACC operating in Argentina and Brazil, and selects those elements that could be relevant to the Middle East.

The Report was written by Jan Prawitz (Sweden) and James Leonard (USA), UNIDIR's main consultants on the Middle East project. The Annex was prepared by Mustafa Kibaroglu (Turkey), while he was a research fellow at UNIDIR. I am indebted to all of them: it is a privilege having such collaborators.

Geneva, 6 May 1996

Sverre Lodgaard
Director, UNIDIR

Chapter 1
Introduction

History of the Zone Concept

The concept of the nuclear-weapon-free zone (NWFZ), as it has evolved in political discourse since the mid-1950s, now covers a spectrum of arrangements. Geographically, it ranges from whole continents like Latin America to a corridor in Central Europe, and functionally, it serves the purpose of preventing the spread of nuclear weapons, as well as that of avoiding nuclear war. The expansion of the NWFZ concept to include all weapons of mass destruction has been proposed. The zone issues should, therefore, be studied both in historical and conceptual terms.[1]

The first proposal on regional limitation of nuclear weapons, introduced by the Soviet Union in the United Nations, was tabled in 1956[2]. It referred to Central Europe and was proposed by one superpower and directed at the other. One year later Poland proposed the so called Rapacki-plan on the permanent absence of nuclear weapons from the entire territory of several states in Central Europe[3]. The latter proposal was thus made by one of the states within the prospective zone region.

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[1] Texts of treaties and other important international documents referred to in this report can in most cases be found in:

* *Status of Multilateral Arms Regulation and Disarmament Agreements, Fourth Edition 1992, Volumes 1 and 2*, (UN Sales No. E.93.IX.11) which is current up to 31 December 1992;

* J. Goldblat, *Arms Control. A Guide to Negotiations and Agreements*. PRIO. Sage Publications. London. 1994, current up to October 1993; and/or

* T. N. Dupuy, G. M. Hammerman, *A Documentary History of Arms Control and Disarmament*, R. R. Bowker Company, New York, 1973, including the texts of many old treaties.

The status of arms control treaties, up to 1 January 1995, are included in:

* *SIPRI Yearbook 1995*, SIPRI, Oxford University Press, 1995; and

* *The United Nations DISARMAMENT YEARBOOK*, Vol. 19:1994 (UN Sales No. E.95.IX.1). These two yearbooks are published annually.

[2] UN Document DC/SC.1/41.

[3] UN Document A/PV. 697, also called the Rapacki-plan after the Minister for Foreign Affairs of Poland at the time. Mr Adam Rapacki (1906-1970) was Poland´s Foreign Minister from 1956-1968.

At that time two different approaches to military denuclearization were being pursued in parallel. One was the open-ended and global non-proliferation approach which started with the "Irish" resolution[4] and finally led to the adoption, in 1968, of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)[5]. The purpose of that treaty was to prevent the number of nuclear weapon states from growing beyond the five existing at the time. It was recognized that the risk of outbreak of nuclear war would grow if the number of "fingers on the trigger" was permitted to increase.

The other approach was the regional or zonal one. An important difference between the two approaches is that, while the NPT prevents non-nuclear-weapon parties from "controlling" nuclear weapons but permits them to host the nuclear weapons of others on their territories, zonal agreements prescribe the absence of all nuclear weapons on the territories of a defined region, regardless of who controls them.

The facts that since 1968 no state has overtly established itself as a new nuclear weapon state and that the number of states party to the NPT has since then grown to 182[6], including all five nuclear-weapon states, provides an important context for the discussion of the prospects for the establishment of nuclear-weapon-free zones in the future.

The first result of the zonal approach was the Antarctic Treaty of 1959, which declared the Antarctic continent a demilitarized zone, and by corollary also a zone free of nuclear weapons.

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[4] UN Document A/RES/1665 (XVI).

[5] UN Documents A/RES/2373 (XXII) and S/RES/255. The Treaty on the Non-Proliferation of Nuclear Weapons (UN *Treaty Series*, Vol. 729, No. 10485) was opened for signature on 1 July 1968 and entered into force on 5 March 1970.

[6] This figure does not include Taiwan (Republic of China) which did ratify the NPT in 1970. Among the three depositary governments, only the USA accepted its instrument of ratification. The USSR and the UK did not recognize the government of Taiwan, and the Peoples Republic of China considers "*the signing and ratification of the NPT by Taiwan in the name of China as illegal and null and void*". After the Peoples Republic of China replaced Taiwan (Republic of China) in the China seat in the United Nations in November 1971, the government of Taiwan has been considered a non-governmental organization by the UN and the IAEA, and Taiwan could not conclude an NPT-related safeguards agreement with the IAEA. Taiwan could, however, be considered a *de facto* non-nuclear-weapon party to the NPT. Its nuclear activities are subject to IAEA safeguards according to a unilateral submission in October 1969 (IAEA Document INFCIRC/133) and to the transfer of a US/Taiwan agreement in December 1971 (IAEA Document INFCIRC/158).

Two other multilateral agreements raising barriers to the deployment of nuclear weapons in specific new areas and environments were the 1967 Outer Space Treaty[7] and the 1971 Sea-Bed Treaty[8].

The first major achievement of the regional or zonal approach was the agreement in 1967 between states in the Latin American region to create a nuclear-weapon-free zone on their continent: the Treaty of Tlatelolco. A similar contribution was made in 1985, when the members of the South Pacific Forum agreed to establish a nuclear-weapon-free zone ranging from Latin America to the west coast of Australia and from the Antarctic area to the Equator: the Treaty of Rarotonga. In 1992, the two Korean states entered an agreement on the denuclearization of the Korean peninsula. The agreement has not yet been implemented, however. In June 1995, negotiations within the Organization of African Unity (OAU) on the establishment of a nuclear-weapon-free zone in Africa resulted in the signing of the Treaty of Pelindaba. The zone will be formally established in 1996. The last nuclear-weapon-free zone to be created so far is the ASEAN zone, agreed to in Bangkok in December 1995 by all ten members and prospective members of the Association of South-East Asian Nations. The zone will be formally established in 1996.

Other proposals which never materialized, however, have been put forward for the creation of nuclear-weapon-free zones in South Asia, the Middle East, and various parts of Europe. In the literature, there is a diverse array of proposals for establishing nuclear-weapon-free zones ranging from local communities and cities to continent-sized areas and the entire globe.[9]

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[7] The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty; *UN Treaty Series*, Vol. 610) was opened for signature on 27 January 1967 and entered into force on 10 October 1967. As of 1 January 1995, the treaty had 93 parties including all of the nuclear-weapon states.

[8] The Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof (The Sea-Bed Treaty; UN Document A/RES/2660 (XXV), Annex) was opened for signature on 11 February 1971 and entered into force on 18 May 1972. As of 1 January 1995, the treaty had 90 parties including all of the nuclear-weapon states except France.

[9] The political history of the existing nuclear-weapon-free zones and many of the proposed zones are described in the reports of two United Nations expert studies; see footnotes No. 12 and 13. See also the recent status report document NPT/CONF. 1995/PC. III/5 (12 July 1994).

The possibility of including international sea areas in proposed nuclear-weapon-free zones has also been envisaged, such as in the Baltic Sea, the Mediterranean, the Indian Ocean, the South Atlantic, and the circumpolar Arctic. Such arrangements would require a special legal basis taking into account relevant provisions of international law. Some of those areas, i.e. the Indian Ocean and the South Atlantic, have been presented as elements in "zones of peace", a concept wider than that of nuclear-weapon-free zones since it also includes regional co-operation in economic development as well as the protection of the environment, military restraint and political dialogue.

A new idea was introduced in 1982 with the proposal for the creation of a corridor in Central Europe from which tactical or battlefield nuclear weapons would be withdrawn. Unlike earlier proposals, the area of application would not follow the national borders of the states involved, and no security assurances would apply. The rationale of the proposed measure was to reduce the risk of such weapons becoming immediately involved in any conflict or incident by geographically separating adversaries' tactical or battlefield nuclear weapons in the area[10]. Today, however, the specific proposal for such a corridor in Central Europe has become less relevant due to the dissolution of the Warsaw Pact and the reunification of Germany. The Treaty on the Final Settlement with respect to Germany implies that no nuclear weapons will be stationed on the territory of the former German Democratic Republic, creating a *de facto* nuclear-weapon-free zone in central Europe[11].

Two United Nations comprehensive expert studies on the subject have further contributed to an understanding of the nuclear-weapon-free zone concept. Both studies were launched on the initiative of Finland, which was engaged in the efforts to establish a nuclear-weapon-free zone in the Nordic

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[10] *Common Security*. Report by the Independent Commission on Disarmament and Security Issues. Simon and Schuster. New York 1982. p.147. UN Document A/CN.10/38.

[11] Treaty on the Final Settlement with respect to Germany, signed in Moscow on 12 September 1990, by the Federal Republic of Germany, the German Democratic Republic, France, the UK, the USA and the USSR, Article 5:3.

area. The first report[12] was prepared in 1975; the second report[13] was almost, but not entirely, finalized in 1985.

In 1990, President Mubarak of Egypt proposed the establishment of a zone free of all types of weapons of mass destruction in the Middle East[14]. This proposal expanded the scope of earlier NWFZ concepts to include "*all weapons of mass destruction without exception*", i.e. "*nuclear, chemical and biological*". Geographical and political particularities in the Middle East suggest that the new concept would be suitable for application there.

A number of areas have been declared demilitarized zones according to treaties concluded long ago, most of them before the atomic bomb was invented. Among such areas are many islands in the Mediterranean, as well as in the Baltic and Arctic seas. By implication such areas should today be considered denuclearized as well.

Over the years, local authorities in various countries have declared cities, towns, counties or other sub-national areas to be nuclear-weapon-free zones. Generally, such authorities have no legal competence to take such decisions and would have no possibility to get their "zones" internationally recognized. Such "zones" should therefore be considered expressions of opinion rather than arms control measures.

Reference should finally be made to the possibility, envisaged in the humanitarian laws of war, to establish, by agreement, temporarily demilitarized zones[15].

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[12] *Comprehensive Study on the Question of Nuclear-Weapon-Free Zones in all its Aspects.* United Nations Document A/10027/Add. 1 (UN Sales No. E.76.1.7).

[13] *Study on the Question of Nuclear-Weapon-Free Zones*. Although, the report was not entirely finalized, it "exists" as an annex to a letter of 9 February 1985 from the Chairman of the expert group, Dr Klaus Törnudd of Finland, to the Secretary General. The formal status of this annex is subject to dispute. It is, however, very informative.

[14] UN Document CD/989, 20 April 1990.

[15] Protocol Additional to the Geneva Conventions of 12 August 1949 and Relating to the Protection of Victims of International Armed Conflict (Protocol I), Art. 60.

Chapter 2
Background

The Global Treaties

Several arms control treaties with a global application are today sufficiently established to constitute a natural background to any future nuclear-weapon-free zone or zone free of weapons of mass destruction. These are primarily the 1925 Geneva Protocol[16], the 1963 Partial Test Ban Treaty (PTB)[17], the 1968 Non-Proliferation Treaty (NPT)[18], 1972 Biological Weapons Convention (BWC)[19], and the 1993 Chemical Weapons Convention (CWC)[20].

Among them, the NPT is the more important and the more complicated, both because nuclear weapons are considered most dangerous and because the NPT divides the parties into two groups: the five states which possess nuclear weapons and all the other states which do not have such arms. For the establishment of zones free of weapons of mass destruction, the BWC and the CWC would play an equally fundamental role as basic norms, similar to the

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[16] The Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous, or Other Gases, and of Bacteriological Methods of Warfare (League of Nations *Treaty Series*, Vol. XCIV (1929), No. 2138) was signed on 17 June 1925 and had 132 parties as of 1 January 1996.

[17] The Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (United Nations *Treaty Series*, Vol. 480, No. 6964) entered into force in October 1963 and had, as of 1 January 1995, 123 parties including the nuclear-weapon states Russia, the UK, and the USA.

[18] The Treaty on the Non-Proliferation of Nuclear Weapons (UN *Treaty Series*, Vol. 729, No. 10485) was opened for signature on 1 July 1968 and entered into force on 5 March 1970.

[19] The "Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction" entered into force on 26 March 1975 and had 133 parties as of 1 January 1995.

[20] The "Convention on the Prohibition of the Development, Production, Stockpiling, and Use of Chemical Weapons and on Their Destruction" was opened for signature on 13 January 1993. As of 12 December 1995, 160 states have signed it. According to the treaty´s Article XXI:1, "*the Convention shall 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*", i.e., on 13 January 1995 at the earliest. But by that date, however, only 19 states had ratified the convention (on 1 January 1996, there were 48 parties with some 14 more imminent) and it is now widely assumed that the treaty may not enter into force before early 1997.

NPT, but without dividing their parties into "haves" and "have-nots". When all of these treaties have achieved universal coverage — which only the NPT today approaches — the whole world will be a biological-and-chemical-weapon-free zone. As long as the five nuclear powers have not implemented nuclear disarmament, however, the world will not be a global nuclear-weapon-free zone. Zones free of weapons of mass destruction could be implemented assuming that there are no biological and chemical weapons around at all, but special provisions would be necessary to manage the existence of nuclear weapons of the nuclear-weapon states in the wider environment of the zone. So far no multilateral treaty restricts the possession by states of long range missiles, although the idea of a "missile non-proliferation instrument" has been discussed.

The 1925 Geneva Protocol

The use of chemical agents in war on a limited scale has been known since the beginning of history. Attempts were already made in the 19th century to prohibit such use by international agreement[21]. But it was during the First World War that such use took place for the first time on a massive scale. The combination of industrial production of agents and greatly improved transport capability provided the tools for mass destruction. The general public was horrified and a political basis emerged for a modern and general prohibition.

After some years of negotiation, the 1925 Geneva Protocol was agreed upon. The Protocol refers to the fact that "*the use in war of asphyxiating, poisonous or other gases, and all analogous liquids, materials or devices*" is prohibited "*in Treaties to which the majority of Powers of the world are Parties*". It reaffirms these prohibitions and extends them to the "*use of*

[21] The 1868 St. Petersburg Declaration to the Effect of Prohibiting the Use of Certain Projectiles in Wartime banned the use between the parties of "*any projectile of a weight below 400 grams, which is either explosive or charged with fulminating or inflammable substances*"; the 1874 Brussels Declaration concerning the Laws and Customs of War prohibited the "*employment of poison or poisoned weapons*" (Art. XIII); the 1899 Hague Declaration (IV, 2) concerning asphyxiating gases added a prohibition on the "*use of projectiles the sole object of which is the diffusion of asphyxiating or deleterious gases*"; and the 1907 Hague Convention (IV) respecting the laws and customs of war on land repeated these provisions (Art. 23a). These early agreements have mostly historical interest today, as some of the contracting parties at the time do not exist anymore, and as most states of today did not exist at the time.

bacteriological methods of warfare". The Protocol was intended to become part of customary international law[22].

The Protocol thus prohibits "the use in war" of chemical and biological weapons, but not the acquisition and possession of such weapons. No verification system is envisaged, although the UN Secretary General can today investigate on the basis of reports on possible violations. When ratifying the Protocol, many of the parties filed reservations to the effect that they considered themselves bound by the Protocol provisions only in relation to other parties observing them. Therefore, the Protocol became for these parties a "no-first-use" agreement.

The implementation of the Protocol did feature some violations, but it passed its great test during the Second World War, when chemical weapons were not used. As a consequence of the Vietnam war, the Protocol became widely discussed in the late 1960s and 1970s. Many states, including states which did not exist in the 1920s, adhered to the Protocol. Some parties which had filed reservations withdrew them, making the Protocol a pure "non-use" obligation for them. An attempt was made in the UN General Assembly to declare the Protocol customary law binding upon all states whether they were parties to the Protocol or not. A resolution[23] to that effect was adopted, although three states voted against it and many abstained, a result also reflecting the controversial war in Vietnam. Today, however, the provisions of the Protocol could be considered customary law. The Protocol is thus an important basis for the modern treaties agreed upon in the 1970s and 1990s prohibiting the acquisition and possession of biological and chemical weapons.

The 1963 Partial Test Ban

The issue of prohibiting nuclear weapon test explosions emerged in 1954 as a result of the 15 megaton "Bravo" surface shot at Bikini on 1 March 1954. This explosion caused radioactive debris to settle on the Japanese fishing vessel Fukurya Maru (Lucky Dragon), killing one crew member and severely hurting several others.

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[22] The Protocol´s preamble includes the following: *To the end that this prohibition shall be universally accepted as a part of International Law, binding alike the conscience and practice of nations*... .

[23] UN Document A/RES/2603 A (XXIV) was adopted by a vote of 80 in favor, 3 against, and 36 abstentions (7 absent).

The event turned the attention of the world to the effects of nuclear explosions. Prime Minister Nehru was the first to request a test ban in a statement on 2 April 1954 to the Parliament of India. His statement appealed for "some sort of what may be called [a] 'standstill agreement' in respect, at least, of these actual explosions... ." Nehru's proposal was subsequently forwarded to the United Nations Disarmament Commission[24]. Many years of complicated negotiations between the major powers followed. In 1963, a compromise agreement on a Partial Test Ban was reached, and all the states of the world were invited to sign.

The treaty prohibits all nuclear weapon test explosions or other nuclear explosions in the atmosphere, in outer space and under water (Art. I:1a). Nuclear explosions underground are generally permitted, except if causing radioactive debris "*to be present*" outside the territorial limits of the testing state (Art. I:1b). No verification machinery is prescribed. But it is understood that the prohibited tests would spread radioactive debris world-wide and thus be easily disclosed.

The Partial Test Ban provides a serious obstacle for a newcomer state party wanting to become nuclear: although testing underground is permitted by the treaty, such tests are complicated and expensive.

The treaty did not stop the testing conducted by the nuclear-weapon states. They continued their testing at almost the same rate underground. However, as decided by the 1995 Extension Conference of the NPT Parties, a comprehensive test ban is scheduled to be finalized in 1996. If widely adhered to, such a comprehensive ban would provide an important barrier to the further proliferation of nuclear weapons and an important consideration in the constitution of new nuclear-weapon-free zones.

The 1968 Non-Proliferation Treaty

The development of the non-proliferation regime up to 1990 is very much a success story. A large majority of states, including all recognized nuclear weapon states, became parties to the NPT over the years[25]. Furthermore, after 1968, no additional state established itself as a new nuclear weapon power, and

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[24] UN Document DC/44 and Corr. 1.

[25] Only 11 states were non-parties.

dramatic nuclear disarmament measures were finally agreed upon. Above all, in May 1995, the parties extended the duration of the NPT indefinitely[26].

Therefore, the provisions and implementation machinery of the non-proliferation regime would offer a convincing basis for negotiating the establishment of nuclear-weapon-free zones in the future[27]. Whenever a new nuclear-weapon-free zone is established, most potential states would already be parties to the NPT. Indeed, the NPT itself foresees that role in its Article VII, indicating that participation in a nuclear-weapon-free zone would define extended commitments for NPT parties[28].

When the parties to the NPT extended the duration of the treaty in May 1995, they also adopted "*Principles and Objectives for Nuclear Non-Proliferation and Disarmament*", encouraging the establishment of nuclear-weapon-free zones as a matter of priority[29].

At the time the non-proliferation of nuclear weapons was negotiated, before 1968, the attention focused on four principal issues. The major and immediate issue was the extent to which the nuclear-weapon powers would be

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[26] Document NPT/CONF. 1995/32/DEC. 3 (11 May 1995), contained in an annex to document NPT/CONF. 1995/32 (Part I).

[27] See J. Simpson, *Inter-Relations Between Regional and Global Approaches to Nuclear Non-Proliferation*, in A. Mack (Ed.), *Nuclear Policies in Northeast Asia*, Research Report UNIDIR/95/16 (UN Sales No. GV.E.95.0.8).

[28] The NPT, Art. VII reads: "*Nothing in this treaty affects the right of any group of states to conclude regional treaties in order to assure the total absence of nuclear weapons in their respective territories*". For a recent (12 July 1994) assessment of this role of the NPT, see *Implementation of Article VII of the Treaty on the Non-Proliferation of Nuclear Weapons* (Document NPT/CONF. 1995/PC. III/5).

[29] Principles and Objectives for Nuclear Non-Proliferation and Disarmament [Document NPT/Conf. 1995/32/DEC. 2 contained in an annex to document NPT/CONF. 1995/32 (Part I)]. The relevant paras (5-7) read:

"*The conviction that the establishment of internationally recognized nuclear-weapon-free zones, on the basis of arrangements freely arrived at among the states of the region concerned, enhances global and regional security is reaffirmed.*

The development of nuclear-weapon-free zones, especially in regions of tension, such as in the Middle East, as well as the establishment of zones free of weapons of mass destruction should be encouraged as a matter of priority, taking into account the specific characteristics of each region. The establishment of additional nuclear-weapon-free zones by the time of the Review Conference in the year 2000 would be welcome.

The co-operation of all the nuclear-weapon states and their respect and support for the relevant protocols is necessary for the maximum effectiveness of such nuclear-weapon-free zones and the relevant protocols."

permitted to delegate control of their nuclear weapons to allies. The agreement on the NPT in 1968 solved that problem by prohibiting any control-sharing (Art. I)[30]. As a result, the world community of states was divided into two spheres: the five recognized nuclear weapon powers and the many non-nuclear weapon states[31]. This world order also provided the basis for subsequent negotiations on nuclear disarmament resulting in the 1972 SALT and subsequent agreements.

The second, not so immediate, but similarly important issue, was the prevention of independent acquisition of nuclear weapons by new states. The NPT agreement proceeded to solve that problem both legally (Art. II) and by means of a continuous effort including several subsidiary arrangements, e.g.,

[30] The question of whether this formula of no-control-sharing would also stay in effect in wartime has been discussed. During the ratification process in the USA, Mr. Dean Rusk, Secretary of State at the time, explained to the US Congress that the NPT "*does not deal with arrangements for deployment of nuclear weapons within Allied territory, as these do not involve any transfer of nuclear weapons or control over them unless and until a decision were made to go to war, at which time the treaty would no longer be controlling*" (Documents on Disarmament 1968, p. (478) 495). This statement, indicating an interpretation that the NPT would be out of force in case of war, reflected a previous agreement within the NATO alliance. However, in 1985, the third Review Conference of the NPT parties unanimously adopted a final declaration stating *inter alia* that "*the Conference agreed that the strict observance of the terms of Articles I and II remains central to achieving the shared objectives of preventing* under any circumstances (emphasis added) *the further proliferation of nuclear weapons and preserving the Treaty´s vital contribution to peace and security, including the peace and security of non-parties*" (Document NPT/CONF. III/64/I, Annex I), thus indicating the opposite interpretation. While the original statement primarily referred to a possible East-West conflict, the end of the Cold War and the prospects for local wars in the future would make a more restrictive interpretation reasonable as was demonstrated in the Gulf war in 1991.

[31] According to the NPT, Art. IX:3, "*a nuclear weapon state is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967*". This provision was intended to prevent a race for nuclear-weapon power status by prospective treaty parties before signing. The formula defines China, France, Great Britain, the Soviet Union (after 24 December 1991 succeeded by the Russian Federation) and the United States as nuclear weapon states. India, which is not a party to the NPT, did manufacture and explode a nuclear device "for peaceful purposes" in May 1974, but is usually not considered a nuclear weapon power. In March 1993, it was revealed that South Africa had fabricated six nuclear explosive devices. These devices were later dismantled and, in 1991, South Africa became a non-nuclear weapon party to the NPT.

the IAEA safeguard system[32], the Nuclear Suppliers Group (London Club)[33], the Zangger Committee[34], transfer restrictions, and physical protection measures[35].

The third issue was nuclear disarmament to be negotiated "*in good faith*" (Article VI). In recent years, this requirement was finally addressed in a series of major nuclear disarmament agreements, including INF in 1987[36], START in 1991[37] and START II in 1993[38]. Most important for the establishment of nuclear-weapon-free zones has been the withdrawal of non-strategic nuclear weapons from theatres of deployment and from ships, unilaterally declared in

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[32] As laid down in IAEA documents INFCIRC/66/Rev.2; INFCIRC/153 (The Blue Book); and INFCIRC/359. Compare also *Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System* (IAEA Document GC(39)/17, 22 August 1995).

[33] For trigger list, see IAEA documents INFCIRC/254/Rev.1/Part1 and 2; and INFCIRC/254/Rev.1/Part 1/Mod.1.

[34] For trigger list, see IAEA document INFCIRC/209 with additions and modifications. The committee is named after its first Chairman, Dr Claude Zangger of Switzerland.

[35] Physical protection measures are recommended in IAEA document INFCIRC/225/Rev.3. International measures are regulated in "The Convention on the Physical Protection of Nuclear Material", signed in Vienna on 3 March 1980 and entered into force on 8 February 1987 (IAEA document INFCIRC/274/Rev.1). The Convention had 54 parties as of 1 November 1995. A discussion of possible security improvements are included in *Measures Against Illicit Trafficking in Nuclear Materials ond Other Radioactive Sources* (IAEA Document GC(39)/19, 21 August 1995).

[36] *The Treaty between the USA and the USSR on the Elimination of their Intermediate-Range and Shorter-Range Missiles* (INF Treaty) entered into force on 1 June 1988.

[37] *The Treaty between the USA and the USSR on the Reduction and Limitation of Strategic Offensive Arms* (START) was signed on 31 July 1991. The treaty entered into force on 5 December 1994 after Ukraine became a party to the NPT.

[38] *The Treaty between the USA and the Russian Federation on Further Reduction and Limitation of Strategic Offensive Arms* (START II) was signed by Presidents Bush and Yeltsin in Moscow on 3 January 1993. The entry into force procedure began after START became operative.

the fall of 1991 by the USA and the USSR[39]. Many of these will be dismantled; others will be kept in centrally located storages.

Beside these reduction agreements on nuclear hardware, the nuclear weapon powers have also agreed to institute a number of soft-ware and nuclear confidence- and security-building measures, such as pre-notification of missile launchings[40], the establishment of nuclear risk reduction centers[41] and communication lines[42], the lowering of alert levels of their remaining strategic

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[39] Unilateral declarations made by Presidents Bush of the USA and Gorbachev of the USSR, on 27 September and 5 October 1991 respectively.

The relevant excerpt of President Bush´s declaration reads: *"The USA* [will] *eliminate its entire world-wide inventory of ground-launched short-range nuclear weapons, that is theatre nuclear weapons. We will bring home and destroy all of our nuclear artillery shells and short-range ballistic missile warheads. We will, of course, ensure that we preserve an effective air-delivered nuclear capability in Europe....Recognizing further the major changes in the international military landscape, the USA will withdraw all tactical nuclear weapons from its surface ships, attack submarines, as well as those nuclear weapons associated with our land-based naval aircraft. This means removing all nuclear Tomahawk cruise missiles from US ships and submarines, as well as nuclear bombs aboard aircraft carriers. The bottom line is that under normal conditions, our ships will not carry tactical nuclear weapons. Many of these land- and sea-based warheads will be dismantled and destroyed. The remaining will be secured in central areas where they would be available if necessary in a future crisis"*.

President Gorbachev´s matching declaration reads: *"All nuclear artillery ammunition and nuclear warheads for tactical missiles will be destroyed; nuclear warheads of anti-aircraft missiles will be removed from the army and stored in central bases. Part of them will be destroyed. All nuclear mines will be destroyed. All tactical nuclear weapons should be removed from surface ships and multipurpose submarines. These weapons, as well as nuclear weapons on ground-based naval aviation, shall be stored in central storage sites and a portion shall be eliminated"*.

For the full text of the Bush and Gorbachev statements, see, e.g., J. Goldblat, *Arms Control. A Guide to Negotiations and Agreements*. PRIO. Sage Publications. London. 1994. pp. 629-632 and 637-639 respectively.

[40] Important are the *Agreement between the USA and the USSR on Measures to Reduce the Risk of Outbreak of Nuclear War* (US-Soviet Nuclear Accidents Agreement) of 30 September 1971; the *Agreement Between the USA and the USSR on Notifications of Launches of Intercontinental Ballistic Missiles and Submarine-Launched Ballistic Missiles* of 31 May 1988; and the *Agreement Between the USA and the USSR on Reciprocal Advance Notification of Major Strategic Exercises* of 23 September 1989.

[41] *Agreement Between the USA and the USSR on the Establishment of Nuclear Risk Reduction Centers* of 15 September 1987.

[42] *Memorandum of Understanding Between the USA and the USSR Regarding the Establishment of a Direct Communications Link* (Hot Line Agreement) of 20 June 1963; *Agreement Between the USA and the USSR on Measures to Improve the Direct Communications Link* of 30 September 1971; and *Exchange of Notes Between the USA and the USSR to Arrange*

nuclear forces, the detargeting of weapons aimed at each other, and co-operation in development of measures to improve the security and safety of nuclear weapons.

When extending the duration of the NPT in May 1995, the parties, as mentioned above, adopted *Principles and Objectives for Nuclear Non-Proliferation and Disarmament*, outlining a program for nuclear disarmament including a comprehensive nuclear test ban no later than 1996 (the Partial Test Ban was already in force when the NPT was agreed upon); a cut-off of the production of fissile material for nuclear weapons; and continued reductions in, and the ultimate elimination of, nuclear weapons.

The fourth issue discussed in the 1960s was security guarantees to the many non-nuclear-weapon states agreeing to renounce their option to acquire nuclear weapons. This problem was addressed in separate documents outside the NPT framework. In June 1968, the UN Security Council adopted a resolution outlining rules for assisting non-nuclear-weapon states parties to the NPT subject to attack or threat of attack by nuclear weapons[43]. Later, all nuclear-weapon powers extended unilateral "negative"[44] assurances that non-nuclear-weapon states would not be subject to attack or threat of attack with nuclear weapons, subject to various conditions[45]. In April 1995, the UN Security Council adopted a resolution taking

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for Faximile Communication in Addition to Their Direct Communications Link of 17 July 1984. Agreements were also reached to establish hot lines between the USSR and France in 1966, the UK in 1967, and FR Germany in 1989. The USA established a "Continuous Communications Link" with Belarus in 1993.

[43] UN Document S/RES/255 (1968) which "*welcomes the intention expressed by certain states* (USSR, USA, UK) *that they will provide or support immediate assistance, in accordance with the Charter, to any non-nuclear-weapon State Party to the Treaty on the Non-Proliferation of Nuclear Weapons that is the victim of an act or an object of a threat of aggression in which nuclear weapons are used*" (Op. 2). The value of this guarantee was limited, however, as four of the five nuclear-weapon states at the time were permanent members of the Security Council with a right of veto.

[44] "Negative" guarantees imply that the guarantor abstains from nuclear aggression, as opposed to "positive" guarantees which imply that the guarantor actively supports a victim of aggression.

[45] The content of these unilaterally declared guarantees is summarized in *Compilation of Basic Documents Relating to the Question of Effective International Arrangements to Assure Non-Nuclear-Weapon States Against the Use of Nuclear Weapons* (UN Document CD/SA/WP.15, 16 March 1993) and in *Developments with Regard to Effective Arrangements to Assure Non-Nuclear-Weapon States Against the Use or Threat of Use of Nuclear Weapons* (Document NPT/CONF. 1995/PC.III/6, 12 July 1994). See also *The United Nations DISARMAMENT YEARBOOK* VOL. 14:1989, pp 179 - 180. The new "Basic Provisions of the

note of both the existing negative and positive nuclear assurances according to which the five nuclear-weapon states undertook to provide "*immediate assistance, in accordance with the UN Charter, to any non-nuclear-weapon state party to the NPT that is a victim of an act of, or an object of a threat of, aggression in which nuclear weapons are used*" (Op. 7)[46].

Another important provision of the NPT is its recognition that the development of nuclear energy production for peaceful purposes is legitimate for all states, and indeed encouraged (Art. IV). While the NPT aims to discourage and prevent countries from going nuclear in the military domain, it actively encourages countries to go nuclear in the civil domain.

In 1991, the dissolution of the Soviet Union created a major new problem concerning the future control over Soviet nuclear weapons. This problem, initially involving about 33,000 nuclear weapons[47], emerged as a new Article I issue and the number one proliferation issue of the time. The legal part of the problem has since been solved[48], but the dismantlement process scheduled in the nuclear weapon reduction agreements will take many years to be accomplished.

Military Doctrine of the Russian Federation" adopted on 2 November 1993 (Decree No. 1833) does not include the USSR no-first-use declaration of 12 June 1982, however.

[46] UN Document S/RES/984 (1995), ignominiously adopted on 11 April 1995, Op. 7. The basic declarations were made on 5 and 6 April 1995 by the Russian Federation (UN Document S/1995/261), the UK (S/1995/262), the USA (S/1995/263), France (S/1995/264), and China (S/1995/265). Again, the value of this guarantee is limited as the nuclear-weapon states are also permanent members of the Security Council with a right of veto. The "threshold states" are not, however.

[47] T. B. Cochran, *Nuclear Warhead Destruction,* in *Security, Disarmament, and Confidence-Building in the CIS Context*. DISARMAMENT Topical Papers 19. United Nations. New York. 1994. pp 101-109. The author estimates that *"the Soviet nuclear warhead stockpile peaked in 1986 at about 45,000 warheads*". Reductions since then have left "*an estimated 33,000 warheads intact in Russia*" in September 1993. He also reports that "*the stockpile of the United States nuclear warheads peaked in 1967 at just over 32,000 warheads*" and that the mid-1993 inventory has been reduced to the level of late 1958, i.e., 17,000 warheads.

[48] As of 24 December 1991, the Russian Federation has "continued" the function of the Soviet Union as a member state of the United Nations and a permanent member of its Security Council, as a nuclear-weapon power and a depositary state under the NPT; and as a party to a number of bilateral and multilateral arms control treaties acceded to by the Soviet Union. All other 14 new republics which became independent upon the dissolution of the Soviet Union have acceded to the NPT as non-nuclear-weapon states. All of the tactical and most of the strategic nuclear weapons of the former Soviet Union have been transferred to the territory of the Russian Federation. Some strategic nuclear weapons remaining in Ukraine are firmly controlled by Russian authorities.

The START II reductions may not be finalized until 2003[49]. The current turbulent transition process in Russia also poses risks of diversion of nuclear warheads and weapon-grade fissionable material to illegitimate recipients abroad. It should be acknowledged, however, that control over former Soviet Union nuclear weapons has so far been exercised with extraordinary responsibility.

A continuing problem is that some states, so-called "threshold states", remain non-parties[50] and are suspected of having undertaken advanced preparations for acquiring nuclear weapons. Non-parties to the NPT which are today recognized in this category are Israel, Pakistan, India, and until recently, South Africa. In addition, Iraq, which is party to the NPT, was in 1991, following the Gulf war, found to have prepared for the production of nuclear weapons and to have violated the safeguards procedures stipulated by the NPT. As a result, Iraq became the subject of special action by the United Nation´s Security Council. The Democratic People´s Republic of Korea, another party to the NPT, has been reluctant to open all its nuclear facilities to the IAEA inspectors and has been suspected of non-compliance[51].

The "threshold states" have long ignored the considerable outside political pressure to join the NPT, and it seems unrealistic to persuade those states to join the treaty in the short run. After all, the NPT was a Cold War compromise focusing on Europe and has turned out to be inadequate for solving the security problems in certain other regions of the world. Those remaining problems might be solved by tailoring special regimes for them, i.e., by establishing new nuclear-weapon-free zones in such troubled regions, making the non-proliferation regime complete and truly global. Among such possible zones —

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[49] According to T. B. Cochran, as of July 1995, 8750 nuclear weapons remain deployed in the US arsenal, and about 12500 remain in the Russian arsenal. See Cochran, *Dismantlement of Nuclear Weapons and Disposal of Fissile Material from Weapons*, Paper prepared for the Round Table "Economic and Social Developments in the Former Soviet Union and the Problem of Disarmament" (3-4 July 1995). According to the *START Memorandum of Understanding July 1, 1995* (Arms Control Today, Vol. 25 No. 9, November 1995, p. 30), there were 8711 and 6833 strategic nuclear weapons deployed in the USA and Russia respectively as enumerated according to the START counting rules.

[50] As of 1 January 1996, there were 182 parties to the NPT, a figure of success that should be compared to the number of 185 UN member states. The non-parties to the treaty include Andorra, Angola, Brazil, Cook Islands, Cuba, Djibouti, *India*, *Israel*, Niue, Oman, and *Pakistan* (recognized threshold states underlined). However, Brazil (1994) and Cuba (1995) are bound by the Treaty of Tlatelolco. The Cook Islands (1985) and Niue (1986) are bound by the Treaty of Rarotonga.

[51] See separate section below on the Korean Peninsula.

which were proposed in the past and could be brought up for negotiation again — are the Middle East[52], the Korean peninsula or a wider East Asian area, and South Asia[53].

The 1972 Biological Weapons Convention

Since the agreement on the Geneva Protocol, it has been understood that biological and chemical weapons would be considered together. However, when the issue of such weapons entered the agenda of arms control negotiations with the objective of prohibiting not only their use but also their acquisition and possession, keeping them together turned out to be impossible. Prohibiting biological weapons was considered relatively straightforward while a matching measure on chemical weapons for obvious industrial reasons was much more complicated.

A split between the two was agreed upon, and a separate convention prohibiting biological and toxin weapons was opened for signature in 1972. Toxins are the very poisonous chemicals produced by biological weapon organisms; they cause the illnesses which are considered to be the weapons' effects.

The convention prohibits the development, production, stockpiling, or other acquisition of microbial or other biological agents or toxins having no peaceful usage justification. Delivery means for biological weapons were also prohibited (Art. I:1). The parties were obliged to destroy all of their biological and toxin agents for military use within nine months after the entry into force of the convention (Art. I:2). The convention refers to the 1925 Geneva Protocol prohibiting the use of biological and toxin weapons (Art. VIII).

No special verification machinery was established to monitor the implementation of the convention (Arts. V-VII). To compensate for the lack of verification activities and to enhance confidence in the convention, many

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[52] In 1990, the UN Secretary General submitted a report on possible steps facilitating the establishment of a nuclear-weapon-free zone in the Middle East, which was adopted by the General Assembly the same year. *Towards a Nuclear-Weapon-Free Zone in the Middle East*. UN document A/45/345 (Sales No. E.91.IX.3.). The UN General Assembly unanimously passed the report (A/RES/45/52 Op. 8).

[53] The establishment of a nuclear-weapon-free zone in South Asia has been on the United Nation´s agenda since 1974. While many problems have been solved, there is still not sufficient consensus on principal matters for agreement. The most recent resolution on the issue was adopted by the UN General Assembly in December 1995 (UN document A/RES/50/67).

parties have in recent years agreed to implement voluntary confidence-building and transparency-providing measures, exchanging regular reports on their peaceful activities in the field. A special formal *ad hoc* conference among the parties was held in 1994 to discuss such matters[54].

Each party is expected to provide assistance to other parties "*exposed to danger as a result of violation of the Convention*". The decision to assist is left to the UN Security Council (Art. VII).

The 1993 Chemical Weapons Convention

After the entry into force of the Biological Convention in 1975, negotiations continued on a similar ban against chemical weapons; but it was only in 1993 that the much more complicated Chemical Weapons Convention could be opened for signature. To date, the Convention has not yet entered into force. A difficult problem is how to monitor the large chemical industry producing products for peaceful purposes (sometimes very similar to the ones used in military applications).

The resulting convention is very elaborate; it comprises 200 pages including the annexes. It prohibits the development, production, other acquisition, stockpiling, and transfer of chemical weapons by any party (Art. I:1a). The convention also prohibits the use and preparations for use of chemical weapons (Art. I:1b). The parties are obliged to destroy all chemical weapons in their possession as well as those earlier abandoned on the territories of other parties, and all of their chemical weapons production facilities (Art.I:2-4). Such destruction shall commence no later than two years, and be finished no later than ten years, after the entry into force of the convention (Arts. IV:6 - V:8). The parties are obliged to refrain from using "*riot control agents as a method of warfare*" (Art. I:5).

The convention establishes a special "Organization for the Prohibition of Chemical Weapons" to manage the considerable reporting, monitoring, and inspection activities foreseen to verify the proper implementation of the agreement (Art. VIII), including machinery for decision-making among the parties. A Preparatory Commission is already working in the Hague to set up the Organization. Both the work load for the "Organization´s" routine verification

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[54] The Final Declaration of the Conference is included in Document BWC/SPCONF/1, Part II.

activities and its right to undertake intrusive fact-finding missions significantly exceed those prescribed by the NPT.

Countries attacked or threatened by chemical weapons are entitled to assistance and protection extended by other parties through the "Organization" (Art. X:8-11). Each party to the Convention is assumed to support the "Organization" and provide facilities to enable assistance to victim parties, if required (Art. X:7).

Even on optimistic assumptions, it will take a long time to abolish chemical weapons. Assuming that the convention shall enter into force in early 1997, it will take until 2007 before all chemical weapons and all chemical weapons production facilities in member states have been destroyed.

A bilateral "Agreement between the USA and the USSR on Destruction and Non-Production of Chemical Weapons and on Measures to Facilitate the Multilateral Convention on Banning Chemical Weapons" was signed in 1990 to prepare for the finalization of the multilateral convention then under negotiation. It did not enter into force.

Existing Zones

So far, four nuclear-weapon-free zones have been constituted in relatively highly populated areas[55]. The Tlatelolco Treaty[56] of 1967, the Rarotonga Treaty[57] of 1985, and the Pelindaba Treaty[58] created such zones in Latin America, the South Pacific, and Africa respectively. A fourth will soon be

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[55] The term "densely populated" area is frequently used to distinguish the Latin American and the South Pacific zones from the Antarctic, which some states for political reasons prefer to designate as a "populated" area rather than the "unpopulated" place it is otherwise considered to be.

[56] The Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (*UN Treaty Series*, Vol. 634, No. 9068). The status of the treaty, including its recent amendments, is reviewed in Document NPT/CONF. 1995/PC. III/10* (15 September 1994).

[57] The South Pacific Nuclear Free Zone Treaty (*UN Treaty Series* No. 24592). The status of the treaty is reviewed in Document NPT/CONF. 1995/PC. III/11 (12 July 1994).

[58] *Report of the Joint Meeting of the OAU/UN Group of Experts and the Intergovernmental Group of Experts to Prepare a Draft Treaty on an African Nuclear-Weapon-Free Zone*. The Pelindaba Text of the African Nuclear-Weapon-Free Zone Treaty is reproduced in UN Document A/50/426, 13 September 1995. The treaty has been described by D. Fischer in *The Pelindaba Treaty: Africa Joins the Nuclear-Free World* in Arms Control Today, Vol. 25, No. 10, December 1995/January 1996, pp. 9-14.

established in the ASEAN[59] area. Denuclearization of the Korean peninsula was declared in 1992 by the two Korean states[60], but the agreement has not been implemented. In addition, a demilitarization regime for the Antarctica was agreed upon in 1959[61].

Antarctica

According to the 1959 Antarctic Treaty, the "white continent" has been declared a demilitarized zone (Art. I). This entails that Antarctica shall also be nuclear weapon free. At the same time, territorial claims in Antarctica were frozen (Art. IV)[62]. The treaty prohibits "*any measure of a military nature*" in Antarctica (Art. I:1), but does not explicitly forbid the introduction of nuclear weapons onto the continent. The carrying out of nuclear explosions in the area has been explicitly prohibited, however (Art. V:1). The Antarctic Treaty applies to the entire geographical area south of the latitude of 60°S, but does not limit the rights of any state under international law with regard to the high seas[63] (Art. VI).

As of 1 January 1996, the Antarctic Treaty had 42 parties, including all nuclear-weapon powers. "Consultative parties"[64] in the treaty have the right to undertake the verification of compliance with the treaty by inspecting everywhere in the Antarctic zone (Art. VII).

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[59] Association of South-East Asian Nations. Treaty on the Southeast Asia Nuclear Weapon-Free Zone (15 December 1995).

[60] Joint Declaration of South and North Korea on the Denuclearization of the Korean Peninsula.

[61] The Antarctic Treaty (*UN Treaty Series*, Vol. 402, No. 5778).

[62] Seven states have filed territorial claims in Antarctica: Argentina, Australia, Chile, France, New Zealand, Norway, and the United Kingdom. The Argentine, Chilean, and UK claims include mutual overlaps.

[63] As no national territorial jurisdiction applies in Antarctica, no state claims territorial water or exclusive economic zones within the area, defining all Antarctic sea waters as "high seas".

[64] As of 1 January 1996, 26 parties were so-called consultative parties according to the treaty´s Art. IX, i.e., the initial parties from the 1959 negotiations (Art. IX:1) or parties "*conducting substantial scientific research activity*" in Antarctica (Art. IX:2). Such parties are entitled to participate in regular consultative meetings on the management of treaty-related affairs. All nuclear-weapon powers are consultative parties.

Latin America

The Latin American zone came into being as a result of a five year process — the first signing of the treaty took place in 1967 — following the first endorsement of the proposal by the UN General Assembly in 1962[65].

In the central provisions of the treaty the zonal states undertake to use nuclear material exclusively for peaceful purposes, not to possess nuclear weapons and not to permit any presence of such weapons in their territories. The parties also undertake not to engage themselves in, or to encourage, any nuclear weapon activity (Art. 1).

The geographical scope of the zone comprises all Latin American and Caribbean states (Art. 25), all dependant territories of extra-continental states (Protocol I), and also, when the treaty enters into full force, considerable adjoining Atlantic and Pacific sea areas (Art. 4:2).

Protocol II prescribes that nuclear weapon powers would respect the status of the zone and that they would refrain from using or threatening the use of nuclear weapons against zonal states. "Transit" of nuclear weapons by nuclear-weapon powers through the zone or port calls by warships of such powers are not regulated in the Tlatelolco Treaty itself[66].

The treaty establishes a verification system including both the application of IAEA safeguards to all nuclear activities of zonal states and the possibility of "special inspections" in cases of suspected non-compliance (Art. 12-16).

It should be noted that the treaty explicitly allows the parties to carry out nuclear explosions for peaceful purposes, subject to special control procedures (Art. 18).

The entry into force process is still ongoing. As of 1 January 1996, the treaty is in force for 30 states. It is not yet in force for 3 states eligible to be parties, although all eligible states have now signed. During the years 1990 to 1992, the treaty was amended in several respects in order to attract more

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[65] UN Documents A/C.1/L.312/Rev.2 and A/RES/1911 (XVIII).

[66] The preparatory commission drafting the Tlatelolco Treaty stated that 'transit', in "*the absence of any provision in the Treaty, must be understood to be governed by the principles and rules of international law*" and that "*it is for the territorial State, in the free exercise of its sovereignty, to grant or deny permission for such transit in each individual case*" (Document COPREDAL/76 p. 8, or UN document A/6663). The transit issue was thus considered a bilateral issue between the flag state and the port state in each case and, in particular, did not contradict the traditional US rights to pass the Panama Canal with nuclear weapons.

signatories. All dependencies are now subject to the zonal regime in accordance with Protocol I[67].

Protocol II, the guarantee-protocol, has been in force for all nuclear weapon states since 1979. The inclusion of international sea areas (or excessively extended territorial waters[68]) into the zonal area, however, was disputed by the nuclear-weapon powers in interpretative statements.

The South Pacific

The South Pacific Nuclear Free Zone is the second to have been established in a densely populated area. The proposal to establish such a zone was endorsed by the UN General Assembly in 1975[69]. But it was only in 1985 that the states members of the South Pacific Forum concluded the Rarotonga Treaty.

The central undertakings of the parties are not to possess nuclear weapons (Art. 3) and to prevent the stationing of such weapons on their territories (Art. 5). The treaty explicitly prohibits nuclear testing (Art. 6, Protocol 3) and the dumping of radioactive waste at sea (Art. 7) within the entire zonal area. Nuclear weapons transit and port calls are expressly left to the individual parties to permit or deny (Art. 5:2).

Annexed to the treaty are three protocols. Two are similar to those of the Tlatelolco Treaty: a protocol committing dependencies of extra-zonal states[70] to zonal provisions (Protocol 1); and a guarantee protocol (Protocol 2) to be signed by the nuclear-weapon powers. The third requests the nuclear weapon states to refrain from nuclear testing in the zone area (Protocol 3).

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[67] States with dependencies in Latin America include France, the Netherlands, UK, and USA.

[68] The issue of what breadth of national territorial seas is legitimate has frequently been subject to controversy. The Tlatelolco Treaty was concluded long before the agreement on the *United Nations Convention on the Law of the Sea*, UNCLOS (UN Sales No. E.83.V.5). The convention was concluded in December 1982 and entered into force in November 1994. Most of its sovereignty- and security-related provisions are considered customary law.

According to UNCLOS (Art. 3), states cannot extend their territorial waters beyond 12 nautical miles from their coastal baselines. Several Latin American states, including Argentina, Brazil, Ecuador, El Salvador, Guinea, Haiti, Nicaragua, Panama, Peru, and Uruguay, had traditionally claimed more; in some cases up to 200 nautical miles. Today, Argentina, Guinea, and Haiti have "rolled back" their former claims to 12 nautical miles.

[69] UN Document A/RES/3477 (XXX).

[70] France, the UK, and the USA have dependencies within the South Pacific zonal area.

Geographically, the South Pacific zone encompasses a very large area, extending from the Latin American zone in the east to include Australia and Papua New Guinea in the west; and from Antarctica (lat. 60° S) in the south to the equator[71] in the north (Art. 1(a), Annex 1). Most of that area is ocean, while most treaty provisions apply to national territories only (Art. 1(b), 2).

A control system similar to that of the Tlatelolco Treaty is envisaged (Art.8, Annexes 2-4). Unlike the Tlatelolco Treaty, the Rarotonga Treaty is in explicit harmony with the Non-Proliferation Treaty and with the Convention on Law of the Sea (UNCLOS), except that nuclear explosions for peaceful purposes are not permitted at all.

The entry into force process of the Rarotonga Treaty has been underway since 1985. As of 1 January 1996, the treaty was in force for 11 out of the 16 Member States of the South Pacific Forum[72] eligible to be parties to the treaty. Today, three member states of the South Pacific Forum, the Marshall Islands, the Federated States of Micronesia, and Palau, are situated entirely outside of the current zone perimeter. The treaty foresees, however, that, when those states accede to the treaty, the perimeter will be extended to encompass their territories, subject to approval by the Forum (Art. 12:3).

Among the nuclear-weapon powers, only China and the USSR initially adhered to the protocols. The fact that France did not sign the treaty´s Protocol 3 in 1986 meant that a prime objective of the treaty, to stop nuclear testing at the only remaining active test site in the South Pacific[73], could not be achieved. At the time, the USA and the UK did not sign the Protocols either in order not to offend France. However, in March 1996, France, the UK, and the USA signed

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[71] In order to include the whole state of Kiribati, the zone extends slightly north of the equator in two instances.

[72] The member states of the South Pacific Forum are Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tuvalu, Tonga, and Vanuatu. Members which are non-parties to the Rarotonga Treaty are the Marshall Islands, the Federated States of Micronesia, Palau, Tonga, and Vanuatu.

[73] In 1962, France began establishing nuclear testing facilities at the Moruroa (lat. 21° 50' S; long. 138° 50' W) and Fangataufa (lat. 22° 15' S; long. 133° 45' W) atolls in the Tuamoto group of French Polynesia. The former British and US test sites in the South Pacific, Micronesia, and Australia, i.e., Bikini (lat. 12° 0' N; long. 167° 30' E), Enewetok (lat. 11° 30' N; long. 162° 15' E), Johnston Island (lat. 17° 10' N; long. 169° 8' W), the Monte Bello Islands (lat. 20° 40' S; 115° 55' E), Christmas Island today named Kiritimati (lat. 1° 50' N; long. 157° 20' W), and Malden Island (lat. 4° 3' S; long. 155° 1' W) have not been used since 1958.

the Protocols after France had terminated its last nuclear test series two months earlier.[74]

The Korean Peninsula

Both states on the Korean peninsula, the Republic of Korea (South Korea) and the Democratic People´s Republic of Korea (North Korea) have been parties to the Non-Proliferation Treaty since 1975 and 1985 respectively. At the time, the peninsula was not nuclear weapon free as US forces in South Korea were widely believed to deploy nuclear weapons there. This fact, together with ambiguities in the compliance of North Korea with NPT obligations, added further fuel to the tense security situation in the peninsula caused by the division of Korea. The complicated history of the North Korean nuclear issue has been researched by several authors, including Michael Mazarr and Mitchell Reiss[75].

In the 1980s, the establishment of a nuclear-weapon-free zone in the peninsula was discussed occasionally, with the aim of eliminating the nuclear dimension of the security problem. In 1991 the US announced that it would withdraw its nuclear forces from South Korea and adjacent sea areas. This was a consequence of both denuclearization talks between North Korea, South Korea, and the USA in 1991 and the US-Soviet unilateral declarations in the fall of 1991 on the withdrawal of most non-strategic nuclear weapons from land-based military units and general purpose ships[76]. This was soon followed by the conclusion of the long-overdue safeguards agreement between North Korea and the IAEA on 30 January 1992. By late 1991, the time was ripe for the historic

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[74] Already in October 1995, the three states had declared their intention to sign the protocols (UN Document A/50/665).

[75] M. J. Mazarr, *North Korea and the Bomb*, MacMillan Press Ltd, London, 1995; and M. Reiss, *Bridled Ambition*, The John Hopkins University Press, 1955, pp. 231-319. Other recent discussions of the Korean and Northeast Asian nuclear proliferation issues are included in Yong-Sup Han, *Nuclear Disarmament and Non-Proliferation in Northeast Asia*, UNIDIR Research Paper No. 33, 1995, Document UNIDIR/95/12 (UN Sales No. GV.E.95.0.3); and in A. Mack (Ed.), *Nuclear Policies in Northeast Asia*. Research Report UNIDIR/95/16 (UN Sales No. GV.E.95.0.8).

[76] The date for the last US nuclear weapon to leave South Korea is unclear, but the US declared on 22 January 1992 that all nuclear weapons had been withdrawn. The US unilateral declaration of 27 September 1991 was declared implemented on 2 July 1992.

signing, on 31 December 1991, by the two Koreas, of a Joint Declaration on the Denuclearization of the Korean Peninsula[77].

The brief declaration, which is not a fully elaborated nuclear-weapon-free zone treaty, states that the two states shall not test, manufacture, produce, receive, possess, store, deploy, or use nuclear weapons. Their nuclear energy activities shall be used for peaceful purposes only, with the restriction, however, that reprocessing and enrichment of uranium would not be permitted at all. A "South-North Joint Nuclear Control Commission" was established for verification and inspection.

The Joint Declaration entered into force on 19 February 1992. But a year later, its implementation, particularly the establishment of its control and inspection regime, was suspended in the shadow of the disputes between North Korea and the IAEA on NPT safeguards involving a possible withdrawal from the NPT[78] by North Korea, UN Security Council action[79], and bilateral negotiations with the United States. In October 1994, an agreement was reached

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[77] The text of the North-South Joint Declaration on the Denuclearization of the Korean Peninsula reads:

"*The South and the North,*

Desiring to eliminate the danger of nuclear war through denuclearization of the Korean peninsula, and thus create an environment and conditions favourable for peace and peaceful unification of our country and contribute to peace and security in Asia and the world,

Declare as follows:

1. The South and the North shall not test, manufacture, produce, receive, possess, store, deploy, or use nuclear weapons;

2. The South and the North shall use nuclear energy solely for peaceful purposes;

3. The South and the North shall not possess reprocessing and uranium enrichment facilities;

4. The South and the North, in order to verify the denuclearization of the Korean peninsula, shall conduct inspection of the objects selected by the other side and agreed upon by the two sides, in accordance with procedures and methods to be determined by the South-North Joint Nuclear Control Commission;

5. The South and the North, in order to implement this declaration, shall establish and operate a South-North Joint Nuclear Control Commission within one (1) month of the effectuation of this joint declaration;

6. This joint declaration shall enter into force as of the day the two sides exchange appropriate instruments following the completion of their respective procedures for bringing it into effect."

[78] See UN Document S/25405.

[79] UN Documents S/25562 and S/RES/825 (1993). The resolution calls upon the Democratic Peoples Republic of Korea "*to reaffirm its commitment to the treaty* [NPT] *and to comply with its safeguards agreement with the IAEA*".

between North Korea and the USA[80] stipulating that North Korea "*will remain a party to the NPT and will allow implementation of its safeguards agreement under the treaty*"[81] and that North Korea "*will consistently take steps to implement the North-South Joint Declaration on the Denuclearization of the Korean Peninsula*"[82].

Africa

The denuclearization of Africa has been an issue on the political agenda since 1961[83]. For a long time, uncertainty about South Africa´s nuclear activities and its refusal to adhere to the NPT were the main obstacles to progress. Since South Africa has dismantled its nuclear explosion devices and become a party to the NPT[84], the preparations for establishing a nuclear-

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[80] *Agreed Framework Between the United States of America and the Democratic People´s Republic of Korea* signed in Geneva on 21 October 1994. For text, see *Arms Control Today*, Vol. 24, No. 10, December 1994, pp 18-19. The agreement is described and analyzed in *The U.S.-North Korea "Agreed Framework" to End North Korea´s Nuclear Weapons Program*, CRS Report for Congress (3 August 1995). The agreement is best known for its provision (pt. I) that by a target date of 2003, North Korea will have its graphite-moderated nuclear reactors and related facilities "frozen" within one month and replaced with light water-moderated nuclear reactors with a total generating capacity of approximately 2000 MW(e), financed and supplied by an international consortium. In the meantime, North Korea will receive 500,000 tons of heavy oil annually for its energy needs.

[81] *Ibid.*, pt. IV:1.

[82] *Ibid.*, pt. III:2.

[83] See UN Document A/RES/1652/(XVI), the earliest UN General Assembly resolution on the subject, and the Declaration on the Denuclearization of Africa adopted by the Heads of State and Government of the Organization of African Unity at its first session, held in Cairo 17-21 June 1964 [Document AHG/Res. 11(1)].

[84] In March 1993, it was officially revealed that South Africa had fabricated six nuclear explosive devices of a simple guntype based on domestically produced, highly enriched uranium. These devices have been dismantled and South Africa became, in July 1991, a party to the NPT as a non-nuclear weapon state. For a description of the South African case, see W. Stumph, *South Africa´s Nuclear Weapons Program*, in K. C. Bailey (Ed.), *Weapons of Mass Destruction: Cost Versus Benefits*. Manohar Publishers, New Delhi, 1994, pp. 63-81; and the same author in *South Africa´s Nuclear Weapons Program: From Deterrence to Dismantlement* in Arms Control Today, Vol. 25, No. 10, December 1995/January 1996, pp. 3-8; M. Muller, *South Africa Crisscrosses the Nuclear Threshold*, in W. Gutteridge (ed.), *South Africa´s Defense and Security into the 21st Century*, Dartmouth Publishing Co., Aldershot, 1996 (forthcoming); and M. Reiss, *Bridled Ambition*, The John Hopkins University Press, 1995, Chapter 2, *South Africa: "Castles in the Air"*, pp. 7-43.

weapon-free Africa have been finalized and a final treaty text, the Treaty of Pelindaba, has been agreed upon. The African zone was formally established in 1996.

The central undertakings of the prospective parties are not to acquire and possess nuclear explosive devices (Art. 3) and to prevent the stationing of such devices on their territories (Art. 4). Nuclear weapons transit and port calls are expressly left to the individual parties to permit or deny (Art. 4:2), as is the case with the Rarotonga Treaty. The treaty also prohibits nuclear testing (Art. 5, Protocol II), dumping of radioactive waste (Art. 7), and armed attack on nuclear installations (Art. 11) within the entire zonal area. It explicitly prescribes "*the highest standards of security and effective physical protection of materials, facilities and equipment to prevent theft or unauthorized use or handling*" (Art. 10).

Annexed to the African zone treaty are three protocols similar to those of the Rarotonga Treaty.

Geographically, the African zone treaty defines the zone as "*the continent of Africa, island states members of the OAU, and all islands considered by the Organization of African Unity in its resolutions to be part of Africa*". The zonal area does not include sea areas other than internal, archipelagic, and territorial waters of parties (Art. 1(a) and Annex I)[85]. The African nuclear-weapon-free zone will overlap with part of the proposed zone in the Middle East.

A system for verification and complaints similar to those of the Latin American and the South Pacific zones is also prescribed (Arts. 9, 12, Annexes II-IV).

Co-operation on peaceful nuclear activities is encouraged under the "*African Regional Cooperation Agreement for Research, Training, and Development Related to Nuclear Science and Technology*" (AFRA) (Art. 8:3).

ASEAN

The idea of establishing a nuclear-weapon-free zone in the south-east Asian region was part of a proposal presented in 1971 to establish a zone of peace, freedom, and neutrality in South-East Asia (ZOPFAN)[86]. It was not until 1992,

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[85] As defined, the zonal area includes dependencies of France and Spain, states which are invited to sign the treaty´s Protocol III. The UK is not invited to sign the protocol, despite the fact that the Diego Garcia/Chagos Archipelago is included in the zone, because Mauritius claims the islands.

[86] UN Document A/C. 1/1019.

however, that concrete work on the idea could start[87], as endorsed by the UN General Assembly[88]. An "ASEAN Regional Forum" was set up to discuss security issues including a nuclear-weapon-free zone in the ASEAN area. The Forum held its first meeting in July 1994.

In December 1995, a treaty text was agreed and signed by all ten South-East Asian states[89]. The zone is scheduled to be formally established in early 1996.

Basically, the ASEAN zone treaty text is similar to the Rarotonga and the African treaties' texts. Key provisions include prohibitions on the development, manufacture or other acquisition, possession or control, testing and use, and stationing or transport of nuclear weapons by member states or in member states (Art. 3:1-2). The treaty also prohibits the dumping of radioactive waste at sea and the discharging of such material into the atmosphere (Art. 3:3a). Disposal of radioactive material or waste by zonal states is permitted only according to IAEA standards and procedures within its territory or on land in other states (Arts. 3:3b, 4:2e).

The zonal states are requested to accede to the "Convention on Early Notification of a Nuclear Accident" (Art. 6).

Nuclear-weapon states are invited to adhere to a Protocol committing them generally to respect the zone and not to use, or threaten to use, nuclear weapons against any zonal state or from within the zone. The zone borders one nuclear weapon power, China, both on land and at sea, but no thinning-out measure is requested in the Protocol.

The geographical scope of the ASEAN nuclear-weapon-free zone would encompass the territories of the member states including their internal, territorial, and archipelagic waters, airspace, and in addition their exclusive economic zones and continental shelves (Arts. 1(a), 1(b), and 2:1). No zonal perimeter beyond these territories is defined.

The treaty does not restrict legal rights, according to the international law of the sea, of any state regarding transit and passage (Art. 2:2), and also leaves to the individual zonal party the right to grant or deny warships or aircraft of nuclear-weapon powers to call at their ports or land at their airfields (Art. 7).

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[87] UN Document A/47/80.

[88] UN Document A/RES/47/53 B.

[89] Member states of ASEAN are Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. Cambodia, Laos, and Myanmar are entitled to join and may do so later.

These provisions are very relevant as the zone is very much a maritime area including important sea-routes and international straits.

The reference to the exclusive economic zones and continental shelves has drawn opposition from the nuclear weapon states: from France, Russia, the UK, and the USA because such a formula might infringe on their rights according to the international law of the sea; and from China because the geographical scope of the zone could overlap with parts of the South China Sea, claimed by China but disputed among the littoral states[90]. Negotiations with the nuclear-weapon states would continue, however, on their role in the zone regime[91].

A system for verification and complaints similar to that of the South Pacific zone is also prescribed (Arts. 10-14, Annex).

Use of nuclear energy for peaceful purposes is regulated according to IAEA and NPT standards (Art. 4).

Trends

As illustrated by the treaties of established nuclear-weapon-free zones, the general NWFZ concept has developed over the years since the conclusion of the Tlatelolco Treaty (1967) which had to be drafted "from scratch", even before the NPT was concluded in 1968, and long before the UN Convention on the Law of the Sea was finally agreed upon in 1982. There is thus no surprise that some of the Tlatelolco Treaty provisions are in disharmony with these two treaties. For instance, the Tlatelolco Treaty reflects a more permissive attitude towards the right of using nuclear explosive devices for peaceful purposes than does the NPT. Upon the full entry into force of the Tlatelolco Treaty, the zone provisions will apply also to vast areas of international waters, contradicting the norms of freedom of the sea and opposed by major maritime powers.

On the other hand, the Rarotonga Treaty was adopted in 1985, after both the NPT and UNCLOS were agreed upon, and complies closely with the language of both treaties, except that nuclear explosions for peaceful purposes are not permitted at all. The Rarotonga Treaty also proscribes nuclear testing and the dumping of radioactive wastes at sea within the entire zonal area.

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[90] An analysis of the territorial disputes in the South China Sea has recently been published by M. J. Valencia, *China and the South China Sea Disputes*, Adelphi Paper 298, 1995.

[91] See M. Richardson, *ASEAN Treaty Bars Nuclear Arms as Big Powers Demur*, International Herald Tribune, 16-17 December 1995, p. 4.

The Korean Joint Declaration (1992) introduces the new concept of prohibition on reprocessing and uranium enrichment.

The Pelindaba Treaty is, in its relevant parts, a copy of the Rarotonga Treaty, but adds a prohibition on armed attack on nuclear installations; prescribes measures of physical protection of nuclear materials; and encourages the use of a regional institution for nuclear activities for peaceful purposes.

The ASEAN Treaty is also similar to the Rarotonga Treaty, but includes more elaborate provisions regarding the disposal of radioactive waste and the use of nuclear energy for peaceful purposes. Unlike the Rarotonga and Pelindaba treaties, the provisions of the ASEAN Treaty will apply not only to the territories of the zonal states but also to their exclusive economic zones and continental shelves, thus infringing on general UNCLOS rights.

The historical process described above has developed the nuclear-weapon-free zone concept into a generally-recognized package of measures, subject to adaptation according to the specifics of each case, having a potential effect in complementing the NPT for its parties, and extending the non-proliferation regime to non-parties and to international areas.

The Proposed Zone in the Nordic Area

Among the many nuclear-weapon-free zones proposed in the past but never realized, two have been subject to investigations published in official reports. These are the proposed zones in the Middle East and in Nordic Europe. The former is analyzed in Part IV; the latter is described here because the project is different from the zones described above due to the different geopolitical environment.

In May 1963, President Urho Kekkonen of Finland proposed that the Nordic countries declare themselves a nuclear-weapon-free zone. Dr. Kekkonen argued that the proposed zone "*would indisputably remove the Nordic countries from the sphere of speculation caused by the development of nuclear strategy, and ensure that this region will remain outside international tension*"[92].

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[92] Statement by President Urho Kekkonen on 28 May 1963. For text, see U. Kekkonen, *Neutrality: The Finnish Position. Speeches 1943-1972*. Heinemann. London. 1973. pp.143-145. The zone proposal was made at a difficult point in time for European security: the Berlin Wall had been raised in August 1961; Finland had experienced a crisis with its superpower neighbour to the east, the USSR, in November 1961 (the s. c. note-crisis); the 1961 Swedish plan (the Undén plan) on the creation of an open-ended "non-atomic club" had failed; the Cuban crisis in

His concept of "Nordic countries" referred to Denmark, Finland, Norway, and Sweden[93]. The reaction of the other Nordic states to the Finnish proposal (the Kekkonen-plan) was reserved, however, despite the fact that it was acknowledged that the Nordic countries were *de facto* nuclear weapon free.

In 1974, Finland attempted again to revive the proposal, now also drawing on the experience gained from the establishment of the nuclear-weapon-free zone in Latin America and the fact that all Nordic states were parties to the Non-Proliferation Treaty[94].

The ensuing debate introduced the "thinning-out" idea, i.e., that nuclear weapons deployed close to a nuclear-weapon-free zone, or targeted against such a zone, should be withdrawn to make the nuclear-weapon power guarantees more credible[95], and that the modernized objective of the Nordic zone proposal "*would be a separate treaty arrangement covering the Nordic countries which*

October 1962 had brought the world to the brink of a nuclear war; and Finland´s neighbour to the west, Sweden, was pursuing a nuclear weapon option policy at the time.

[93] While the original Kekkonen plan focused on four Nordic countries — Denmark, Finland, Norway, and Sweden — the traditional concept of Nordic states also includes Iceland, which from the 1980s was involved in all Nordic zone discussions. It should be noted that the Nordic area also includes the Faeroe Islands and Greenland as dependencies of Denmark, and the Spitzbergen archipelago and the Jan Mayen island (lat. 71° 0' N; long. 8° 30' W) as Arctic dependencies of Norway. The Antarctic dependencies of Norway, i.e., Bouvet Island (lat. 54° 26' S; long. 3° 24' E), Peter I Island (lat. 68° 51' S; long. 90° 42' W), and Queen Maud Land (a sector of the Antarctic continent from long. 20° W eastward to long. 45° E claimed by Norway in 1939) were never mentioned in this context. (Queen Maud Land and Peter I Island are situated south of lat. 60° and thus within the Antarctic Treaty area).

[94] Denmark, Finland, Iceland, and Norway became parties to the Non-Proliferation Treaty in 1969; Sweden signed in 1970. The long political process leading to Sweden´s signing of the NPT and the following support of that treaty have recently been described by J. Prawitz, *From Nuclear Option to Non-Nuclear Promotion: The Sweden Case*, Research Report 20, The Swedish Institute of International Affairs, 1995.

[95] A. Thunborg, *Nuclear Weapons and the Nordic Countries Today – A Swedish Commentary*, A Special Issue of Ulkopolitiikka 1975, pp. 34-38. The author was at the time the Under-Secretary of Defense of Sweden. His "thinning-out" proposal reads: "*If the nuclear-weapon states support an agreement on such a zone – an important condition if it is to be of any value – the medium range ballistic missiles and the tactical nuclear weapons (all except ICBM and SLBM) that are stationed near the zone and could be directed against targets within the zone, will be superfluous, and the agreement should therefore provide for their withdrawal. This applies to land areas to the east and south of the zone and to sea areas to the west and north.*"

would isolate them as completely as possible from the effects of nuclear strategy in general and new nuclear weapons technology in particular"[96].

The primary implication of the "thinning-out" formula in the Nordic context was the withdrawal of Soviet nuclear weapons from areas close to Finland´s eastern border and the Baltic Sea coast. The USSR first reacted very negatively, but in June 1981 Soviet President Leonid Brezhnev stated that the Soviet Union could, in addition to extending negative security guarantees to a Nordic nuclear-weapon-free zone, also consider "*some other measures applicable to our own territory in the region adjoining the Nuclear-Free Zone in Northern Europe*"[97]. Half a year later, he referred to such measures as "*substantial*"[98].

In the early 1980s, the political interest in the Nordic zone idea grew explosively in all five Nordic countries. In March 1987, the five Nordic governments agreed to appoint a joint group of Senior Officials to study the "*prerequisites for a Nuclear-Weapon-Free Zone in the Nordic Area as part of efforts to achieve détente and arms reduction in Europe*". The group´s report, which included neither a draft treaty text, nor any recommendations, was released in March 1991[99].

This report, produced at the very end of the Cold War, became the final analysis of the Nordic zone proposal. Today, most of the proposed components of the Nordic zone concept have been put in place as a consequence of other arms control measures adopted since 1988, and the zone issue has thus been removed from the political agenda. Fundamentally important in this respect, of course, is the end of the Cold War and the withdrawal of non-strategic nuclear weapons from relevant theatres of deployment and from ships[100].

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[96] Statement by President Kekkonen, 8 May 1978. For a full text of the statement, see the *Yearbook of Finnish Foreign Policy 1978*, pp. 64-66.

[97] *New Times*, No. 27, 1981, pp. 8-9.

[98] Interview in *Der Spiegel*, No. 45, 2 November 1981, p. 63.

[99] *Nuclear-Weapon-Free Zone in the Nordic Area. Report from the Nordic Senior Officials Group*. March 1991. The group still exists and works on the Nordic nuclear-weapon-free zone concept and other security issues.

[100] Unilateral declarations by Presidents Bush of the USA and Gorbachev of the USSR, on 27 September and 5 October 1991 respectively.

Chapter 3
The Theory of NWFZS and WMDFZs

Objectives and Principles

"Nuclear-weapon-free zone" is a summary concept describing regimes for regional security, independently or as a complement to other global as well as regional arrangements. The concept has been relatively well studied. Geographical, political and other regional specifics related to nuclear-weapon-free zones would differentiate various zones. No zone would be an exact copy of another. The term nuclear-weapon-free zone would, however, usually imply the fulfilment of certain objectives and the implementation of certain elements of arms control. Two United Nations expert studies[101] have contributed to establishing the scope and the frame of this concept.

The expansion of the concept to other weapons of mass destruction is new, and the literature on the widened subject is limited. The new concept may, however, easily fit into the legal frames already developed for nuclear-weapon-free zones. This report, therefore, is primarily and by necessity based on what has been worked out in terms of nuclear weapons.

The general objective for establishing a nuclear-weapon-free zone or a zone free of weapons of mass destruction would be to relieve a zonal area from the threat of being involved in mass destruction war. The fulfilment of this objective would usually require co-operation both among prospective zonal states and with nuclear weapon states or other extra-zonal states.

There may be a variety of further objectives for the establishment of such zones in specific cases. Regarding proposed zones in Europe, a related objective was the separation of nuclear weapons belonging to the major military blocs of the Cold War.

The fulfilment of such objectives shall also be considered as a process over time. History has shown that so far, the establishment of zones is a process that takes decades. In addition, the creation of a nuclear-weapon-free zone would

[101] See footnotes No. 12 and 13 above.

always be considered a partial step and a contribution to a process eventually leading to general nuclear disarmament.

Definitions

What is a zone? States participating in a nuclear-weapon-free zone or a zone free of weapons of mass destruction are free to decide what regime they consider appropriate to fulfill the requirements in their specific region. Indeed, each zone established or proposed so far has been intended to serve purposes specific to each case, and that will probably be so in the future as well. Nonetheless, the need for a general definition of the zone concept has been met by the General Assembly of the United Nations and will assist the formulation of arrangements for specific future zone projects.

The UN General Assembly in 1975 defined the concept of a nuclear-weapon-free zone as follows:

> *I. Definition of the concept of a nuclear-weapon -free zone*
> *1. A nuclear-weapon-free zone shall, as a general rule, be deemed to be any zone, recognized as such by the General Assembly of the United Nations, which any group of States, in the free exercise of their sovereignty, has established by virtue of a treaty or convention whereby:*
> *(a) The statute of total absence of nuclear weapons to which the zone shall be subject, including the procedure for the delimitation of the zone, is defined;*
> *(b) An international system of verification and control is established to guarantee compliance with the obligations deriving from that statute.*
> *II. Definition of the principal obligations of the nuclear weapon States towards nuclear-weapon-free zones and towards the States included therein*
> *1. In every case of a nuclear-weapon-free zone that has been recognized as such by the General Assembly, all nuclear weapon States shall undertake or reaffirm, in a solemn international instrument having full legally binding force, such as a treaty, a convention or a protocol, the following obligations:*
> *(a) To respect in all its parts the statute of total absence of nuclear weapons defined in the treaty or convention which serves as the constitutive instrument of the zone;*
> *(b) To refrain from contributing in any way to the performance in the territories forming part of the zone of acts which involve a violation of the aforesaid treaty or convention;*
> *(c) To refrain from using or threatening to use nuclear weapons against the States included in the zone*[102].

[102] UN Document A/RES/3472 B (XXX).

Three years later, in 1978, this concept of a nuclear-weapon-free zone was again referred to and elaborated by the Tenth Special Session of the UN General Assembly[103].

Which are the weapons of mass destruction? The various categories of weapons of mass destruction are among the specific terms that may require an explicit definition in a treaty establishing a nuclear-weapon-free zone or a zone free of weapons of mass destruction. The concept of weapons of mass destruction was defined by the UN Commission for Conventional Armaments on 13 August 1948 as "*atomic explosive weapons, radioactive material weapons, lethal chemical and biological weapons, and any weapons developed in the future which have characteristics comparable in destructive effect to those of the atomic bomb or other weapons mentioned above*"[104]. Expressed in modern terminology, these include nuclear, biological, chemical, and radiological weapons, or weapons with similar effects.[105]

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[103] The Final Document of the Tenth Special Session of the General Assembly reads:

"*60. The establishment of nuclear-weapon-free zones on the basis of arrangements freely arrived at among the States of the region concerned constitutes an important disarmament measure.*

61. The process of establishing such zones in different parts of the world should be encouraged with the ultimate objective of achieving a world entirely free of nuclear weapons. In the process of establishing such zones, the characteristics of each region should be taken into account. The States participating in such zones should undertake to comply fully with all the objectives, purposes and principles of the agreements or arrangements establishing the zones, thus ensuring that they are genuinely free from nuclear weapons.

62. With respect to such zones, the nuclear weapon States in turn are called upon to give undertakings, the modalities of which are to be negotiated with the competent authority of the zone, in particular:

(a) To respect strictly the status of the nuclear weapon free zone;

(b) To refrain from the use or threat of use of nuclear weapons against the States of the zone."

[104] UN Document RES/S/C. 3/30.

[105] It could be noted that the 1977 Convention on the Prohibition of Military or any Other Hostile Use of Environmental Modification Techniques (ENMOD) prohibits certain means of warfare "*having widespread, long-lasting or severe effects*" (Art. I:1). An authoritative interpretation defined 'widespread' as "*encompassing an area of the scale of several hundred square kilometers*"; 'long-lasting' as "*lasting for a period of months, or approximately a season*"; and 'severe' as "*involving serious or significant disruption or harm to human life, natural and economic resources or other assets*" (Document CCD/520, 3 September 1976). The 1977 Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I) refers to "*widespread, long-term, and severe damage to the natural environment*" (Arts. 35:3 and 55:1). The similar wordings of the ENMOD Convention and Protocol I are not intended to coincide but were drafted to be

None of the multilateral treaties of global application concluded so far contains a physical definition of **nuclear weapons**. The regional Treaty of Tlatelolco attempts an elaborate definition in its article 5. The Rarotonga (Art 1c) and the Pelindaba (Art. 1c) treaties also include in their general definitions of nuclear weapons unassembled or partly-assembled nuclear devices. While there may be a general understanding of what a nuclear weapon is, the countries seeking to establish a nuclear-weapon-free zone may wish to define the scope of the nuclear weapon concept, and clarify in particular whether the agreed measures would relate only to nuclear warheads (unassembled, partly assembled, or completely assembled) or to all nuclear explosive devices (as in the Rarotonga, Pelindaba, and ASEAN treaties), or even might include delivery vehicles for nuclear weapons, which is not the case in those treaties. The ASEAN Treaty defines nuclear weapon in its article 1(c) as "*any explosive device capable of releasing nuclear energy in an uncontrolled manner*", thus including nuclear explosive devices for peaceful purposes.

The term **nuclear-weapon state** may also require an explicit definition in a treaty aiming for the establishment of a nuclear-weapon-free zone, as such states may be requested to assume obligations specific to them. The term was defined in Article IX:3 of the Non-Proliferation Treaty as a state having manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967. This definition does not cover a new country acquiring nuclear weapons after the stated date, nor does the NPT formula cover the case of a nuclear-weapon state abandoning its nuclear arms to become non-nuclear. The possibility of "*the rise of a new power possessing nuclear weapons*" is referred to in Article 28 of the regional Treaty of Tlatelolco. India, which is not a party to the NPT, did manufacture and explode a nuclear device "for peaceful purposes" in May 1974, but is generally not considered a nuclear weapon power. A complicated example is South Africa which manufactured six nuclear explosive devices after 1 January 1967, exploded none of them, and later dismantled them before signing the NPT in 1991.

A related problem would be to refer to, and accommodate, potential zonal states which *de facto* are nuclear weapon states but which have not officially established themselves as such, usually called "threshold states". They may have access to nuclear weapons through an alliance with a nuclear weapon state

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two separate concepts.

or may have made the advanced preparations necessary for independent acquisition of nuclear weapons.

The 1972 Biological Weapons Convention does not include any explicit definition of prohibited **biological and toxin weapons**. The World Health Organization concluded in 1970, however, that biological agents are those that depend for their effects on multiplication within the target organisms, and that toxins are poisonous products of organisms not able to reproduce themselves[106].

The concept of **chemical weapons** is defined in great detail in the Chemical Weapons Convention of 1993. Its Article II elaborates definitions of chemical weapons, toxic chemicals, precursors, key components, old chemical weapons, riot control agents, etc., further specified in its Annex on Chemicals.

The idea of **radiological weapons** — which spread out deadly radiating material on enemy forces and territory — is today considered impractical and no convention prohibiting such weapons has been concluded so far. The related measure of prohibiting attacks on nuclear facilities potentially resulting in spreading radioactive material on a mass destruction scale has been subject to negotiation but no global agreement has been reached. The African nuclear-weapon-free zone treaty includes such a prohibition (Art. 11), however, as does a bilateral agreement between India and Pakistan of 1988[107].

In recent years, **long range missiles** have frequently been considered related to weapons of mass destruction both as carriers of warheads of mass destruction and as instruments of long distance conventional surprise attacks. In 1987, seven western industrialized states agreed to establish "Guidelines for Sensitive Missile-Relevant Transfers", or the "Missile Technology Control Regime" (MTCR) as it is now usually called. Several more states later adopted these guidelines. The common guidelines specify what export of missile equipment and technology should be restricted in order to prevent the proliferation of delivery vehicles for weapons of mass destruction. The regime focuses on missile systems including both ballistic missiles and cruise missiles with a range exceeding 300 kilometers and with a payload capability exceeding 500 kilograms. In 1994, Canada initiated a discussion on the conclusion of a

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[106] *Health Aspects of Chemical and Biological Weapons*. Report of a WHO group of Consultants. 1970.

[107] The "Agreement Between Pakistan and India on the Prohibition of Attack Against Nuclear Installations and Facilities" was agreed upon in December 1988, and entered into force in January 1991.

"missile non-proliferation instrument" as a general continuation and codification of the MTCR.[108]

The resolution on Iraq adopted by the UN Security Council[109] following the 1991 Gulf war includes a definition of weapons of mass destruction that covers not only nuclear (Op. 12), chemical, and biological weapons (Op. 8a), but also "ballistic missiles with a range greater than 150 kilometers" (Op. 8b).

Important Objectives

Within the context of "*the ultimate objective of achieving a world entirely free of nuclear weapons*", as set forth by the UN General Assembly in the Final Document of the Tenth Special Session, several other objectives having regional or, in some cases, also wider significance can be identified. Depending on the circumstances in each case, these objectives may be pursued or specified in a zonal agreement. The relevance and relative emphasis of such objectives may vary from one region to another. The subsequent evolution (i.e., development and improvement over time) of a zone agreement would also be possible. Without prejudice to other objectives which may be added according to the needs in specific cases, the following general objectives of zones free of weapons of mass destruction could be noted as being important:

(a) to spare zonal states from the use or threat of use of mass destruction weapons;
(b) to contribute to averting potential mass destruction threats and, thereby, to reducing the danger of war, in particular war utilizing mass destruction means;
(c) to contribute to the process of disarmament, in particular the elimination of weapons of mass destruction;
(d) to contribute to regional and world stability and security;

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[108] The situation regarding missile proliferation, including the situation in several Middle East countries, has been analyzed by Aaron Karp in *Ballistic Missile Proliferation: The Politics and the Technics*, SIPRI, Oxford University Press, 1996.

[109] UN Document S/RES/687 (1991). The resolution "*takes note*" that destruction of the weapons specified in the resolution "*represent[s] steps towards the goal of establishing in the Middle East a zone free from weapons of mass destruction and* all missiles for their delivery (emphasis added) *and the objective of a global ban on chemical weapons*" (Op. 14).

(e) to impede the horizontal, vertical and geographical proliferation of weapons of mass destruction;
(f) to provide increased security at lower levels of armament;
(g) to strengthen confidence and improve relations between zonal states; and
(h) to facilitate and promote co-operation in and the development of technologies for peaceful purposes closely related to weapons of mass destruction, within the region and between zonal and extra-zonal states.

Geographical Considerations

No precise requirements can be set regarding the suitable size of nuclear-weapon-free zones or other arms control zones. They could range from whole continents to small areas. Sometimes a zone might be initially established in a limited area and later extended as other countries agree to join in. If most of the world is to be kept free from nuclear weapons and other weapons of mass destruction, extending such zones to large regions would provide the natural way to achieve that aim.

The geographical extent of a zone would depend on the specific characteristics of the region and on the precise arms control objectives to be realized. A single state could declare itself a zone. Normally, however, a zone would be comprised of the national territories of two or several neighbouring states, including their territorial waters and airspace, and established by agreement between those states. It would also be possible for states separated from each other by high sea areas or otherwise to form a zone.

Sometimes the circumstances are such that only part of a state will be considered for inclusion in a zone. One such circumstance occurs when the dependencies of a state are part of a zone, while the mainland belongs to another region. Protocols of the Tlatelolco, Rarotonga, and Pelindaba treaties apply to this case. Another circumstance concerns states which are part of a nuclear-weapon-free zone, while a far-away dependency is not. In the discussions on a Nordic nuclear-weapon-free zone, Norway was considered an obvious part of the zone while its dependency in the South Atlantic, the Bouvet Island, was not. A third category refers to cases in which a special part of a country may be located in a denuclearized or demilitarized area whereas the mainland is not. An example of this is the demilitarized Spitsbergen-archipelago, a dependency of Norway which is not party to any zone. A final combined zonal and non-zonal case occurs when an extra-zonal state has a military base in a zone, but the host country has no responsibility for the base. An example is the US base of

Guantánamo in Cuba. The splitting of states into zonal and extra-zonal parts would always require special legal reference in zone treaties.

Furthermore, a zone might include geographical areas which are not under the jurisdiction of any state, for instance sea areas beyond territorial waters. A zone may also in its entirety be established in such areas, Antarctica being a well-known example.

The delimitation of a zone would generally depend on two concepts: the zonal outer perimeter and the territory for which the zone agreement is in force. Both concepts were applied in the Tlatelolco and Rarotonga treaties while no perimeters were defined for the African and ASEAN zones. **The perimeter** is a line encircling the maximum area of the zone within which all states would be eligible to join the zone agreement. To avoid confusion, the perimeter should if possible not cut through the interior of individual states. States outside the perimeter would be considered extra-zonal, but may be invited to assume responsibilities related to the zone and regarding dependencies they may have inside the perimeter. The Rarotonga Treaty foresees a revision of the perimeter when states, both eligible to join and located outside the current perimeter adhere to the treaty.

The Treaty of Tlatelolco defines the outer perimeter of the Latin American zone in its Article 4:2. The Treaty of Rarotonga generally does the same for the South Pacific zone in its Annex 1, as illustrated by a map attached to the Annex. The perimeters of these two zones clearly determine which states were initially eligible to become parties to the zone treaties and which are the extra-zonal states to be invited to assume matching responsibilities regarding their dependencies inside the perimeters. The perimeter of Antarctica is the latitude line 60° S, encompassing an ocean area and a number of Antarctic islands.

The area of application of a zone would be the territory (including the land areas, the internal, territorial, and archipelagic waters, and air space) of those parties for which the zone treaty and related protocols are in force. The area of application would grow in size as more states adhere to the zone agreement, but could, by definition, not extend beyond the perimeter.

While a zone could thus come into force with a limited number of parties rather early, the addition of further states within the perimeter might continue for a considerable time. The Tlatelolco Treaty was agreed in 1967, and although most eligible states are parties today, some have still to complete the accession procedure. The same is true for the Rarotonga Treaty, agreed in 1985. The time needed for the entry-into-force process of these two treaties should cause no surprise. First, a fair number of prospective parties have to adapt to the new

commitments. Secondly, nuclear weapon states and other extra-zonal states invited to participate by adhering to protocols also need time to adapt, all the more so as those states usually have had only an indirect influence on the drafting of the treaty and protocols they were invited to subscribe to.

The perimeters of the Tlatelolco, Rarotonga and Antarctic zones encompass large areas of **international waters**[110]. In the Rarotonga Treaty case, the larger part of the area inside the perimeter consists of such waters. As the UN Convention on the Law of the Sea[111] prescribes, states parties to a nuclear-weapon-free zone treaty (or any group of states) cannot by agreement among themselves institute generally applicable restrictions in such waters which all states have the right to enter and use. Zonal states can agree to restrict only themselves in international sea areas. In addition, they can *invite* extra-zonal states to subscribe to special provisions and to respect general zonal restrictions, e.g., by signing special protocols to that effect. This is done in the Rarotonga Treaty and the African zone treaty as regards the prohibition of nuclear testing and dumping of radioactive materials.

One element of a zone arrangement could be **"thinning-out"**, i.e., withdrawal or other measures regarding weapons, military forces or military activities in an area adjacent to the zone, for the purpose of enhancing the security of the zonal states and the credibility of the assurances extended to the zone by extra-zonal states.

Such security areas adjacent to the zone could be both land and sea areas. They would have to conform to specific conditions in each case and could be based upon agreements reached among those countries directly concerned. Measures of this kind could be defined not only in geographic but also (or alternatively) in functional terms, that is, in terms of the relations that relevant weapons, forces and military activities could have to the zone. In the latter case, the extension of the "adjacency" would be implicitly related to the ranges of these weapons, forces and activities.

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[110] For the purpose of an analysis of nuclear weapons carried by warships and aircraft, the term "international waters" covers the UNCLOS concepts of "exclusive economic zones" (EEZ) and "high seas". See UNCLOS Art. 55 - 58 and Art. 86 - 93.

[111] See footnote No. 68 above.

Territorial Disputes

Sometimes a territorial dispute between prospective zonal states or between a prospective zonal state and an extra-zonal state can complicate accession to a zone agreement. It is obvious that a state assuming treaty commitments in relation to its entire territory could not implement such commitments in a part of its claimed territory which is *de facto* controlled by another state. It may also be difficult for a state to assume zone responsibilities for areas under firm national control but claimed by others.

The Tlatelolco Treaty foresaw such problems in its original Article 25:2.[112] However, while such territorial disputes might complicate the subscription to a zone agreement for individual states, they might not necessarily do so, and would not constitute a general obstacle to the entry into force of the zone agreement as such.

Two illustrative examples in point are related to the Latin American zone. The USA has long leased an area, Guantánamo, located on the territory of Cuba, and has used it as a military base. Cuba has tried, but failed, to get the area back, and cannot exercise any jurisdiction whatsoever over the base. Cuba thus concluded that it could not apply a nuclear-weapon-free zone commitment to the *whole* of its territory, all the more so as the USA is a nuclear weapon state. The end result was that Cuba did not accede to the Tlatelolco Treaty for a long time. However, in February 1995, Cuba decided to sign the Tlatelolco Treaty. On the other hand, the USA has become a party to the treaty´s Protocol I prescribing responsibilities in relation to its dependencies in the zone, including the Guantánamo base.

The other example refers to Argentina and her well-known claim to the Falkland Islands/Malvinas, now controlled by the United Kingdom — an extra-zonal state. The two countries' dispute over the islands — an armed conflict in 1982 — did not prevent Argentina from becoming a party to the Tlatelolco

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[112] The original text of Article 25:2 provided that no "*decision regarding the admission of a political entity part or all whose territory is subject, prior to the date when this treaty is opened for signature, of a dispute or claim between an extra-continental country and one or more Latin American states, so long as the dispute has not been settled by peaceful means*". By decision, on 10 May 1991, this article was amended to prescribe instead that "*the status of State Party to the Treaty of Tlatelolco shall be restricted to independent states within the zone of application of the treaty,... which on 10 December 1985 were members of the United Nations, and to Non-Self-Governing Territories specified in document OEA/CER.P.AG/doc.11939/85 of 5 November 1985, when they attain their independence*".

Treaty or the United Kingdom from becoming a party to the treaty´s Protocol I, both parties thus committing themselves to treaty responsibilities applying to territories that they *de facto* control. This dispute is subject to negotiations between the parties separate from the implementation of the Tlatelolco Treaty and does not constitute an impediment to the management of the zone itself[113].

The map of the African nuclear-weapon-free zone included in the treaty text indicates that the Chagos Archipelago/Diego Garcia, a dependency of the United Kingdom claimed by Mauritius, is included in the zone "*without prejudice to the question of sovereignty*". The UK is not invited to sign the treaty´s Protocol III on dependencies.

Basic Measures and Obligations

Three measures would be of central importance for the achievement of the objectives of a zone free of weapons of mass destruction or a nuclear-weapon-free zone in general. These are:

* the *non-possession* of prohibited weapons by zonal states;
* the *non-stationing* of prohibited weapons by any state within the geographical area of application of the zone; and
* the *non-use or non-threat of use* of prohibited weapons throughout the zone or against targets within the zone.

The meaning of these measures might seem clear enough. However, their legal representation could be complicated, as shown, e.g., by the definition of "nuclear weapon" in the Tlatelolco Treaty (Art. 5) and by the definition of chemical weapons in the Chemical Weapons Convention (Art. II).

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[113] During the Falklands/Malvinas war between Argentina and the UK in 1982, the issue was raised regarding whether the presence of nuclear-propelled British submarines in the area was in fact an abrogation of the Tlatelolco Treaty´s Protocol I:1, according to which the UK had undertaken "*to apply the statute of denuclearization in respect of warlike purposes as defined in articles 1, 3, 5, and 13*" of the Tlatelolco Treaty "*in territories for which,* de jure *or* de facto*, they are internationally responsible and which lie within the limits of the geographical zone of application established in that treaty*". The treaty´s article 1:1 prescribes that the parties "*undertake to use exclusively for peaceful purposes the nuclear material and facilities which are under their jurisdiction*". However, at the time the UK claimed only three nautical miles territorial water around the Falkland Islands, its dependency in the area, and Argentina was not a party to the Tlatelolco Treaty.

The *non-possession measure* would apply to zonal states. Its codification could be much simplified if it relied on the concepts of the Non-Proliferation Treaty (Article II[114]), the Biological Weapons Convention, and the Chemical Weapons Convention. If the zone encompasses only territories of states parties to the NPT, the BWC, and the CWC, most of the non-possession requirement would be fulfilled. Only the non-possession of long range missiles must be regulated in detail in the absence of a comprehensive treaty on such missiles. If the zone is to encompass states which are not parties to one or several of these treaties, or states which are nuclear weapon states, a special regime must be defined. The same would be true in the special case of only a part of a state being included in the zone. If the whole of a nuclear weapon state is to be included, a procedure for abandonment of all its nuclear weapons must be prescribed.

The right or non-right of zonal states to acquire and operate nuclear explosive devices for peaceful purposes should also be prescribed. Because of the technological similarity of nuclear weapons and nuclear explosive devices for peaceful purposes, the possession of such devices by some zonal states would significantly weaken a zonal regime. As the peaceful nuclear explosion technology now seems generally unfeasible, sacrificing the right to possess it would harm the parties very little, while significantly enhancing the effectiveness of the zone.

The *non-stationing measure* would primarily apply to the territories of zonal states. However, zonal states could not, by agreement among themselves, restrict or prohibit innocent passage (or transit passage) by vessels of nuclear-weapon states and other extra-zonal states with prohibited weapons onboard through their territorial and archipelagic waters. Non-stationing measures applying to international land and sea areas would require special legal arrangements. The founding legal instrument of the zone must also define whether it would be only the warheads that should not be present in the zone or if the prohibition should also include all or some of their delivery vehicles and installations as integral parts of weapon systems.

Related to the non-stationing measure is the "transit" of prohibited weapons through zonal territory — an issue which primarily concerns nuclear weapons.

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[114] Article II of the NPT provides that "*each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices*".

The transit concept would include "innocent" transit over a limited period of time of otherwise prohibited weapons by an extra-zonal state, on land, by air or in internal waters, including calls at ports by ships or the landing of aircraft carrying such weapons. Universal adherence to the BWC and the CWC would limit consideration of transit to nuclear weapons.

The transit issue was extensively discussed when the Latin American zone was negotiated. The problem was solved by not being solved. Transit was left to the individual zonal states to permit or deny in each case[115]. The South Pacific zone has a similar transit regime, as have the African and the ASEAN zones.

A zonal treaty should indicate whether transit should be generally prohibited or arranged in a way similar to the Tlatelolco formula. Transit through zonal high sea areas or through territories which are dependencies of extra-zonal states could not be permitted without making the zonal regime of such areas an illusion[116].

The special transit issue of ships and aircraft which may carry nuclear weapons onboard and call at ports or land at airports in zonal states has been particularly difficult because nuclear weapon powers usually "neither confirm nor deny the presence or absence of nuclear weapons onboard specific ships or aircraft at specific times"[117]. A political problem of considerable dimension some years ago, the neither confirming nor denying issue has lost most of its former importance following the withdrawal by nuclear-weapon powers of non-strategic nuclear weapons from naval ships.

While "innocent transit" has been considered tolerable under all zone regimes so far, "hostile transit" would probably not be considered so, i.e., passage of delivery vehicles with prohibited weapons across zonal territory towards targets beyond the zone. This rule would apply to seaborne and airborne manned- or unmanned-vehicles and to ballistic missiles insofar as they

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[115] See footnote 66 above.

[116] The fact that three nuclear-weapon powers, France, the UK, and the USA, are parties to Protocol I of the Tlatelolco Treaty for their dependencies in Latin America and the Caribbean constitutes just such a problem. The issue has not been raised or referred to politically, however.

[117] For an account of the consequences of these policies, see J. Prawitz, *The "Neither Confirming nor Denying" Policy at Sea* in J. Goldblat, (Ed.), *Maritime Security: The Building of Confidence.* Document UNIDIR/92/89 (Sales No. GV.E.92.0.31).

penetrate zonal air space. Crossing overhead zonal territory in international space could not be prohibited by agreement among the zonal states[118].

The *non-use measure* would be a commitment by states controlling prohibited weapons. Legally, this provision has been given the form of a separate protocol to existing zone agreements. Reservations to the guarantee-protocol could not be avoided in the Latin American case.

Consideration of the non-use measure should be made against the background of ongoing talks on general negative security assurances at the Conference on Disarmament in Geneva and the assistance and support to victims of biological and chemical warfare effects prescribed by the BWC and the CWC. All five nuclear-weapon states have made unilateral declarations according to which they would not attack, or threaten to attack with nuclear weapons, states that do not possess such weapons themselves, or host those of others on their territories. These declarations are not coordinated and include some conditions and reservations[119]. The reservations are linked to the question of whether a state can be a member of a nuclear-weapon-free zone and also of a military alliance with a nuclear-weapon state simultaneously. That is certainly possible provided that the two sets of commitments are not contradictory.

Note should also be taken of the recent UN Security Council resolution[120] which recognizes existing negative assurances as well as the positive assurances in which the five nuclear-weapon states undertake to provide "*immediate assistance, in accordance with the UN Charter, to any non-nuclear-weapon state party to the NPT that is a victim of an act of, or an object of a threat of, aggression in which nuclear weapons are used*" (Op. 7).

Also significant in this regard are the provisions for assistance to, and support of, states victims of biological and chemical weapons effects as outlined in the BWC and the CWC.

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[118] The problem of drawing a line between territorial airspace, subject to national jurisdiction of the underlying state, and international outer space, where the underlying state would have no responsibilities, has been on the agenda of the United Nation´s Committee on the Peaceful Uses of Outer Space for many years. A number of difficult issues must be taken into account when defining such a line. Without a final solution, a reasonable assumption would be that the line would be drawn at approximately 100,000 meters above sea level.

[119] See footnote 45 above.

[120] UN Document S/RES/984 (1995), 11 April 1995, Op. 7. At the conclusion of the NPT in 1968, the UN Security Council adopted a similar resolution, S/RES/255 (1968). See footnotes 45 and 46 above.

No general policy commitments related to long-range missile attack or surprise attack exist within the international community. For a zonal agreement, such guarantees must thus be drafted from scratch. A zone free of weapons of mass destruction which included a prohibition on long range missiles would obviously lose much of its meaning if not matched by a non-use measure covering such missiles.

Linked to the non-use measure has been the idea, mentioned above, that this measure should be complemented by a "thinning-out" arrangement in areas adjacent to the proposed zone where nuclear weapons are deployed. The "thinning-out" idea implies the withdrawal of weapons that are targeted against the zone or that have short ranges and are deployed very close to the zone, thus making them usable primarily against the zone. If such weapons are not withdrawn, non-use commitments would be less credible.

Special Provisions for Sea Areas

There is a significant difference between applying arms control measures in sea areas as compared to land areas because of different legal regimes. Almost all land is subject to the jurisdiction of one state, a well-known exception being Antarctica. As a consequence, adversary military forces on land are geographically separated from each other in peacetime. Naval forces of different states, on the other hand, may interact throughout all parts of the sea: on the surface, in the water, under the ice, and on the sea-bed. Indeed, they frequently do so.

The very elaborate and detailed United Nations Convention on the Law of the Sea (UNCLOS)[121] was agreed in 1982 and entered into force in 1994. Since then it has been serving as the "constitution" of the sea areas which cover more than 70% of the surface of the earth. Many of its sovereignty related provisions are today considered customary law, thus binding for all states whether they are parties or not to the convention.

UNCLOS entitles all states to use the "*freedom of the high seas*", mostly applicable also in the exclusive economic zones, including the freedom of navigation and the freedom of overflight.[122] But the convention also prescribes

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[121] The *United Nations Convention on the Law of the Sea* (UN Sales No. E.83.V.5) was signed on 10 December 1982 and entered into force on 14 November 1994.

[122] UNCLOS, Article 87: 1a,b.

that "*the high seas shall be reserved for peaceful purposes*"[123] and that "*states shall refrain from any threat or use of force against the territorial integrity or political independence of any state, or in other manner inconsistent with the principles of international law embodied in the Charter of the United Nations*"[124], implying that use of military force at sea must comply with the UN Charter.[125]

Coastal states enjoy full jurisdiction only over their internal waters. Their jurisdiction also extends to their territorial seas and archipelagic waters, except that any flag state enjoys the right of innocent passage for its ships in such waters (there is a more liberal regime of transit passage through international straits)[126]. The provisions granting the right of innocent passage to men-of-war make no distinction between ships because of the types of weapons they may carry.

In exclusive economic zones or on the high seas, the coastal states have no jurisdiction related to naval vessels or weapons.

Zonal states would be obliged not to possess, deploy, or otherwise operate prohibited weapons anywhere, including at sea. They would, however, have no right, according to international law, to limit, by agreement among themselves, the general right of flag states to navigate ships or fly aircraft in those waters which all states have the right to enter and use. Denuclearization of a sea area would require agreement in principle among all states or at least among the nuclear weapon states to make the regime effective.

Zonal commitments applying to sea areas should, therefore, be prescribed in a separate legal instrument linked to the main zone treaty and expressed in terms referring to the general law of the sea. The precise objective of such obligations could vary from one zone to another. Restrictive commitments could be assumed by the zonal states only, or by some or all extra-zonal states as well by those invited to sign special marine protocols. The restrictions could include all weapons of the prohibited categories, or only some, or all weapons with a regional role. Restrictions could also include "thinning-out" and

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[123] UNCLOS, Article 88.

[124] UNCLOS, Article 301.

[125] In particular, the use of military force in compliance with the Charter's Articles 2:4 and 51 would not be prohibited by UNCLOS.

[126] The legal concepts of "innocent passage" and "transit passage" are defined in the United Nations Convention on the Law of the Sea (UNCLOS) Articles 17 - 33, 45, and 52, and Articles 38 - 44 respectively.

confidence-building measures. The formula to be chosen would respond to the relative importance in each case of restricting the zonal states, the nuclear-weapon states, and other extra-zonal states.

If the prime objective of establishing a zone is to cope with conflict within the region, the purpose of restricting nuclear weapon states at sea might seem less important, particularly if the same states are supposed to assume guarantor roles. If an important objective of establishing a zone is to reduce an external threat from weapons of mass destruction, restricting the stationing of prohibited weapons by extra-zonal states in waters adjacent to the zone could be important. Of course, both objectives could be relevant in a specific case.

While it is true that a man-of-war carrying nuclear weapons or other weapons of mass destruction onboard will have the legal right to innocent[127] passage through the territorial and archipelagic waters of zonal states (or of any state), such passages could lead to sensitive cases of interpretation: depending on the circumstances, they could be perceived as non-innocent or as acts of "gunboat diplomacy" in possible violation of a non-use provision.

It should also be noted that the "Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof" (Sea-Bed Treaty of 1971) had 90 parties as of 1 January 1996 including all nuclear-weapon states but France. The treaty prohibits the parties from placing nuclear weapons on the seabed beyond 12 nautical miles from their coastlines (Art. I and II). This area was later extended by declaration to include all sea waters, according to the so-called "shore-to-shore" formula[128].

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[127] According to UNCLOS, "*passage is innocent so long as it is not prejudicial to the peace, good order, or security of the coastal state*" (Art. 19:1). Art. 19:2 includes a long list of activities the practice of which by passing vessels would not be compatible with the rule of innocent passage. Art. 20 specifies that "*submarines and other submarine vehicles are required to navigate on the surface and to show their flag*".

[128] In September 1989, at the Third Review Conference of the Parties to the Sea-Bed Treaty, the parties unanimously adopted the so called "shore-to-shore" principle reading that "*all states parties to the treaty confirm that they have not emplaced any nuclear weapons or other weapons of mass destruction on the sea-bed outside the zone of application* (emphasis added) *of the treaty as defined by its article II*", i.e., inside 12 nautical miles from their coastlines, "*and have no intention to do so*" (Final Document SBT/CONF. III/15, Part II).

Complaints and Control Procedures

It has traditionally been recognized that the effective implementation of an agreement on a nuclear-weapon-free zone or on a zone free of weapons of mass destruction requires a system of verification to ensure that all states involved, zonal as well as extra-zonal, comply with their obligations.

The precise scope and nature of such a system would vary from zone to zone and depend upon the nature of the obligations prescribed. Generally, a zonal treaty would have to include provisions both for verifying compliance and for a complaints procedure for settling issues of suspected non-compliance, should such cases arise. As relevant, the zone verification system could for its implementation be based on verification enforced according to the NPT, the BWC, and the CWC.

In general, the following should be subject to verification under a treaty on a zone free of weapons of mass destruction or a nuclear-weapon-free zone:

(a) all activities of zonal states related to prohibited weapons to ensure that peaceful activities are not diverted to the manufacture of weapons:
(b) the commitment that no prohibited weapons shall be present within the zone; special regimes being required for sea areas;
(c) the removal of prohibited weapons that may be present within the zonal area at the time of entry into force of the zone agreement, possibly also requiring an account of the weapons history of participating zonal states; and
(d) the implementation of other measures associated with the zone agreement.

Most of the verification tasks related to peaceful nuclear activities of zonal states could be entrusted to the safeguards system of the International Atomic Energy Agency (IAEA). The IAEA is now operating safeguards in many states, including the non-nuclear weapon states parties to the Non-Proliferation Treaty. This traditional safeguards system could require extension and reinforcement for the purpose of verifying a specific zone agreement by additional procedures especially defined and described in that agreement. The provisions of the current NPT-related safeguards system were agreed upon as a compromise at the time of conclusion of the NPT-negotiations in 1968, i.e., during the Cold War. The system has been considered adequate and has worked well for a long

time. But recent experiences, primarily in Iraq, have provoked a revision of the system to make it more effective[129].

In some regions, the zonal parties may prefer to establish standing organs or special bodies to carry out verification. In regions where sharp conflicts exist, entrusting the task of verification to an international organization, perhaps supplemented by bilateral arrangements, might be preferred.

The IAEA could assume responsibility for safeguards subject to special agreements. To entrust all verification activities referred to above to the IAEA may go beyond the Agency´s current practices, although its statute opens up considerable possibilities in that respect.

There is also the possibility that an agreement on a zone could provide any party the right to undertake verification activities in other states parties to the zonal agreement, including on-site inspection. One model for such a system could be the verification system laid down in several arms control agreements adopted within the Conference on Security and Cooperation in Europe (CSCE), i.e., the Stockholm and Vienna Documents on confidence-building measures and the CFE Treaty[130]. These treaties give each party the right to undertake inspections within the territory of any other party, subject to annual quotas, and obliges every party to receive and accommodate on short notice such inspections within its own territory.

Another example of far-reaching mutual on-site verification is included in the 1988 Treaty between the USA and the USSR on the Elimination of their Intermediate-Range and Shorter-Range Missiles (INF Treaty)[131]. Mutual verification of this obligatory nature could be particularly attractive to states, such as Israel, that might often find themselves outvoted within international arrangements where decisions are taken by majority rule.

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[129] See *Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System* (IAEA document GC(39)17, 22 August 1995).

[130] These include: the Document of the Stockholm Conference on Confidence- and Security-Building Measures and Disarmament in Europe (1986); the Vienna Document 1990 of the Negotiations on Confidence- and Security-Building Measures; the Vienna Document 1992 of the Negotiations on Confidence- and Security-Building Measures; the Vienna Document 1994 on Confidence- and Security-Building Measures; the Treaty on Conventional Armed Forces in Europe (CFE); the Concluding Act of the Negotiation on Personel Strength of Conventional Armed Forces in Europe (CFE-1A); and the Treaty on Open Skies.

[131] The text of the INF Treaty is reproduced in *The United Nations DISARMAMENT YEARBOOK*. Vol. 12:1987 pp. 444 - 474.

Verification of arms control measures applying to sea areas would involve measures different from those for land. Every ship or aircraft has the right to navigate almost anywhere at sea, and that would certainly facilitate national verification activities. On the other hand, under international law, warships are "immune"[132], and attempts to negotiate on onboard inspection seem unrealistic. Furthermore, as discussed above, several nuclear-weapon powers follow a "neither confirm nor deny" policy regarding the presence of nuclear weapons on their specific ships[133]. But such a policy would be difficult to reconcile with a denuclearization or "thinning-out" regime at sea, if warships or aircraft of nuclear-weapon states would be permitted at all within the agreed zonal area. It is true that recent measures undertaken by the nuclear-weapon powers imply that most nuclear weapons have been removed from ships in peacetime, leaving only a few submarines cruising the seas with strategic nuclear missiles onboard[134]. However, the nuclear-weapon powers would continue to practice the "neither confirming nor denying" policy[135]. The problem will thus remain, although on a considerably lower scale.

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[132] UNCLOS, Art. 32.

[133] For an account of the consequences of these policies, see Prawitz J., *The "Neither Confirming nor Denying" Policy at Sea,* in Goldblat, J. (Ed), *Maritime Security: The Building of Confidence*, Document UNIDIR/92/89 (Sales No. GV.E.92.0.31).

[134] In their declarations of 27 September and 5 October 1991, Presidents Bush and Gorbachev declared that all nuclear weapons would be withdrawn from surface ships and submarines, except strategic ballistic missiles on board submarines (SSBNs). For texts, see footnote 39 above. France and the UK have announced similar withdrawals. These unilaterally declared measures are now implemented, and the only US and former-Soviet nuclear weapons on board ships in peacetime would be ballistic missiles based on strategic submarines which almost never call at foreign ports. In addition, the START and START II agreements would provide for dramatic cuts in seaborne strategic nuclear weapons. Only 1,750 warheads based on about 20 submarines will remain on each side. These cuts will be implemented before the year 2003.

[135] Since July 1992, the USA has replaced its "neither confirming nor denying" expression with the following "*It is general US policy not to deploy nuclear weapons on board surface ships, attack submarines, and naval aircraft. However, we do not discuss the presence or absence of nuclear weapons on board specific ships, submarines, or aircraft*".

The Meaning of Zero

The effective implementation of global or zonal treaties prescribing absence of weapons of mass destruction would require that the concepts of "absence" or "zero inventory" should be more closely defined.[136]

A pertinent example is the nuclear non-proliferation regime which goes beyond the provision of the NPT that non-nuclear-weapon states are obliged to have zero nuclear weapons. The treaty has over the years been complemented by additional regimes, including the Zangger Committee and the Nuclear Suppliers Group, physical security measures to protect sensitive materials from unauthorized access, a delivery vehicle (missile) control regime (MTCR), multinational nuclear power industry coordination, etc. An important purpose of such supporting policies and agreements is to make breakout more difficult and time-consuming. A non-nuclear-weapon state having zero nuclear weapons but an advanced nuclear power industry could quickly prepare to leave its zero status unless provisions exist to block such preparations.

The political objective of a zonal treaty must therefore be to institute an "effective zero", not merely a formal zero, for its parties. This would be achieved through ensuring that the effort a country would require to break out from a legal or formal zero is substantial and visible. Furthermore, time needs to be allowed to provide the outside world and the UN Security Council with a real opportunity to react before it is too late. Thus, control and verification procedures should be organized to meet this requirement.

The same principle would define the accuracy required for the verification methods although these can never guarantee a complete absence of regulated materials, such as fissionable materials, toxic chemicals, contagious biological agents, etc., outside those inventories subject to safeguard and monitoring. There will always be some material unaccounted for (MUF) due to the nature of the measurement methods used. MUF is a statistical concept that does not necessarily mean that some material has been diverted or has otherwise disappeared. The verification precision that would be required under an arms control treaty is to detect diversion of "significant" amounts of regulated material early enough to provide time for political counter-measures by the

[136] The problem of a definition of the arms control zero concept has been further analyzed by J.F. Leonard in *Nuclear Disarmament: The Meaning of Zero*, UNIDIR Report, forthcoming.

zonal or UN institutions assigned to deal with this type of issues. Marginal errors and MUF generation can and must thus be tolerated.

Comment on the Peaceful Use of Nuclear Energy

The Non-Proliferation Treaty (NPT) and the NWFZ treaties in force include an understanding that the regime would permit and indeed encourage the peaceful application of nuclear energy subject to international verification.

While the routine operation of the NPT verification system has as a whole been successful, the system has in a few specific instances, different in nature, not been able to disclose non-compliance with non-proliferation norms in time to permit adequate political action by the world community. One such failure was the inability to foresee and prevent the nuclear explosion in India in May 1974. The same could be said about the nuclear weapon program of South Africa, suspected to have existed for some time, but whose history and final dismantling was announced only in March 1993. A third case is the preparation for nuclear weapon acquisition by Iraq, undetected by the IAEA safeguard system until it was revealed as a consequence of the 1991 Gulf War. A fourth case involves the well-known disputes between the Democratic Peoples Republic of Korea and the IAEA on which nuclear facilities are relevant for inspection access. Such cases have their roots in regional distrust, which they in turn tend to enhance.

The ineffectiveness of the NPT verification system in such cases has led to the setting up of additional regimes to complement and support the NPT. Well-known among these regimes are the Zangger Committee and the Nuclear Suppliers Group (London Club) trigger lists according to which nuclear fuel- and equipment-supplying states impose restrictions on what could be available to other states.

However, the end result today is that a scrupulous implementation of the NPT letter and the co-operative reception of IAEA inspectors are no longer considered enough for all parties to be able to enjoy the right, laid down in the NPT (Article IV), to take part in international co-operation regarding some aspects of nuclear energy production. More transparency and adaptation to world community attitudes would be necessary. A recent example is the reaction by many states to the planned construction of two nuclear power reactors in Iran, a particularly sensitive dilemma because Iran is a long-time

party to the NPT, but also belongs to the problem-ridden Middle East region. Another example causing anxiety is the stockpiling of plutonium by Japan[137].

As remaining nuclear non-proliferation problems are related to a few particular regions, notably the Middle East, South Asia, and East Asia, the possibilities for solving the problem of how to ensure the non-proliferation of nuclear weapons and at the same time guarantee and encourage nuclear power production, could be tried as regional projects.

This approach now seems attractive following the Pelindaba Treaty's establishment of an "African Regional Cooperation Agreement for Research, Training, and Development Related to Nuclear Science and Technology" (AFRA); the Korean denuclearization declaration envisaging the institution of a "South-North Joint Nuclear Control Commission"; and a recent proposal for the creation of an "Asian Atomic Energy Commission" (ASIATOM)[138].

Relevant existing and successful models are the European Atomic Energy Community (EURATOM) and the Argentine-Brazilian Agency for Accounting and Control of Nuclear Material (ABACC). Both organizations operate control and inspection systems more intrusive but also more co-operative than the NPT-IAEA system. The result is regional confidence. Specifics of these organizations and their potentials as models for nuclear-weapon-free zone co-operation in nuclear power production are discussed by Dr. M. Kibaruglo in an annex to this report.

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[137] See *Plutonium and Nuclear Power in Japan*, in *The United States, Japan, and the Future of Nuclear Weapons*, The Carnegie Endowment for International Peace, 1995, pp. 40-44. See also Yong-Sup Han, *Nuclear Disarmament and Non-Proliferation in Northeast Asia*, Chapter 5, *Japan*, UNIDIR Research Paper No. 33, 1995, Document UNIDIR/95/12 (UN Sales No. GV.E.95.0.3), pp. 45-53.

[138] *Plutonium and Nuclear Power in Japan*, in *The United States, Japan, and the Future of Nuclear Weapons*, The Carnegie Endowment for International Peace, 1995, p. 44.

Chapter 4
The Middle East as a NWFZ or WMDFZ

The combination of political conflicts and significant nuclear programs in the Middle East provides both the political incentives and a technological basis for nuclear weapon proliferation in the region. This has been understood for long time, and it has also been clear that there is no easy solution. The current conflict pattern in the Middle East, while attracting the involvement of major powers, is regional. The possible ambitions of the countries in the area to acquire nuclear weapons are rooted in this regional context. Only if political tensions and fears are greatly reduced can the dangers of mass destruction weapons be brought under control.

Political efforts to change this situation have focused on the possibility of establishing a nuclear-weapon-free zone in the area. In 1974, Iran, supported by Egypt, raised the issue in the UN General Assembly[139]. Since then, the UN General Assembly has adopted a resolution every year recommending the establishment of a nuclear-weapon-free zone in the Middle East (NWFZME). Since 1980, this annual resolution has been adopted by consensus, i.e., with the support of all Arab states, Iran and Israel[140].

In 1990, President Mubarak of Egypt proposed the establishment of a zone free of weapons of mass destruction in the Middle East (WMDFZME)[141]. The proposal was not intended to replace the earlier idea of a nuclear-weapon-free zone in the area, but rather to be pursued in parallel with the earlier proposal[142].

Today, the expansion of the Middle East zone concept, to include all weapons of mass destruction and also their means of delivery, seems politically accepted. In May 1995, at the 1995 Review and Extension Conference of the NPT, the

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[139] UN Document A/RES/3263 (XXIX).

[140] The most recent resolution on the matter was adopted by the UN General Assembly on 12 December 1995, UN Document A/RES/50/66.

[141] Document CD/989, 20 April 1990.

[142] The Mubarak plan has recently been described by Mohamed Shaker in *Prospects for Establishing a Zone Free of Weapons of Mass Destruction in the Middle East*, Director´s Series on Proliferation, No. 6 Oct. 1994, Lawrence Livermore National Laboratory (UCRL-LR-114070-6). See also M. M. Zahran, *Towards Establishing a Mass-Destruction-Weapon-Free-Zone in the Middle East*, Institute for Diplomatic Studies, Ministry of Foreign Affairs of Egypt, October 1992.

parties adopted a resolution on the Middle East recognizing that the current peace process is contributing to "*a Middle East zone free of nuclear weapons as well as other weapons of mass destruction*", and further calling upon all states in the Middle East to take practical steps towards "*the establishment of an effectively verifiable Middle East zone free of weapons of mass destruction, nuclear, chemical and biological, and their delivery systems*".[143]

The United Nations' Expert Study

In the fall of 1988, the annual resolution then initiated by Egypt also requested the Secretary General to "*undertake a study on effective and verifiable measures which would facilitate the establishment of a nuclear-weapon-free zone in the Middle East*"[144]. The report[145] was prepared before the Iraqi invasion of Kuwait in August 1990, but submitted to the General Assembly afterwards. It was, however, welcomed and adopted by consensus that same year[146]. The UN report includes an account of the history of the issue in the United Nations. The issue of establishing a nuclear-weapon-free zone in the Middle East has also been researched and studied by the Egyptian scholar and diplomat Mahmoud Karem[147].

Catalogue of Preliminary Steps

The UN report did not explicitly propose the language for a zone treaty, but it did suggest a catalogue of confidence-building measures and steps to prepare for a regime that would finally become a nuclear-weapon-free zone.

Obviously, the establishment of a nuclear-weapon-free zone would require co-operation among not only the prospective zonal states, but also between them and the nuclear weapon states and other outside states.

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[143] Document NPT/CONF. 1995/32/RES/1.

[144] UN Document A/RES/43/65.

[145] UN Document A/45/435; UN Sales No.E.91.IX.3.

[146] UN Document A/RES/45/52, op.8.

[147] M. Karem, *A Nuclear-Weapon-Free Zone in the Middle East: Problems and Prospects*. Greenwood Press. New York. 1988. The same author later published *A Nuclear-Weapon-Free Zone in the Middle East: A Historical Overview of the Patterns of Involvement of the United Nations* in T. Rauf (Ed.), *Regional Approaches to Curbing Nuclear Proliferation in the Middle East and South Asia*, Aurora Papers 16, Canadian Centre for Global Security, December 1992.

Among the recommended confidence-building measures were a regional nuclear test ban; the application of IAEA safeguards on nuclear facilities in the area; the accession to the NPT of states currently non-parties; and provisions for transparency regarding all major nuclear projects in the area. The necessary international safeguard issues were explored at an IAEA workshop in Vienna on 4-7 May 1993, which specifically dealt with Modalities for the Application of Safeguards in a Future Nuclear-Weapon-Free Zone in the Middle East[148].

The UN report further suggested that nuclear-weapon powers could extend advance negative nuclear security assurances to prospective zonal states and commit themselves not to station nuclear weapons in the area. Any outside state could declare the past, current, and future supply of nuclear material and equipment to recipients in the prospective zonal area in order to shed light on projects creating suspicion regarding a possible military role.

The report recommended that outside support for peaceful nuclear activities in the area would be more appropriate if it were multilateral or regional in character. The institution of international facilities for nuclear waste disposal would help to ensure against the diversion of fissionable material for military purposes.

Finally, the UN report endorsed the view widely shared in the Middle East that verification procedures significantly more far-reaching than those so far implemented under the NPT would be necessary.

Shared Views

Although negotiations to overcome the conflicts in the Middle East are difficult, the consultations undertaken in the course of the preparation of the UN report, in the summer of 1990, showed a surprising degree of common views among many of the states in the area on fundamental matters. Arab states, as well as Iran and Israel, shared these views, among which the following can be cited:

* The process of establishing a NWFZME or a WMDFZME would take several years.
* The geographical concept suggested in the report was generally accepted.

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[148] The Proceedings of the Workshop on "*Modalities for the Application of Safeguards in a Future Nuclear-Weapon-Free Zone in the Middle East*", including the presentations made, are available from the International Atomic Energy Agency, Division of External Relations, in Vienna.

* Positive security assurances, beyond those outlined in Security Council Resolution 255 (1968)[149], would be necessary. If a zonal state should be subject to aggression, guarantors would assist the victim, punish the aggressor and provide necessary recovery support. (It is intriguing to note that such far-reaching measures were applied only a few months later to liberate Kuwait after its annexation by Iraq).
* Verification procedures much more far-reaching than those prescribed under the NPT would be necessary. The IAEA operations later undertaken in Iraq based upon the Security Council mandate[150] point to further needs. In addition, Israel indicated a need for bilateral verification rights similar to those prescribed in several arms control agreements adopted within the Conference on Security and Cooperation in Europe (CSCE)[151], in order not to be outvoted within the international bodies deciding by majority rule.
* Initial confidence-building measures would be an effective method for supporting the process of establishing a NWFZME.
* Although Israel was generally considered a nuclear weapon state, a view neither encouraged nor denied by Israel itself, nuclear weapons were considered to be more political than war-fighting instruments.

Because of the above-mentioned common views, a nuclear-weapon-free zone in the Middle East could be considered a realistic project, although the establishment of such a zone would most probably take time. The same could be concluded with respect to a Mubarak zone. The immediate obstacle is rather to get

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[149] UN Document S/RES/255 (1968). The resolution "*welcomes the intention expressed by certain states* (USSR, USA, UK) *that they will provide or support immediate assistance, in accordance with the Charter, to any non-nuclear-weapon State Party to the Treaty on the Non-Proliferation of Nuclear Weapons that is the victim of an act or an object of a threat of aggression in which nuclear weapons are used*" (Op. 2). On 11 April 1995, another resolution (S/RES/984 (1995) with a similar content was adopted. See footnote 45 above.

[150] UN Document S/RES/687 (1991), 3 April 1991.

[151] The Document of the Stockholm Conference on Confidence- and Security-Building Measures and Disarmament in Europe (1986); the Vienna Document 1990 of the Negotiations on Confidence- and Security-Building Measures; the Vienna Document 1992 of the Negotiations on Confidence- and Security-Building Measures; the Vienna Document 1994 on Confidence- and Security-Building Measures; the Treaty on Conventional Armed Forces in Europe (CFE); the Concluding Act of the Negotiation on Personel Strength on Conventional Armed Forces in Europe (CFE-1A); and the Treaty on Open Skies. At the CSCE Summit meeting in Budapest on 5 - 6 December 1994, the CSCE was renamed the Organization for Security and Cooperation in Europe (OSCE).

talks started. Part V of this report will deal with the issues of sequencing and staging the process.

The Geographical Middle East Concept

The "Middle East" is a well-known and traditional geographical concept, used in everyday political discussion. Defining the geographical extension of the Middle East for arms control application is not trivial, however.

Different definitions have for a long time been used for different purposes. One of these was introduced in 1989 by the International Atomic Energy Agency (IAEA) when discussing the application of safeguards in relation to the Non-Proliferation Treaty (NPT) or a nuclear-weapon-free zone in the area, i.e., "*the area extending from the Libyan Arab Jamahiria in the West, to the Islamic Republic of Iran in the East, and from Syria in the North to the People´s Democratic Republic of Yemen in the South*"[152]. The UN study, referred to above, found the IAEA concept to be too limited for its purpose, and suggested as a definition for the area that it should eventually encompass "*all states members of the League of Arab States* (LAS[153])*, the Islamic Republic of Iran and Israel*".

An adequate definition for the legal application of a NWFZME or a WMDFZME regime may or may not coincide with those used earlier for different purposes. Such a definition should encompass all states bound by a primary security relevance to each other. On the other hand, an ambition to include all states with *any* security relevance to each other would easily result in the definition of a Middle East concept that would include most of the Old World.

The area should thus at least include all the actors central to the specific conflicts of the Middle East. The most publicized of these is the Arab-Israeli conflict. But there are also grave tensions involving many other states in the region, as demonstrated by the recent examples of the Iran - Iraq war, the Gulf War, and the Polisario conflict.

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[152] *Technical Study on Different Modalities of Application of Safeguards in the Middle East.* Document IAEA-GC (XXXIII)/887, 29 August 1989. (On 22 May l990, Democratic Yemen and Yemen merged to form a single state with the name "Yemen"). A similar definition was suggested in the 1975 UN study, *Comprehensive Study on the Question of Nuclear-Weapon-Free Zones in all its Aspects.* United Nations Document A/10027/Add. 1, (UN Sales No. E.76.1.7). para 72.

[153] The League of Arab States has 22 member states: Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, and Yemen.

As a project definition must be based on the current political geography, it seems relevant, for the purpose of this paper, to define the basic Middle East area according to the UN formula mentioned above. But it should also be understood that the application of a zone regime may begin in a smaller area formed by a few core states, to be expanded to encompass the entire area. It might also be feasible to expand the zone to include adjacent sea areas.

Limitation of the zone area. The recommended UN definition excludes Turkey, Cyprus and Malta. Turkey is a NATO member, and all three states participate in the CSBM regime of the Conference on Security and Cooperation in Europe (CSCE). US nuclear weapons formerly deployed on Turkey´s territory have been withdrawn, and Cyprus and Malta do not host any such weapons, although two British military bases exist on Cyprus. Given these facts, those countries may best be thought of as neighbours to a future Middle East arms control zone, from which it would be reasonable to expect commitments of respect and support for a zonal regime.

Afghanistan and Pakistan border Iran to the east, and their inclusion in a Middle East regime has sometimes been suggested as desirable. However, their main interests focus in other directions, and their contribution to a Middle East regime may best be defined as commitments made by neighbouring states.

The same can be said about the newly independent states and former Soviet republics of Armenia, Azerbaijan, and Turkmenistan, also bordering the prospective zonal area.

Djibouti, Comoros, Somalia and the Sudan are members of the League of Arab States. While there may be substantial reasons for including the Sudan at an early stage, geography clearly leaves Djibouti, Comoros and Somalia in the periphery. The current problems in Somalia also exclude that country from consideration, for the time being.

On the western part of the North African coast, a few tiny enclaves of Spain may be included in the zone – Spain itself being outside, for the same reason as Turkey is. These enclaves may be treated as dependencies under a separate protocol (compare Protocol III of the Treaty of Pelindaba).

Neighbouring states. A Middle East area, defined according to the criteria set out above, will have neighbours around almost its entire periphery. Therefore, it might be desirable to invite neighbouring states, e.g., Afghanistan, Armenia, Azerbaijan, Cyprus, Greece, Italy, Malta, Pakistan, Spain, Turkey, Turkmenistan, and perhaps others, to assume special commitments to respect and support the regime. Neighbouring states in Africa could be engaged on the basis of the fact that the African Nuclear-Weapon-Free Zone and a Middle East zone would not only

be each other´s neighbours, but partly overlap. Therefore, a common protocol on mutual respect and collective support signed by the authorities of the two zones could provide for mutual neighbouring state functions.

On the basis of these understandings, a definition of the Middle East would be self-contained, including all essential states, and giving the area politically-established limits.

Sea areas and water ways. Several sea areas may be considered for inclusion in the zone. Both the Red Sea and the Persian Gulf would be "in the zone" even though they are international waters. Prospective parts of the basic area have coasts in the Mediterranean, the Atlantic, and the northwestern Indian Ocean. The proposed area is adjacent to a few international straits subject to the regime of transit passage, i.e., the straits of Gibraltar, Bab al Mandab, and Hormuz.

The Law of the Sea currently does not apply to the Caspian Sea, which used to be divided between Iran and the Soviet Union. As the Iranian part would probably be the only part to be included in a Middle East regime, a division of the Soviet part of the sea between the four new states of Azerbaijan, Kazakhstan, Russia, and Turkmenistan, would not matter. It has been suggested by some of the coastal states of the Caspian Sea, however, that the Convention on the Law of the Sea should apply to it, thus introducing new legal concepts such as territorial waters.

Also important in this respect is the Suez Canal, an international waterway crossing through Egyptian territory, open "*in time of war as in time of peace, to every vessel of commerce or of war, without distinction of flag*", according to the Constantinople Convention of 29 October 1888. Only a ship flying the flag of a state at war with Egypt can be prevented from passing the Canal. Aircraft are not referred to as they did not exist at the time. The Constantinople Convention is also referred to in the Egypt - Israel Peace Treaty of 1978, which provides that the Strait of Tiran and the Gulf of Aqaba are "*international waterways open to all nations*".

It should also be recognized that the application of a Middle East zonal regime in adjacent sea areas would require a separate discussion not only of the local political and military implications but also of the legal consequences. Therefore, maritime arrangements should be prescribed in separate protocols.

Objectives and Measures

A treaty establishing a zone free of weapons of mass destruction in the Middle East, on the basis of the global treaties prohibiting atomic, biological, and chemical weapons - the NPT, the BWC, and the CWC treaties - would share the general objective of those treaties: the complete renunciation of those weapons, except for the nuclear weapons remaining with the five nuclear weapon states. In addition, the general objectives of nuclear weapon-free zones as described in the "theory chapter" would apply, as would the non-possession, the non-stationing, and the non-use measures.

Furthermore, the Mubarak plan outlined, at the time it was presented, three general components:

(a) all weapons of mass destruction in the Middle East should be prohibited;
(b) all states of the region should make equal and reciprocal commitments in this regard; and
(c) verification measures and modalities should be established to ascertain complete compliance by the states in the region.

The proposal also pointed to certain considerations to be taken into account:

(d) a qualitative, as well as quantitative, symmetry of the military capabilities of individual states of the Middle East (asymmetries cannot prevail in a region striving for a just and comprehensive peace);
(e) increased security at lower levels of armament (security must be attained through political deliberations and disarmament rather than the force of arms); and
(f) the provision that arms limitation and disarmament agreements should consider equal rights and responsibilities, and that states should equally issue legally binding commitments in the field of disarmament.

The obvious way of designing a draft treaty on a zone free of weapons of mass destruction is to begin by drawing on the existing general arms control treaties. In case some states in the area are both non-parties to such treaties and essential for the operation of a zone, they should, as part of the establishment of the zone, be requested to adhere to prior treaties. The situation as regards these treaties as of 1 January 1996 is as follows:

- 17 states in the region are parties to the *1925 Geneva Protocol* prohibiting use of chemical and bacteriological warfare, while six are not: Comoros, Djibouti, Mauritania, Oman, Somalia, and United Arab Emirates;
- 14 states in the region are parties to the *Partial Test Ban Treaty*, while 9 are not: Algeria (signatory), Bahrain, Comoros, Djibouti, Oman, Qatar, Saudi Arabia, Somalia (signatory), and the United Arab Emirates;
- 21 states in the region are parties to the *Non-Proliferation Treaty*; only Djibouti and Israel are not. For nuclear energy capabilities and application of IAEA safeguards, see the reference made below to nuclear programs;
- 10 states in the prospective Middle East zone are parties to the *Biological Weapons Convention*, while 11 are not: Algeria, Comoros, Djibouti, Egypt (signatory), Israel, Mauritania, Morocco (signatory), Somalia (signatory), the Sudan, Syria (signatory), and United Arab Emirates (signatory);
- The entry into force of the *Chemical Weapons Convention* is currently underway. 15 states within the prospective zone have signed the convention, while the following 8 have not: Egypt, Iraq, Jordan, Lebanon, Libya, Somalia, the Sudan, and Syria. Among the Middle East signatories, only Algeria, Morocco, and Oman have ratified the Convention.

Also of basic importance when drafting the non-use provisions for a Middle East zone agreement would be the security guarantees provided to the NPT parties by the UN Security Council resolutions S/RES/984 (1995)[154] and S/RES/255 (1968), as well as the unilateral negative guarantees[155] extended by the five nuclear-weapon powers. The Biological and Chemical Conventions include non-use provisions.

Similarly, a wide adherence by Middle East states to the relevant new general arms control accords, which may be agreed in the future, would be of importance. Reference is here made to a *Comprehensive Test Ban*[156] scheduled for agreement in 1996, a *Cut-Off of the Production of Fissile Material for Nuclear Weapons or*

[154] Compare footnote 46 above.

[155] Compare footnote 45 above.

[156] The effect of a comprehensive test ban on nuclear proliferation risks has recently been analyzed by Eric Arnett in *Nuclear Weapons After the Comprehensive Test Ban: Implications for Modernization and Proliferation*, SIPRI, Oxford University Press. This monograph discusses several Middle East countries, including Iran, Iraq and Israel.

Other Nuclear Explosive Devices[157], and *Effective International Arrangements to Assure Non-Nuclear-Weapon States Against the Use or Threat of Use of Nuclear Weapons*.

The fundamental provisions of the zonal treaty (WMDFZME) can readily be modeled on those contained in the global treaties enumerated above. The drafters of the zonal treaty will *not*, however, be able to assume that all of its necessary parties will already be parties to the global treaties. That is certainly the case for Israel and the NPT, but it may also be true for a number of states with regard to chemical and biological weapons as well. The mutual confidence needed to ensure completion of the regional treaty can, however, be enhanced if membership in the various global treaties is close to universal throughout the Middle East. Moreover, practical experience with the verification arrangements of, for example, the Chemical Weapons Convention, will provide useful guidance in drafting the zonal treaty. In the end though, the zonal treaty will have to be a free-standing, independent, international instruments, tuned to the realities and peculiarities of the Middle East. It cannot be merely a compendium of obligations and arrangements already accepted by the parties in other agreements.

This is particularly true of the nuclear area. The invaluable capabilities of the IAEA to deter diversion of nuclear material should certainly be utilized by the zonal arrangement, but the zonal treaty will have to have provisions for mutual inspection; and for some parties, notably Israel, these provisions will be "fundamental" and the IAEA will be an "add-on" rather than the other way around.

The establishment of a WMDFZME, building on a general adherence in the region to these treaties, must be complemented by several other provisions. One important such addition would be special commitments not to possess or deploy ballistic and cruise missiles with ranges exceeding thresholds to be agreed. UN Security Council Resolution 687 on Iraq (the ceasefire resolution) specifies the removal of all ballistic missiles with ranges above 150 kilometers[158]. The resolution explicitly links the disarmament of Iraq to the "goal of establishing in the Middle

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[157] The "cut-off" of fissile material production for weapons purposes has been an issue on the arms control agenda since the early 1960s. It remained a controversial issue until 1993, when the UN General Assembly adopted a unanimous resolution (A/RES/48/75 L) recommending negotiation of a cut-off treaty that may now be concluded within a relatively short time. See Thérèse Delpech, L. A. Dunn, D. Fischer, R. Sood, *Halting the Production of Fissile Materials for Nuclear Weapons*, UNIDIR Research Paper No. 31, 1994 (UN Sales No. GV.E.94.0.29); and F. Berkhout, O. Bukharin, H. Feiveson, M. Miller, *A Cutoff in the Fissile Material*, International Security Vol. 19, No. 3, Winter 1994/95, pp 167-202.

[158] UN Document S/RES/687 (1991), Op. 8(6).

East a zone free of weapons of mass destruction and all missiles for their delivery"[159]. Today, the MTCR regime also homes in on missiles capable of carrying weapons of mass destruction over similar distances. This would suggest that a WMDFZ in the Middle East might proscribe ballistic and cruise missiles with ranges exceeding 150 kilometers, even if practical problems of definition and implementation prevent the prohibition of other categories of delivery vehicles.

The treaty would also have to regulate the complicated issue of nuclear weapon transit through zonal territory. An agreed prohibition of all such transits might appear attractive to many prospective zonal states. However, the nuclear weapon states could easily find this objectionable to the point of not being willing to sign the guarantee protocols. Bearing in mind that the conflicts in the Middle East are mostly internal to the region and the transits of others therefore less threatening to the zonal states, it seems reasonable to tolerate "innocent" transit in exchange for guarantees, as is the case in all zones established so far.

Two special guarantee protocols would also be desirable: one signed by the nuclear weapon powers, in which they pledge not to use, or threaten to use weapons of mass destruction against zonal states — the Biological and Chemical Conventions include such non-use provisions; and one signed by neighbouring states to support the zone regime and to assist in its implementation particularly regarding border policies. In addition, both protocols should include a commitment not to direct prohibited missiles against targets situated within the zone. The guarantee protocols should also define possible restrictions applying to sea areas adjacent to the zone.

Among the coastal states in the region, 12 are not parties to the *Sea Bed Treaty*, i.e., Bahrain, Comoros, Djibouti, Egypt, Israel, Kuwait, Mauritania, Oman, Somalia, the Sudan (signatory), Syria, and the United Arab Emirates. Their accession to the treaty would be desirable, at least as long as the only remaining nuclear-weapon-power non-party, France, is not bound by the treaty.

A special provision prohibiting nuclear weapon testing, the dumping of radioactive waste, and attacks on nuclear facilities containing large amounts of radioactive material could be included in the zonal legal instruments.

Special organizations for the implementation and supervision of the zone arrangements would have to be instituted. A verification machinery could be based on those of the global treaties applying in the region and complemented by special verification rights similar to those operating according to other zonal treaties and

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[159] *Ibid.*, op. 14.

the OSCE regime. An organization for co-operation in the field of nuclear energy production for peaceful purposes, similar to EURATOM and ABACC, could contribute substantially to confidence-building in the area.

Current Nuclear Programs

Many countries in the Middle East intend to develop nuclear power production for peaceful purposes and to establish nuclear fuel cycle facilities, which in some cases would also have the potential to serve a possible nuclear weapon fabrication program. In many cases, such peaceful programs have been initiated, but they are modest today[160]. Only Israel has an accumulated production of fissile materials and a current capability to pursue a nuclear weapon program. In addition, it was revealed in 1991 that Iraq had undertaken significant clandestine preparations to fabricate its own nuclear weapons.

It should be understood, however, that acquiring even a modest nuclear force without outside assistance is a major operation. The time and effort required for various proliferation-prone states to join the atomic club are often grossly underestimated. The recently disclosed nuclear weapon program of South Africa is illustrative in this respect.

It should also be noted that many countries in the Middle East are parties to the Non-Proliferation Treaty and thus are obliged to submit all of their nuclear material to IAEA inspection. Israel is the only country of significance which is not under this obligation.

Morocco is a member of the IAEA and party to the NPT (1970). Morocco has one 2 Megawatt research reactor under construction.

Algeria is a member of the IAEA and party to the NPT (1995). Algeria has one 1 Megawatt research reactor which went critical in 1989 and is subject to IAEA safeguards. A second 15 Megawatt test reactor went critical in 1992 and will be subject to IAEA safeguards.

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[160] Facts about the nuclear programs of individual countries used in this paper were found in the IAEA publications *Nuclear Power Reactors in the World* (April 1995 Edition); *Nuclear Research Reactors in the World* (December 1995 Edition); and *Nuclear Power Status in 1994* (PR 95/9 26 April 1995).

Libya is both a member of the IAEA and party to the NPT (1975). Libya has one 10 Megawatt research reactor subject to IAEA safeguards.

Egypt is both a member of the IAEA and party to the NPT (1981). Egypt has one 2 Megawatt research reactor subject to IAEA safeguards. A 22 Megawatt reactor has been under construction since 1993.

Israel is a member of the IAEA but not party to the NPT. Israel has one 5 Megawatt research reactor and one 26 Megawatt reactor (Dimona). The former is subject to IAEA safeguards, the latter is not. The Dimona reactor is widely assumed to be the basis for production of plutonium for the possible manufacture of nuclear weapons.

Syria is a member of the IAEA and party to the NPT (1969). Syria has one 30 Kilowatt Miniature Neutron Source Reactor (MNSR).

Iran is both a member of the IAEA and party to the NPT (1970). Iran has one 5 Megawatt research reactor, two subcritical assemblies and one 30 Kilowatt MNSR, all subject to IAEA safeguards. Another small facility is under construction. Two power reactors of 950 and 1196 Megawatt respectively have been under construction since 1975 but have not been worked on for some time. Negotiations on assistance and co-operation for their completion have recently been conducted with Russia and China.

Saudi Arabia is both a member of the IAEA and party to the NPT (1988) and has planned to build one 10 Megawatt research reactor.

Iraq is a special case. Iraq is both a member of the IAEA and party to the NPT (1969). Before the Gulf war in 1991, it was believed that the Iraqi nuclear program was limited to one 5.5 and one 5 Megawatt research reactor. Both were subject to IAEA safeguards. They were shut down during the Gulf war.

However, after the Gulf war, it was revealed that Iraq had been pursuing for many years a clandestine multi-billion dollar nuclear weapons program. This program, also involving various uranium enrichment efforts, stood in direct violation of Iraq's obligations under the NPT. By Security Council decisions, Iraq has now been ordered to destroy all facilities related to its programs for weapons

of mass destruction and to their missiles of delivery. This process is supervised and verified by a Special Commission appointed by the Security Council[161].

The current nuclear programs in the Middle East countries suggest that only Israel possesses nuclear weapon capability; or as many experts believe, is already a nuclear weapon power. The Israeli government has many times declared that Israel will not be the first country to introduce nuclear weapons in the Middle East. This policy of deliberate ambiguity has been said to serve Israel´s security interests in three ways: First, in times of gloom, it gives hope to the Israelis; secondly, it may provide caution to the enemies of Israel; and thirdly, it relieves other states from the delicate burden of taking an explicit position on the matter[162].

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[161] UN Document S/RES/687 (1991), 3 April 1991. The resolution establishes a Special Commission (UNSCOM, Op. 9 (b)) to execute the disposal of Iraq´s capabilities regarding weapons of mass destruction. The IAEA was, in the same resolution (Op. 12-13), entrusted with the execution of the nuclear weapon part and the setting up of a monitoring system to ensure that such weapons are not reintroduced in Iraq. These IAEA operations have substantially developed verification practices and accumulated experience of great importance for future arms control regimes. They have been described by the IAEA Director General, Dr. Hans Blix, in *Verification of Nuclear Non-Proliferation*, The Washington Quarterly, Autumn 1992, pp. 57-65. A recent account of the development of the IAEA verification efforts is included in a Report by the IAEA Director General, *Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System* (IAEA Document GC(39)/17, 22 August 1995). The UNSCOM activities during its first year have been described by its Executive Chairman, Ambassador Rolf Ekéus, in an article (including the text of the resolution) in *The United Nations Special Commission on Iraq* in *SIPRI Yearbook 1992: World Armaments and Disarmament*, Oxford University Press, 1992, pp. 509-530. Mr. Ekéus continues his description in *The United Nations Special Commission on Iraq: Activities in 1992* in *SIPRI Yearbook 1993: World Armaments and Disarmament*, Oxford University Press, 1993, pp. 691-703. See also T. Trevan, *UNSCOM: activities in 1993* in *SIPRI Yearbook 1994*, Oxford University Press, 1994, pp. 739-758. The work of UNSCOM is also described, including extensive quotations from official texts, in *The United Nations DISARMAMENT YEARBOOK*, Vol. 16:1991 (UN Sales No. E.92.IX.1), 1991, pp. 32-54; and in *The United Nations DISARMAMENT YEARBOOK*, Vol. 17:1992 (UN Sales No. E.93.IX.1), pp 248-258. See also J. Molander, *The United Nations and the Elimination of Iraq´s Weapons of Mass Destruction: The Implementation of a Cease-Fire Condition*, in F. Tanner (Ed.), *From Versailles to Baghdad: Post-War Armament Control of Defeated States*, Document UNIDIR/92/70 (UN Sales No. GV.E.92.0.26); and R. Ekéus, *UNSCOM´s Experience in the Field of Disarmament*, in *Disarmament in the Last Half Century and its Future Prospects*, DISARMAMENT Topical Papers 21, United Nations, N.Y., 1995, pp. 120-124.

[162] Atterling Wedar, C., Hellman, S., Söder, K., (Eds.), *Towards a Nuclear-Weapon-Free World*, Swedish Initiatives (ISBN 91-972128-0-6), Stockholm, 1993, p. 181.

The military nuclear program of Iraq has now been eliminated. The other Arab states and Iran cannot at this time support nuclear weapon programs, but may be able to do so in the not-so distant future.

Chapter 5
Staging and Sequencing

Any major development in the relations among a group of states goes through a sequence of stages, from its original conception to its full realization. A regional nuclear-weapon-free zone is just such a major development. Its eventual fulfillment, it may be assumed, will center on a treaty, legally binding most states in the region, including all significant ones. The wider regime will include other agreements, understandings, procedures, norms, etc., either reached among more limited groups of states or perhaps extending beyond the boundaries of the region to involve commitments from neighboring states, major powers, or global institutions such as the United Nations.

As has been pointed out earlier in this report, examples from other regions suggests that the full development of a nuclear-weapon-free zone and regime is almost certain to be an extended process, with the duration of its separate stages varying within wide limits. Both the Latin American and the African zones were conceived and proposed in the early 1960s. The Latin American process produced the Treaty of Tlatelolco with what today is seen as astonishing speed. It was signed in 1967 and entered into force almost immediately. The task of bringing it fully into force for all states in Latin America is, however, at this writing in 1996, almost but not totally accomplished.

The sequencing of the African nuclear-weapon-free zone has been quite different, though requiring almost the same three decades plus. Only in 1995 could the treaty be concluded, with entry into force for a substantial number of states expected in the next few years.

The idea of a Middle East nuclear-weapon-free zone was not seriously advanced until the mid-1970s. In 1990, President Mubarak of Egypt urged the concept to include all weapons of mass destruction. The proposal has thus been for some two decades in what might be called the pre-negotiation stage. This should be followed, one may hope rather soon, by a phase during which an actual treaty text is negotiated. Once such a text has been declared satisfactory by an adequate number of potential parties, a stage involving signature and entry-into-force will follow. As has been exemplified by the Treaty of Tlatelolco, the moment of legal entry-into-force (EIF) will be followed by a stage in which the institutions

established by the treaty will come fully into operation[163]. Concurrently with this institution-building phase, the principal sponsors of the treaty will be occupied soliciting support from laggard states or critics, a stage one may hope will not drag on nearly as long as it has in Latin America.

Once in force, the treaty parties will go through a series of steps culminating in complete denuclearization, as well as confirming the bans on biological and chemical weapons. At this point, the treaty might be described as mature. Following maturity, the treaty and various elements of the broader regime will presumably be periodically reviewed and possibly up-dated and amended or strengthened in various ways.

The sequencing process outlined above may be summarized as follows:

1. pre-negotiation phase;
2. negotiation of a treaty text;
3. signature and initial entry-into-force;
4. institution building and additional accessions;
5. step-by-step implementation of all treaty commitments, maturity of the treaty and regime;
6. mature operation, review and possible amendment.

Some preliminary observations on each of these phases will form the bulk of this part of the report.

The Pre-Negotiation Phase

This phase of the development of a NWFZ or a WMDFZ may be considered to have begun twenty years ago. The comparable gestation phase for the Latin American zone was, we have noted, quite brief, but its implementation phase has taken some twenty-five years. The African zone remained in gestation for about twenty-five years and has now been in negotiation some five years. External political developments are, of course, the determining factors in moving from one phase to another, and it may well be that the series of political breakthroughs in the Middle East are now setting the stage for a movement into negotiation in this area.

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[163] There may be a relatively brief phase preceding entry-into-force during which a preparatory body organizes these institutions. Such a preparatory phase is currently in operation for the Chemical Weapons Convention.

One cannot be completely confident, however, and in view of this uncertainty it is important for all states in the region to seize every opportunity that may arise to underline the seriousness of their commitment to the objective. If this is not done, it will be only too easy for skeptics, cynics, and flat-out enemies of a zone to mock the lack of progress and build obstacles to forward movement.

At the very least, governments should begin to address the many, very real problems that will need to be solved. They should do so openly and not just behind closed doors, and should draw academic and political circles in their own societies into these discussions. There is a legitimate concern not to raise false expectations in the public mind, but it is also legitimate to be concerned that public opinion may, if not given leadership, crystallize around facile, shallow judgements that proliferation is inevitable and any effort to halt it or roll it back is hopeless and dangerous. The state of public opinion in the three Western democracies should warn us how difficult it is for the public opinion in a nuclear-weapon state to imagine that there can be life — and national security — after nuclear weapons.

An even more important task in the pre-negotiation phase is for governments to think through and convey to others the most important elements of the positions that they will eventually adopt in the actual negotiations. If this is not done, then when negotiations do begin there will be shock and even outrage on all sides. "These people are not serious". "How could they imagine that we would ever accept that?" And so forth. On the other hand, if the most troublesome of these problems are aired in advance, the actual negotiations are less likely to break up on Day Two. All of the parties may feel, for good reason, that certain positions are being adopted for bargaining purposes, but reducing the surprise element will make less likely emotional charges of bad faith.

The evident and frankly acknowledged unwillingness of Israel to move to negotiations, together with the fact that Israel alone in the region presently possesses the unsafeguarded facilities that could produce nuclear weapons, places a particular responsibility on Israel for good management of the present stage.[164]

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[164] Israelis understandably do not like to be told that they have a "special responsibility" with regard tot any part of the peace process with the Arabs. From the Israeli viewpoint, the long conflict is far more the result of Arab actions than of anything Israel has done. Moreover, they note, Israel is running enormous risks to its security in the territorial concessions it is making at this time. The Arabs, they believe, should understand this and leave the nuclear question alone, for settlement at the last stages of the process.

An outside observer may acknowledge the political validity of these arguments, given the deep divisions in Israel over the current negotiations. Nevertheless, one could also hope for an Israeli approach to the nuclear question that would manifest more imagination and flexibility, an

Skepticism about Israel´s ultimate intentions in the nuclear area should not occasion indignation. There is, after all, a great deal of skepticism in Israel about the ultimate intentions of others with regard to a true peace. And just as there are good reasons behind this skepticism about the intentions of some Arabs, so there are good reasons for Arabs to be skeptical about how much support there is in Israel for an eventual elimination of Israel´s nuclear capability. The sincere advocates on both sides of a denuclearized Middle East truly at peace will have to carry forward a more active and more positive dialogue or they will delay and damage the actual achievement of their declared objectives.

On the Israeli side, there needs to be a clear distinction between the conditions that will permit negotiations to begin and the conditions that would permit actual denuclearization to begin and then at a later point be realized. Substantial periods of time will inevitably separate these stages, the criteria for the start of the process cannot reasonably be identical with those appropriate to its final phase. Nor can mantras about a "slippery slope", substitute for hard thinking about how the process can be prudently paced and controlled.

On the Arab side, there will have to be more serious study of what exactly is entailed in any denuclearization process. Calls for Israel to join the Non-Proliferation Treaty without delay simply discredit those who issue them and reveal a lack of understanding of Israel´s security situation as it is seen by responsible, moderate Israelis, as well as a lack of knowledge of the NPT itself and of what is involved in adhering to it. As the Palme Commission[165] pointed out more than a decade ago, true security for any nation can be obtained only by taking into account the security concerns of others. It has not been easy for Americans and Europeans to apply this wisdom to their various situations. In the Middle East, an effort of this sort has hardly begun.

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approach that would take account of the importance to Israel of keeping alive Arab hopes that the nuclear matter can be solved through diplomacy rather than through some form of confrontation risking damage to the NPT. Neither Israeli nor Egyptian diplomacy displayed its best qualities in the quasi-confrontation over NPT extension in early 1995.

[165] *Common Security*. Report by the Independent Commission on Disarmament and Security Issues. Simon and Schuster. New York 1982. UN Document A/CN.10/38.

The Negotiation Phase

The central objective of this phase is obviously a treaty text. Whether it uses the structure suggested in our section on blending the various weapon regimes or some quite different architecture will be, obviously, completely up to the negotiating parties. It is not even clear who the negotiating parties will be. Israel and its immediate neighbors will have to be present or the negotiation will not be meaningful. What additional participants will have to be involved in order to meet the security requirement of Israel or others in the "core group" is not obvious. As pointed out elsewhere, the fact that almost all other states in the region are parties to the Non-Proliferation Treaty may make their presence in the negotiations or even in the ultimate zonal treaty less urgent than if they were legally free to develop nuclear weapons. Wide adherence to the treaties on chemical and biological weapons could have the same helpful effect.

All states in the Arab League and Iran should certainly be invited to participate. At least a few may reject the invitation, and the core group will then have to decide whether to go forward or to wait for changes to occur. No one would want to give one or two hard-line governments a permanent veto on the initiation of the negotiation process. On the other hand, if a moderate delay could give diplomacy time to overcome the problem and avoid creating enemies for the zonal structure, that might be worth trying. The history of India and the NPT project in the 1960s may be instructive in this regard. Certainly it will be desirable — many would say essential — to have both Iran and Iraq in the eventual treaty structure, but how urgent that need may be and how it can best be satisfied are equations which today have so many unknowns that they can hardly be studied, much less solved. In a sort of irony, each of these important countries has the strongest requirement imaginable to avoid allowing the other to get nuclear weapons. Others share that requirement, but not quite so intensely as these two bitter enemies. There is, for this reason, a powerful dynamic at work pushing both of them toward participation in a zonal treaty, assuming that its provisions will be truly effective barriers to gaining a nuclear capability.

If either Iran or Iraq should refuse to join the negotiations, the core group and the American and Russian co-sponsors of the Middle East peace process would need to assess:

a) probable political evolution in the holdout country;
b) the possibilities for it to evade or break out of its NPT obligations; and

c) the effect of going forward or not going forward into negotiations without the holdout nation.

Although one´s first instinct is to judge the negotiation useless or even harmful without all key states, further reflection suggests that this may not be true. No conclusion can or should be reached in the abstract, and the problem may never present itself.

Neither the USA nor the Russian Federation is a Middle East country and they therefore will obviously not be parties to the treaty itself, though they certainly should adhere to relevant protocols together with the other nuclear-weapon powers and with other extra-zonal states concerned. Whether they should offer to co-chair the actual negotiations is a difficult question. It is true that in the end, Middle East peace and security must be made and maintained by the nations who actually live there, but everyone is aware how much more slowly the peace process would move without prodding and mediation from outside, especially from the USA.

From a protocol viewpoint, a US-Russian offer to co-chair the negotiations would be quite in order. They have been co-chairing the overall process since Madrid[166] as well as its several multilateral working groups. US activism is welcomed by the Arabs, who see it as the only effective means of pressure on Israel. In a different way, it is welcomed by Israel, which considers the USA its only reliable friend. At the same time, Arabs are constantly in despair that the USA ever will actually put pressure on Israel and are constantly searching for means to do so on their own. The Israelis are equally worried that an American administration might hark back to the Eisenhower era and actually use its leverage on Israel. They are also deeply convinced that their interests and real peace are better served by direct negotiations with their neighbors.

On balance, we believe it preferable for the USA and Russia to co-chair the negotiations. Both Arabs and Israelis may also prefer this, though for quite opposite reasons. The Arabs tend to think that if the Americans directly experience Israeli obstructionist tactics (which they fully expect on the nuclear issue), then there is at least some chance of gaining a bit of US support. The Israelis, who prefer in bilateral negotiations to face only their Arab neighbor, might find it more oppressive psychologically to deal with a roomful of them.

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[166] The opening session of the Peace Conference on the Middle East was held in Madrid October 30th to November 1st, 1991, in the presence of the US and the USSR Presidents.

It also would be reasonable for the USA and Russia, who both have important national interests in the region, to be directly involved. Many other states also have interests there and certainly should be able to participate as observers, and not merely silent observers. The USA and Russia, however, have particularly direct and vital interests in the Middle East. Those of the USA do not need to be expanded on, especially if one recalls its role in the last Gulf war. It is easier to overlook how important are Russia´s interests there, especially in nuclear matters. Geographically, it is much closer than the USA. It would be more directly threatened by nuclearization of the region. Now is a moment of political, economic, and diplomatic weakness for Russia, but it will in time recover much of its former strength, though not, one hopes, its imperial character. As its strength returns, it will be much preferable if its leaders can look back and see that important political and military developments in the region were negotiated with the active participation of Russian representatives and with Russian concerns taken fully into account.

The Entry-Into-Force Phase

The period stretching from completion of a treaty text through the formal opening of the treaty and its protocols for signature to the completion of sufficient ratifications to bring the document formally into force is a key phase of the enterprise. Once the text is completed, it is not likely that the project would then fall entirely, but it could go into a kind of suspended animation in which forward movement was halted by unfavorable political developments.

The early signature of the treaty by all the key participants in the negotiation should be a first, urgent objective. It could be encouraged by an overwhelming endorsement in the first UN General Assembly following completion of the negotiation phase. Governments signing the document will both be giving a political endorsement to the project and will be binding themselves legally not to act in a fashion that could frustrate the purposes and objectives of the treaty while it is awaiting ratification. This would be very helpful in one obvious way: it would reinforce the commitment of Israel´s neighbors already expressed in their NPT membership to solving the regional nuclear problem by "levelling down" rather than by threatening to "level up" to a capability like that possessed by Israel. It would thus be a renewed commitment to the *status quo* in the area and to the hope of a complete and permanent denuclearization.

It would, however, be dangerous to expect this "freeze" to last indefinitely. Unless it is possible to move with reasonable speed to ratification and entry-into-

force (EIF), an unravelling process could set in. The Arab signatories could come to feel that they had entered an unequal bargain in which they renewed their pledges to remain non-nuclear without securing any meaningful movement on Israel´s part. Such feelings would have much less justification if during this phase between signature and entry-into-force, Israel were prepared to make some significant contribution to building confidence in its ultimate intentions. The problem could be serious if this phase were to last, as is likely, for two or three years or even more.

The negotiations on a global cut-off treaty could offer one possible solution to this problem. We have suggested elsewhere that they might well be moving forward, perhaps very slowly, in the same time frame as the negotiation phase of a zonal treaty. If the latter were opened for signature and signed by the most important governments before the global cutoff had entered into force, it could then be appropriate for Israel to take the first substantial step in its denuclearization process and close its Dimona facility. It could have been closed unilaterally without any international verification at an even earlier moment if Israel found it politically expedient to make this sort of "down payment". But if it had not been closed, the signature of the zonal treaty would be an opportune occasion for such action. An invitation to verify closure, perhaps extended to Egypt, perhaps to other neighbors as well, could underline the importance Israel attaches to so-called adversary verification.

Closing Dimona with verification will be the basic obligation accepted by Israel in joining the cutoff convention. It is also likely to be the key initial step in the process that will be laid out in the zonal treaty. The early fulfillment of scheduled obligations has become a useful feature of East-West arms control processes, and its introduction into the Middle East would be most helpful in political and psychological terms. Governments should be at pains to show themselves eager to fulfill commitments *rather* than dragging out the process in a grudging manner until the last moment. This sort of spirit should of course pervade both sides, and many occasions will offer themselves in the peace process as a whole, *not* necessarily in clearly linked actions inside each element of the process. A promise by Israel during the treaty negotiations or even earlier that it will consider such measures of early fulfillment would be an important contribution to settling a good tone for the broader regional arms control process. It is not only Israel that should exert itself to set a good tone. Acceptance by Arab states, especially Egypt, of the principle that obligations *can* be fulfilled even earlier than there is a treaty requirement to fulfill them will be helpful.

The most important activity of the phase after signature will naturally focus on securing early entry-into-force with a maximum number of parties, both in the region and outside. On the one hand, entry-into-force should be scheduled as soon as possible in order to reduce the risk that some untoward development might lead a key participant to change its mind. On the other hand, this phase should last long enough to give all the participants, including particularly the US and Russia, a chance to persuade important holdouts that joining the treaty is in their interest[167].

The formal provision for entry-into-force will have been decided and written into the treaty structure during its negotiation. The least important aspect of these arrangements will be the number of ratifications specified to make the treaty an operative and binding document. If the negotiations are well managed that threshold will easily be reached following signature. Much more important will be the conditions that the leading participants, especially Egypt and Israel, have in mind as their absolute requirements for their own ratification. For Egypt and no doubt other Arab states as well there will be no treaty without Israel. No one will have any doubt about this. Some Arab countries, especially in the Gulf area, may also feel strongly about the need for Iran and Iraq to participate, but whether they will condition their ratification in that way cannot at this point be foreseen.

Israel´s minimum conditions for participation may be rather complex. One can imagine an Israeli willingness to go forward with ratification even if some key country such as Iran is not at that point joining. But this willingness would likely be conditioned on a treaty structure that permitted Israel to stop short of the complete elimination of its deterrent if the threats to its existence had not also been eliminated. The degree to which a phased treaty structure of this character would be acceptable to other states in the region will only emerge during the negotiation phase, when the positions of all significant countries, including possible non-participants, will be seen more clearly. For reasons well known to those familiar with the Israeli concept of existential security threats, it appears at this point that unless a conditioned, phased structure of some sort is accepted there is not likely to be a successful negotiation.

Once it is clear that entry-into force is likely to follow fairly closely on signature, the signatories will move to prepare the institutions that will come into legal existence with entry-into force. If there are to be both an organization of the parties and a verification institution, then a preparatory group could also organize

[167] It would be desirable, as noted above, to make this effort during the negotiation phase, but political developments in the holdout country might open up a second chance during the ratification phase.

ceremonies around the entry-into-force (as should earlier have been done around the opening of the documents for signature) in whatever way secures maximum political effect and commitment.

The Institution-Building Phase

The initial entry-into-force should be followed by a period in which the routine activities under the treaty regime are properly set in motion. As is being discovered in The Hague in preparing for the Chemical Weapons Convention, there are many problems that even the most extended and detailed negotiation cannot completely resolve, and this task will surely carry over into the period of initial operations under the treaty.

If this institution-building phase goes well, the basis will have been laid for the subsequent, centrally important phase in which the schedule of actions developed in the negotiation and set forth in the treaty are carried into effect and properly verified. Declarations by the parties of all relevant facilities would be compiled and submitted to a secretariat. Practice inspections could be carried out, both of a selection of declared but not sensitive nuclear facilities and of other facilities proffered for trials of the sort of visits that might be dispatched in search of an alleged undeclared installation.

Similar training and institution-building should also go forward at this time in the biological and chemical weapons areas. Verification of those treaties is quite different from that relating to nuclear capabilities. If the regional inspectors are to have the expertise they will need to mesh with the global verification system, it will be important to have some of them trained at the OPCW[168] in The Hague as well as whatever institution may by that time exist in relation to the Biological Weapons Convention[169].

It should be noted that in the biological weapons area, "verification" is extremely difficult, some would say impossible, and a confidence-building regime may be the best that can be achieved. Total openness and transparency is the best antidote to fears that biological weapons are being prepared, and the parties to a

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[168] When the CWC enters into force, an Organization for the Prevention of Chemical Weapons (OPCW) will be established in The Hague. A Preparatory Commission preparing the Organization began to work on 8 February 1993.

[169] Efforts to develop better measures for confidence-building and even for verification of compliance with the BWC have been under way for some time both in expert working groups and at the Review Conferences of parties to the Convention.

regional treaty should prepare themselves and their industry, especially pharmaceutical, for very complete declarations and quite intrusive visits to civil facilities. Frequent exchanges among scientists and joint projects, especially in public health, can also be reassuring. The best defense against biological weapons is a good public health system and an educated public. The best assurance against possible resort to biological weapons is a political relationship that would discourage and condemn the sort of fanatic hatred that could motivate resort to such a militarily useless but potentially devastating terror weapon.

It should go without saying that during the institution-building phase additional accessions to the treaty by any non-parties should be sought. This will be the last phase during which participants can "get in on the ground floor" and help to shape the operation of the treaty structure in the way that best meets their interests. If the treaty provides — as it should — for positive advantages to participants regarding the peaceful uses of any of the technologies being constrained, this opportunity should be urged on them before it is too late. Regional enterprises for nuclear power or for public health, for example, should discriminate in favor of treaty parties, which of course means against holdouts.

Benefits for "free riders" cannot be completely excluded, nor should one want to do so. A region free of mass destruction weapons will be healthier and more prosperous for all; but where a preference can be built into regional institutions there should be no hesitation to do so.

The Implementation Phase

We have assumed that, like the Treaty of Tlatelolco and the Chemical Weapons Convention, the WMDFZME treaty will come into full effect through a prescribed series of steps. Some of these may be scheduled in the treaty itself, but the final step, the disclosure by Israel of its special fissionable material stocks and their submission to international verification, is too dependent on political developments to be made "time bound". Earlier, less drastic steps in the process might, however, be set in time frames of some sort. These early disarmament and verification measures must of course operate on the other parties as well as on Israel. The facility declarations of all parties under all regimes (NWFZ, BWC, CWC, missiles) should be mutually verified. The fact that all the countries that have had chemical weapons are complying with the provisions of the Chemical Weapons Convention should be verified. The recommendations of the expert groups that have been meeting under the Biological Weapons Convention with regard to declarations of biological research facilities (laboratories with various

"bio-safety" levels, etc.) should be treated as mandatory and verified. Practice inspections of the type aimed at undeclared facilities should be carried out in all state-parties so that unpleasant surprises do not frustrate a real inspection if one is called for. All of this verification activity will make the region much more transparent, much less vulnerable to surprise attack than at present. Verification of conventional weapons agreements will add another increment to this transparency.

It will be important that Israel be scheduled for and actually carries out some significant step in the denuclearization process at a fairly early point in this implementation phase. That will convey to everyone in the region that the enterprise is "for real". It will also give both Israel and its neighbors an investment in the complete success of the enterprise, a reason to ensure that this step forward becomes irreversible. True irreversibility in technical terms will not be reached for some time, if ever; but every real step toward that goal contributes to political irreversibility.

If Dimona had not already been closed by this stage, it would be the logical choice for this initial "real" measure. If it had been closed but not inspected, then inspection would be a significant milestone. If, as might be hoped, Israel had already taken both of these steps in the spirit of "early fulfillment" or as an agreed obligation under a global cut-off treaty, then other possibilities should be considered.

Early steps towards denuclearization beyond the sealing of Dimona would logically fall in either of two areas: dismantling of facilities at Dimona or disclosure of information on stocks of special fissionable material.

In the first area, one thinks immediately of dismantling the plant for the reprocessing of spent fuel producing plutonium. "Sealing" Dimona means in essence sealing this reprocessing plant. The reactor could, if it has not outlived its useful life, continue to operate with the fuel then safeguarded in the usual way. The dismantling of the Dimona reprocessing plant would not be irreversible; Israel could easily replace it if the treaty were to collapse and the need were later to arise. But its destruction would be an important step, more significant in psychological terms than its sealing.

It has been suggested that a nuclear-weapon-free zone treaty for this region should follow the example of the North-South agreement in Korea and ban both enrichment and reprocessing. There is no need for either capability in a healthy, economically sound nuclear power program in the Middle East. Idle enrichment capacity is plentiful elsewhere. Separation of plutonium no longer serves any purpose anywhere except to make people worry about its potential military use. Even if a ban on enrichment and separation had not been included in the basic

nuclear-weapon-free zone treaty, the dismantling by Israel of the only separation facility that exists in the region would put Israel in a good position to argue for adding it, perhaps in an additional protocol. Such measures would significantly strengthen the effectiveness of the regional regime and would be in the security interests of all states.

The other step that Israel could take early in the implementation phase would relate to its stock of unsafeguarded special fissionable material, principally plutonium. There are at least two possibilities. One would be the declaration and safeguarding of a portion of the fissile material stockpile. This would be analogous to what the US is doing with some fissile material that has been declared "excess" to military needs. This possibility will of course exist only if in fact Israel has such an "excess". Calculations by various experts suggest that this is probably the case, depending of course on how "needs" are defined, something no outsider can possibly have reliable information on.

A second possibility would be for Israel to declare that its stocks are no larger than an amount to be specified. Such a declaration would have to remain unverified until the very end of the denuclearization process, but any such statement should be taken at face value. The purpose of such a declaration would be to refute various assertions that Israel has accumulated such a large stockpile that it must have gone over from a strategy of use only as a last resort to a war-fighting doctrine based on hundreds of small tactical weapons. These assertions are troubling to Israel´s neighbors and do not serve Israel´s interests.

Neither of these possible actions with regard to stocks nor the possibility of dismantling the Dimona separation plant would have the slightest effect on Israel´s deterrent. The deterrent will remain unimpaired right up to the moment, presumably at the end of the denuclearization process, when Israel makes a full declaration of its fissile material stocks and allows them to be inspected. At that point and only at that point the world will know that Israel no longer has — if it ever did have — actual nuclear weapons.

At a time somewhere in this implementation phase, either before or after the declaration of its full stockpile, Israel should take one more major step in its denuclearization, a step which will do more than any other to move Israel out of the category of a "threshold state". This step is the dismantling of the Dimona reactor. Its dismantlement would be more difficult to reverse than the elimination of the separation plant. The latter could readily be replaced by Israel without outside assistance. Replacing the reactor would be much more difficult and Israel could hardly expect to obtain the sort of outside help and equipment without safeguards that it secured thirty or forty years ago from France or elsewhere.

Dismantling this reactor would therefore, at the least, put Israel at a substantial distance in time from being able to re-establish the production of unsafeguarded plutonium.

The dismantlement of this reactor is such a key step that Israel´s neighbors will certainly make an effort to have it specified in a treaty. For the same reason, Israel will want it as late in the process as possible, even though the reactor may be shut down at a much earlier point[170].

Once Israel has accepted full-scope safeguards, even without joining the Non-Proliferation Treaty, it will become eligible to secure modern power reactors on the world market. There are indications that Israel as well as several neighbors will be interested in doing so, perhaps within some sort of a regional organization EURATOM-style[171].

It may be asked whether the construction of new reactors would not simply nullify the effect of eliminating a reactor like that of Dimona. Fortunately, it is not so. A number of measures can be agreed in connection with new reactors that will make them quite proliferation-resistant, even though not totally proliferation-proof. The key constraints would be on the handling of spent fuel. Dimona is too small and too old to be worth the effort of integrating it into a new regional nuclear power industry. Once its contribution to Israel´s deterrent — and the deterrent itself — are recognized by Israel as no longer needed, the reactor should be allowed to go peacefully to its grave.

The foregoing discussion has focussed on nuclear capabilities and thus on Israel. The phase-down of Israeli nuclear capabilities will not go forward, however, without a parallel process in other countries of the region, especially these known to possess and even to have used chemical weapons. The process of eliminating weapons of mass destruction from the region cannot be precisely symmetrical but it will have to be balanced in both political and security terms.

We have not attempted in this study to put even approximate indicative time-frames on the various stages of the process. Some could obviously be quite brief — say a year or two. That would be the case for the period leading up to the entry-into-force and for the period immediately following. For the most important phases, we frankly would not know how to estimate their likely duration. Both are so dependent on political factors that they are quite unpredictable.

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[170] There are reports that the Dimona reactor has reached or even gone beyond its useful production time.

[171] See Annex on this subject by Dr M. Kibaroglu.

One could nevertheless hazard a general observation that if one looks first at the history of arms control since World War II and then at the history of the Middle East over that same half century, then it would not be unreasonable to guess that the process we have been describing from the time that representatives first sit down at the negotiation table to the time when one could confidently say that there are no nuclear weapons or other weapons of mass destruction anywhere in the region is very unlikely to be complete in as brief a period as one decade and is rather likely to require twice that time or even more. Many people, especially on the Arab side, will react to that comment with indignation and exasperation. If, however, one recalls how slowly things moved from President Sadat´s visit to Jerusalem[172] to the Oslo agreement[173], then perhaps taking a decade or two to eliminate weapons of mass destruction from this hyper-militarized region would really be doing pretty well. There are, after all, quite a few people who do not believe for a moment that it can ever be done — **ever**.

Mature Operation of the Treaty

The treaty process will reach maturity when all involved can assert confidently that weapons of mass destruction have been eliminated from the region. Two tasks will then remain. In the near and middle term, the treaty machinery, including whatever reviews and amendment procedures are agreed, will be responsible for ensuring that there is no reversal or "break-out" from what has been achieved. Over the longer term — and it may be very long indeed — one should hope that the underlying tensions and insecurities will be so thoroughly overcome that the treaty machinery can be disbanded and the treaty documents filed in the archives or in a museum display case. Skeptics might ponder the history of the Rush-Bagot agreement reached in 1817 between the USA and Great Britain (Canada) in order to demilitarize the common border[174]. Well before the end of the

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[172] The President of Egypt, Mr Anwar as-Sadat, visited Jerusalem on 19 November 1977 to address the Israeli Knesset.

[173] After 14 month of secret negotiations in Norway, Israeli and PLO representatives on 30 August 1993 reached the Oslo agreement on a "Declaration of Principles on Interim Self-Government Arrangements".

[174] For a description of the agreement and its implementation up to 1963, see Eayrs, J., *Arms Control and the Great Lakes*. Disarmament and Arms Control, Vol. 2 (No 4) 1964 pp 372-404. See also B. O´Neill, *Rush-Bagot and the Upkeep of Arms Treaties*, Arms Control Today, Vol. 21 No. 7, September 1991, pp 20-23.

century its provisions had become totally obsolete and the treaty itself wholly unnecessary.

The developments that will eventually make the zonal treaty superfluous lie outside its workings and the scope of this report, but in the nearer term when the treaty structure is in its mature phase it will be important for the responsible officials in the governments concerned to keep the long term in mind. They should, in particular, execute their duties in maintaining the treaty in a way that plays down tensions and contributes to amity.

This consideration will be especially relevant to the procedure for handling complaints and compliance. Violations should not be overlooked, but they should be managed with a minimum of confrontation and rhetoric and with publicity only as a last resort.

Some parties may engage in "testing" the verification machinery to find out how effective it really is, but serious attempts to evade it on a massive scale, like Iraq with the NPT, are extremely unlikely. If a party decides that after all it must have, let us say, nuclear weapons, it is much more likely to withdraw from the treaty than to follow the pattern of Iraq. This will be even more true once the situation in the former Soviet Union has developed into a more orderly structure and the chances of acquiring a few weapons, more or less ready-made, have further declined. It will then be more clear than it is today that going nuclear requires a rather massive, long-term effort that verification measures will have a good chance of catching and exposing.

There is an additional reason for expecting that once the treaty structure has survived its initial phases and reached maturity, it will encounter fewer challenges. During the same period when the zonal treaty structure is being implemented there will be a number of separate but reinforcing security arrangements spreading through the region. Regional, sub-regional, and bilateral agreements to control conventional weapons, prevent surprise attack, etc., are likely to come into effect. Improved diplomatic arrangements to deal with underlying problems should evolve. And most important of all, the region should be seeing the development of economic, cultural, and scientific networks of the type that over the past fifty years have knitted Western Europe into a fabric that makes war there truly unthinkable.

This sort of positive development is not inevitable. The Yugoslavs lived together in what looked like a single nation for forty-five years and then blew up in a frenzy of fear and hatred. And the Middle East is far from becoming a single nation. Yet the chances of avoiding further wars look fairly good, if well short of certainty.

There is moreover, a good chance that the existence of the treaty structure will forestall the possibility that if wars do occur, weapons of mass destruction would be resorted to. The years since Hiroshima and Nagasaki have built up a sort of taboo, which the nuclear powers understand, on any use of their nuclear weapons. The Biological Weapons Convention and the Chemical Weapons Convention have codified this global norm for those weapons as well. Once the treaty structure discussed in this report has reached maturity, there is a high probability that it will have contributed to the firm acceptance of these norms by all of the governments of the region. Verification is important, but the "internationalization" of this sort of norm among the leaders and publics of the area is the best barrier against the horrors that would ensue if nuclear, biological, or chemical weapons were in the future turned loose on the people of this — or any other — region of the world.