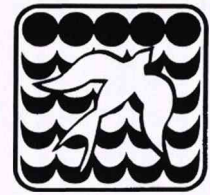




**UNITED NATIONS
ENVIRONMENT PROGRAMME**



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The Mediterranean Sea in the Twenty-first Century

They may have fought cruel wars throughout history, yet the Mediterranean people were always bound by a unique culture, common if diversified. The Mediterranean Sea has been called a “cradle of civilizations”. It has not been the only one, to be sure: Other seas have cradled other ancient civilizations; no less splendid than the Mediterranean but what emerged from the shores of this small sea is certainly remarkable.

The history of the great Mediterranean cultures stretches back ten thousand years. The oldest Egyptian sailing boat, with a square sail, goes back to 6000 BC. It spread from Egypt to the Mediterranean and to other parts of the world. Phoenician galleys circumnavigated the continent of Africa over 2500 years ago. The Phoenicians built their ships of cedar of Lebanon, and traded in silver, lead and iron, travelling to Malta, Sicily, Sardinia and Spain. They passed the Straits of Gibraltar and may even have reached Britain, establishing trading stations all along the way. Greek civilization gave rise, among its other superb achievements, to one of the oldest Law of the Sea codes, the Rhodian Law of the Sea. Roman civilization, including its amazing mastery in port and breakwater construction as well as map making, reached the Romans from Mesopotamia, Egypt and Greece, and flourished at the time of Julius Caesar and during the early Empire; Italian Renaissance and city culture; the Spanish-Portuguese age of exploration – these are just some of the landmarks of the evolution of Mediterranean culture.

Leonardo da Vinci, that universal genius, had some astonishing foresight of the Mediterranean ecological system:

Thus you make a model of the Mediterranean Sea. In this model let the rivers be commensurate with the size and outlines of the sea. Then by experimental observations of the streams of water, you will learn what they carry away of things covered and not covered by water. And you will let the waters of the Nile, Don, and Po and other rives of that size flow into the sea, which will have its outlet through the straits of Gibraltar...In this way you will soon see whence the water currents take objects and where they deposit them. (Leonardo da Vinci, c. 1500 AD)

The merchants of the Phoenicians, Sumerians, Egyptians, ancient Greeks and Romans sailed on the Mediterranean for centuries. The Mesopotamians reached its shore, and the people of Libya minted their first gold coins there. Europe, Asia and North Africa were traversed by numerous routes which led merchants and travellers to the Mediterranean.

“From Mauritania and Nubia, from the deserts of Arabia and the plateaus of Persia, from the Caucasus and the steppes to the north, from Central and even Northern Europe, century after century, bards and prophets, hosts of conquerors, merchants and adventurers have come to its shores and sailed through its mild waves, spreading the message of their faith, which was heard in every land, and carrying their ideas, arms, and wares, in peace and war. No other sea or ocean has been so central to human history. None has been for so many people and for such a long time, as has the Mediterranean, the symbol of hope and life.” (Aurelio Peccei, Introduction to Ritchie Calder, *The Pollution of the Mediterranean*, Pacem in Maribus, 1971, Bern: Herbert Lang & Co., 1992.)

Mediterranean science flourished at the University of Toledo and Cordova, as described by the great late scholar Abdus Salam, from 750 AD to 1100 AD, where Jewish, Arabic, Turkish, Afghan and Persian cultures mingled. “The schools of Toledo and Salerno mark the beginning of creation of Sciences in the West. At these schools a candle was lighted from a candle already burning brightly in the lands of Islam.” (*Ideals and Realities, Selected Essays of Abdus Salam*, Singapore: World Scientific Publishing Co., Pte Ltd, 1984.)

It is on this basis that modern civilization evolved, with the “North” gradually overtaking, colonizing the “South” and distorting its economy, populations doubling and doubling again, urban sprawl, coastal industrialization, until the pressure on the fragile sea became unsustainable.

The Mediterranean Sea is bordered by 21 coastal and island states (Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Morocco, Slovenia, Spain, Syria, Tunisia, Turkey, Yugoslavia) and one autonomous entity (Gaza-Cis-Jordan Entity). The total population of these countries is about 360 million, its gross domestic product is of the order of US\$2.5 billion.

Some of the major world ports have developed on the shores of the Mediterranean: Marseilles, Genoa, Augusta, Taranto, Venice, Sidra, Arzew, Porto Foci, Zetina, Barcelona, Elevisis, Rijeka, Cartagena, Alexandria, Salonika, and Piraeus. The 17 largest Mediterranean ports account for approximately 442 million tons of cargo per year. When the cargo of smaller ports is added, the figure rises to over 700 million tons a year.

Coastal populations constitute about 50 percent of the total population of the 21 coastal states. Sixty-five percent of the coastline have been urbanized, and human pressure on the coasts by residents and tourists is approaching 12,000 persons per km of coastline. Between 1980 and 2000 a further increase of 46 percent is anticipated. The following table, compiled by Adalberto Vallega from Mediterranean Action Plan (MAP) publications and A. Pavasovic, 1996, contains some additional details.

The Mediterranean: Main Data

Features	Unit	Data
Sea surface	million km ² /million sq. m.	2.5/0.965
East-west extent	miles/km	2,500/4,000
North-south extent	miles/km	500/800
Average water depth	km/fathoms	1.5/1,640
Water depth, Strait of Gibraltar	metres/feet	97/320
Water depth, Bosphorus	metres/feet	70/200
Coastline, total length	thousand km	45.0
Coastline, islands	thousand km	17.7
Mediterranean coastal region, surface	million km ² /million sq. m.	1.5/0.579
Countries	number	21
Autonomous territory	number	1 (Gaza-Cis-Jordan)
Urbanisation	% of coastline	65
Coastal population, total, 1980	million inhabitants	84.5
Coastal population, total, 2000	million inhabitants	123.7
Coastal population, total, 1980/2000 increase	%	46
Population pressure, 2000	thousands per km	5,700 to 6,600
Population pressure, 2025	thousands per km	11,000 to 12,000
Power plants: existing/planned/total	number	112/43/155
Power plants: existing/planned/total northern side	number	60/4/64
Power plants: existing/planned/total southern side	number	52/39/91

The impacts of this sort of development on the ecosystem of a semi-enclosed sea have been near-catastrophic. In considering the data, one should also keep in mind the peculiar hydrological conditions of the Mediterranean. This inland sea is linked to the world ocean through two small openings, the Strait of Gibraltar and the Bosphorus and it takes 80 years for its enclosed waters to be renewed. A pollutant, once in these waters, will not leave it for that length of time.

***Types and Sources of Mediterranean Pollution
(In percent)***

Region	Organic matter	Nutrients ^a	Specific organics ^b	Pesticides	Metals
1	40.7	43.1	21.8	30.0	35.8
2	28.1	31.6	19.8	22.3	38.0
3	10.8	6.8	27.5	21.9	6.4
4	3.8	4.7	9.0	10.1	5.2
5	<u>16.6</u>	<u>13.0</u>	<u>19.9</u>	<u>15.7</u>	<u>14.4</u>
Total	100.0	100.0	98.0	100.0	99.8

1 = Spain, France, Italy (northwestern basin and Tyrrhenian Sea).

2 = Italy, Yugoslavia, Greece (Adriatic and Ionian Seas).

3 = Morocco, Algeria, Tunisia, Libya (southern coast).

4 = Lebanon, Israel, Egypt, Libya (south Levantine Sea).

5 = Greece, Turkey, Cyprus, Syria, Lebanon (central and Aegean Sea).

^a Nutrients are phosphorus and nitrogen.

^b Specific organics are detergents, phenols, and mineral oils.

Source: Peter M. Haas, *Saving the Mediterranean: The Politics of International Environmental Cooperation*. New York: Columbia University Press, 1990.

Another peculiarity of the hydrographic condition of the Mediterranean is that the most heavily polluted area – near the Northern shores of the Adriatic, and Tyrenian seas, with the estuaries of the major rivers of the region, the major ports and industries, are also the most crucial for the circulation of the whole system. They have been described as the “lungs” of the Mediterranean.

“The Mediterranean has three “lungs”: Provençal Basin, Upper Adriatic, and the Aegean. This respiratory system is critical to the whole Mediterranean.”

Richie Calder wrote in his foresightful book on Mediterranean Pollution.

It did not come quite as a surprise, hence, that beaches had to be closed, fish stocks dwindled, and what was left became unsafe to eat, trees, behind the shore line, were blighted by foul sea winds, and there were outbreaks of hepatitis, and even cholera. Famous tourist resorts were abandoned, with serious financial implications: Clearly something had to be done about it.

Mediterranean Cooperation

Regional cooperation in marine scientific research and in fisheries science goes back a long way in the Mediterranean. The General Fisheries Council for the Mediterranean was established by FAO in 1954; the International Commission for the Scientific Exploration of the Mediterranean (ICSEM) predates World War I. It has been active ever since 1910. The long and successful history of these organisations may have been in the back of the minds of the drafters of the Law of the Sea Convention, when they established (Article 123) that States bordering enclosed and semi-enclosed seas “shall endeavour, directly or through an appropriate regional organisation:

- ◆ to co-ordinate the management, conservation, exploration and exploitation of the living resources of the sea; and
- ◆ to co-ordinate their scientific research policies, and undertake, where appropriate, joint programmes of scientific research in the area.

Earliest efforts to do something about the protection of the Mediterranean environment go back to the early ‘seventies, but early studies were either sectorally or geographically limited. They dealt with one or two specific pollutants (oil, pesticides, bacteria, etc.) or with subregional areas. And although FAO, IOC, IMCO were involved, in general the availability of research facilities and the state of knowledge was still quite inadequate. One of the first comprehensive and generally accessible books on *The Pollution of the Mediterranean* (1971) was written by the late Lord Richie Calder. It resulted from the first research project of the newly established International Ocean Institute in Malta. Thanks to a grant from the Ford Foundation, the International Ocean Institute followed up with an international seminar in Split, Yugoslavia, on *Environment and Development in the Mediterranean* (1972) – perhaps the first attempt to integrate the environmental concerns of the Northern shores of the Mediterranean with the economic development concerns of the Southern shores into what was later to be called “sustainable development” and to propose comprehensive regional mechanisms for resource and environment management. UNEP has always been generous enough to recognize this effort as one of the sources of what was to become the Mediterranean Action Plan (MAP, 1975) and its legal framework, the Barcelona Convention (1976).

At the intergovernmental level, however, UNEP’s achievement was largely based on FAO’s guidelines which could serve as a basis for the drafting of a Framework Convention on the Protection of the Marine Environment Against Pollution in the Mediterranean (1973-74).

UNEP’s Regional Seas Programme, initiated, under the leadership of the Yugoslav scientist Stjepan Keckes, with the Mediterranean Action Plan, the Barcelona Convention and its Protocols, is one of the success stories of the United Nations. The Mediterranean model, with its methodology was

transferred to eleven other regional seas, involving the participation of over 120 coastal and island States. It gave a unique impetus to marine scientific research, particularly among the developing countries of the southern and south-eastern shores. Keckes, a person not only of science but also of vision, created and encouraged what has been called an “epistemic community”, that is, an international community of scientists, committed to a common programme which, due to their prestige and influence, they were able to push within the politics of their own countries. This lead role of science and scientists in the nascent regional seas programme may, again, have been in the back of the minds of those who drafted the global Law of the Sea Convention, where scientific research is given an unprecedented importance. About one hundred of the 310 Articles of that great Convention – almost one third – deal in one way or another with science and science based technology and its promotion, especially in developing countries, without which, in fact, ocean and coastal management would be impossible. Cooperation on the development and transfer of the marine sciences and technologies, at the national, regional, and global level is indeed a *mandate* of the Convention. National Constitutions, in the next century, should learn from this experience. It should be kept in mind, however, that there still is a tremendous imbalance between the “North” and the “South” with regard to the number of scientists and the facilities at their disposal. An over-emphasis on science in ocean governance, without correctives, thus might reinforce the domination of the North over the South.

Events moved swiftly and efficiently. A Coordinating Unit was established in Athens, Greece. Its activities were funded by UNEP. Research and monitoring programmes were adopted; core issues were identified; case studies conducted; Regional Action Centres (RACs) were established; Protocols entered into force. The following tables give a succinct overview of these developments.

Chronology of Major Mediterranean Action Plan Dates

June 1972	United Nations Conference on the Human Environment (Stockholm)
September 1974	IOC/GFCM/ICSEM international Workshop on Marine Pollution in the Mediterranean (Monte Carlo)
February 1975	Intergovernmental Meeting on the Protection of the Mediterranean (Barcelona)
February 1976	Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region on the Protection of the Mediterranean Sea (Barcelona)
February 1977	Intergovernmental Meeting of Mediterranean Coastal States on the Blue Plan (Split)
September 1977	Meeting of Experts on Pollutants from Land-Based Sources (Geneva)
October 1977	Second Intergovernmental Consultation Concerning a Draft Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources (Venice)

January 1978	Intergovernmental Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Monaco)
February 1979	Intergovernmental Review Meeting of Mediterranean Coastal States on the Mediterranean Action Plan and First Meeting of Contracting Parties to the Convention for the Protection of the Mediterranean Sea Against Pollution and Its Related Protocols (Geneva)
June 1979	Meeting of Technical and Legal Experts on the Preliminary Draft protocol for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources (Geneva)
October 1979	Second Meeting of Blue Plan National Focal Points (Cannes)
February 1980	Intergovernmental Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Barcelona)
May 1980	Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources (Athens)
March 1981	Second Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea Against Pollution and Its Related Protocols (Cannes)
March 1982	Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region for the Protocol Concerning Mediterranean Specially Protected Areas (Geneva)
March 1983	Third Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea Against Pollution and Its Related Protocols (Dubrovnik)
April 1984	Extraordinary Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea Against Pollution and Its Related Protocols (Athens)
September 1985	Fourth Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea Against Pollution and Its Related Protocols (Genoa)
September 1987	Fifth Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea Against Pollution and Its Related Protocols (Athens)
October 1988	Meeting of the Bureau of the Contracting Parties to the Barcelona Convention (Athens)

October 1989	Sixth Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea Against Pollution and Its Related Protocols (Athens)
January 1989	Meeting of the Bureau of the Contracting Parties to the Barcelona Convention (Cairo)
February 1990	Meeting of the Bureau of the Contracting Parties to the Barcelona Convention (Brussels)
October 1991	Seventh Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea Against Pollution and Its Related Protocols (Cairo)
November 1992	Meeting of the Bureau of the Contracting Parties to the Barcelona Convention (Cairo)
October 1993	Eighth Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea Against Pollution and Its Related Protocols (Antalya)
November 1994	Meeting of the Bureau of the Contracting Parties to the Barcelona Convention (Tunis)
January 1995	Meeting of the Bureau of the Contracting Parties to the Barcelona Convention (Paris)
July 1996	Extraordinary Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea Against Pollution and Its Related Protocols (Montpellier)
December 1996	First Meeting of the Mediterranean Commission on Sustainable Development (Rabat)
May 1997	Second Meeting of the Mediterranean Commission on Sustainable Development (Palma de Majorca)
October 1997	Third Meeting of the Mediterranean Commission on Sustainable Development (Sophia Antipolis)
November 1997	Tenth Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea Against Pollution and Its Related Protocols (Tunis)
March 1998	Meeting of the Bureau of the Contracting Parties to the Barcelona Convention (Tunis)
October 1998	Fourth Meeting of the Mediterranean Commission on Sustainable Development (Monaco)

Source: Adapted from Peter M. Haas, *Saving the Mediterranean* and UNEP,

***The Barcelona Convention System:
Chronological view of its development***

Convention and Protocols	Adoption & Place	Status Development (*)
<i>Convention for the Protection of the Mediterranean Sea Against Pollution</i> Responsible: The MAP Co-ordination Unit	Barcelona, Spain	a) 1976 b) 1978 c) 21
<i>Dumping Protocol</i> Protocol for the Prevention of pollution of the Mediterranean Sea by Dumping from Ships and Aircraft Responsible: MAP Co-ordination Unit, Athens	Barcelona, Spain	a) 1976 b) 1978 c) 21
<i>Emergency Protocol</i> Protocol concerning Co-operation in Combatting Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in cases of Emergency Responsible: REMPEC, Malta	Barcelona, Spain	a) 1976 b) 1978 c) 21
<i>Land-based protocol</i> Protocol for the Protection of the Mediterranean Sea against pollution from Land-Based Sources Responsible: MED POL, Athens	Athens, Greece	a) 1980 b) 1983 c) 21
<i>SPA Protocol</i> Protocol concerning Mediterranean Specially Protected Areas and Biodiversity in the Mediterranean** Responsible: SPA/RAC, Tunis	Geneva, Switzerland	a) 1982 b) 1986 c) 21
<i>Offshore Protocol</i> Protocol for the Protection of the Mediterranean Sea against Pollution resulting from Exploration and Exploitation of the Sea-bed and its Subsoil Responsible: MED POL, Athens	Madrid, Spain	a) 1994 b) not yet c) –
<i>Convention on the Protection of the Marine Environment and the Coastal Region of the Mediterranean Sea</i> Resulting from the amendment of the 1976 Convention	Barcelona, Spain	a) 1995 b) not yet c) –
<i>Hazardous waste protocol</i> Protocol on the Prevention of Pollution of the Mediterranean Sea resulting from the Transboundary Movements of Hazardous Wastes and their Disposal Responsible: not yet decided	Izmir, Turkey	a) 1996 b) not yet c) –

* Codes: a) approval; b) entering into force; c) number of ratification (re: 1996).

** This protocol is resulting from the amendment of the protocol on Specially Protected Areas by the Ninth Ordinary Meeting of the Barcelona Convention (1995).

Adapted from A. Pavasovic, 1996. Source: A. Vallega, International Conference: Education and Training on Integrated Coastal Area Management, The Mediterranean Prospect, 1998.

The *MED POL Programme* on pollution monitoring and control, managed from Athens, has gone through various phases and has become a tool for achieving sustainable development, to assist in the effective implementation of the protocols on land-based sources of pollution, on dumping, and on hazardous waste, and to build up capacities of developing countries in these areas. The cost of “cleaning up the Mediterranean” was estimated as US\$ 5 billion over a period of 10 years.

The *Blue Plan*, a series of long-term projections and scenarios of economic/social/environmental trends for the Mediterranean and one of the major achievements of the Regional Seas Programme, is coordinated by the Regional Activity Centre (RAC) in Sophia Antipolis in France, and is presently working on a project, among others, on *indicators of sustainable development in the Mediterranean*.

The Centre for Priority Action Programmes, in Split, Croatia, has been commissioned by the World Bank to make an assessment of coastal zone management activities in the Mediterranean. A final draft report on coastal zone management initiatives has been prepared.

The Centre for Specially Protected Areas is located in Tunis and is working on a marine turtle project, in cooperation with the Croatian Natural History Museum, on a study on monk seals along the Cypriot coastline, and on the conservation of Cetaceans in the eastern part of the Mediterranean.

The Centre for Cleaner Production, in Barcelona, Spain, is one of the most recent additions to the system. It is to advance the development of clean technologies. It publishes fact sheets, called MEDCLEANER, illustrating success stories within the Mediterranean region in order to show real examples of cleaner production achieved by different companies.

The Centre for Environment Remote Sensing in Palermo, Italy, is cooperating with the European Space Agency (ESA) to extend the use of Satellites for the detection of oil spills, already common practice in Northern Europe, to the Mediterranean region.

And finally, there is the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), established in Malta as a cooperative venture between UNEP and IMO, which is now working in the framework of a new three-year project which the European Union approved in December 1996.

Renovation: Mediterranean States Pioneering Again

This, undoubtedly, is a remarkable slate of activities – partly reinforced, partly overtaken by events as they have unfolded between the United Nations Conference on the Human Environment (UNCHE, Stockholm, 1972) and the United Nations Conference on Environment and Development (UNCED, Rio de Janeiro, 1992).

The changes which the world has gone through during these two decades are dramatic. The end of

the Cold War had its effects on the region. The Mediterranean and the Black-Sea ecosystems are interacting in various ways, but participation of the Black-Sea riparian States in Mediterranean affairs was avoided during the Cold War. It became possible in the 'nineties and is likely to grow in the next century. An Action Plan for the Black Sea has been elaborated with the assistance of the Global Environment Facility (World Bank, United Nations Environment Programme, United Nations Development Programme). An international Agreement on the Conservation of Cetaceans of the Black Sea, the Mediterranean Sea and Contiguous Atlantic Area is in place. While the Black Sea and the Mediterranean programmes are still separate, they do communicate. At the level of Nongovernmental Organisations, especially through MEDCOAST, the Mediterranean and the Black Sea are dealt with as one single system. The MEDCOAST Institute is located at the Middle East Technical University in Ankara, Turkey.

“Globalization”, the triumph of a rather ruthless “market system” tending to make the rich richer and the poor poorer within and between countries, intensified the flow of refugees and migrant workers from the poor countries of the South and East to the Northern shores of the Mediterranean. The flux was intensified by refugees from war-torn Yugoslavia.

The maturation of the European Union and its Mediterranean policy, motivated by economic as well as by security considerations, has opened new and generous sources of financing for programmes for sustainable development in the Mediterranean and Black Sea. A Euro-Mediterranean Partnership (MEDA) was launched at the Conference of Barcelona in November 1995. Twelve non-European, Mediterranean countries (of which 10 are already members of the Mediterranean Action Plan) are the beneficiaries of this Partnership. The purpose of this cooperation with the European Union (EU) is the elaboration of three-year projects, to be devoted primarily to the enhancement of participation of civil society in the planning and implementation of development measures, to increased cooperation in fisheries management and the sustainable exploitation of marine resources, and to increased cooperation in the conservation of the environment. EU's financial contribution for the implementation of this programme for the period 1995-1999 is ECU 3,424.5 million.

This, in addition to the Mediterranean Environmental Technical Assistance Programme (METAP) which was launched in 1990 by the World Bank and the European Investment Bank in order to assist national efforts to protect the environment and encourage regional cooperation. METAP's budget for the period 1990-1996 was US\$30 million which financed around one hundred activities. In accordance with the recommendations of the extraordinary meeting of the contracting parties of the Barcelona Convention in Montpellier, MAP, MEDA and METAP will cooperate to facilitate the implementation of the Protocol on land-based pollution, the strengthening of the capacities of developing countries and the development of integrated management plans for coastal zones. Pollution “hot spots” will be among the first targets.

Clearly, these new partnerships are opening new horizons for Mediterranean cooperation and development. The strong European input should also strengthen respect of democratic principles and human rights and fundamental freedoms, as stressed by the European Parliament in Strasbourg while the project was under discussion. This, in turn, should enhance peace and security in the Mediterranean.

The most direct impulse for change, however, came from a changing perception of the problems of ocean space and its institutional implications.

In 1972, leaders and experts were still thinking in terms of solving problems on a *sectoral basis*, one by one. People were becoming increasingly aware of the problem of *pollution*, but they considered it as a problem that could be dealt with on its own terms, leaving the rest of the world the way it was. The result of the Stockholm Conference, at the national level, was the addition of a new sector – the Department or Ministry of the Environment – to the many other “sectors” constituting the national government. At the regional level, it established the Regional Seas Programme, for the sectoral purpose of controlling and abating pollution; and at the global level, it created the United Nations Environment Programme (UNEP), with a mandate limited to the protection of the environment and the control and abatement of pollution. It is interesting to note, incidentally, that the Charter of the United Nations contains no reference whatsoever to the problem of the environment, and that the establishment of UNEP, in a way, was *ultra vires*, beyond the explicit powers of the United Nations General Assembly. It was, however, a vivid demonstration of how a living political body can adjust to changing circumstances, even if there is, to start with, no legal basis for the needed innovation.

The United Nations Convention on the Law of the Sea, which matured in the ‘seventies, was adopted by UNCLOS III in 1982 and entered into force in 1994, is the first global historic document that integrates environment and development concerns, based on the recognition, enshrined in the Convention’s Preamble, that *the problems of ocean space are closely interrelated and need to be considered as a whole*. Part XII of that Convention contains what still today is the only existing *universal and comprehensive, binding and enforceable, international environmental law, covering pollution from all sources, whether oceanic, atmospheric or land-based, and all seas and oceans on our blue planet*. It provided the legal framework, the dispute settlement system and the enforcement mechanisms for all that was to come later.

This *holistic concept* was further elaborated in the Report of the World Commission on Environment and Development, the Brundtland Report *Our Common Future* (1987). This remarkable document demonstrated with facts and figures that environment and development concerns not only are *not conflicting*, but that neither one of them can stand alone. If, from a *sectoral perspective*, the cost of cleaning up pollution is five billion dollars, a *holistic perspective*, considering pollution control and economic development as a whole, is capable of producing more with less; because, basically, pollution is waste, it’s valuable elements ending up in the wrong place. The Chinese have a saying, based on ancient Taoism, that three curses, namely solid waste, liquid waste, and gaseous waste, can be transformed into three blessings through recycling and re-using. The findings of the Brundtland Report have been further elaborated and corroborated by Hans Ulrich V. Weizsaecker’s Report to the Club of Rome, *Factor Four* (1994), demonstrating through a series of case studies that, by reducing waste through “clean technologies”, half the material and energy input can produce twice the amount of output, thus increasing productivity by a “factor of four”.

The Wuppertal Institute for Climate, Environment and Energy in Germany, has gone even further, and come up with a “Factor Ten”, by integrating projections of socio-economic change with those of technological change.

The conclusions of the Brundtland Report became the basis of UNCED (Rio, 1992) and the source of the broad, deep and sweeping stream of Conferences, Conventions, Agreements and Action Plans, all of which have an important marine dimension. The new emphasis on *sustainable development* and *the eradication of poverty*; on *integrated coastal management*, including the *prevention of pollution from land-based activities* as well as *integrated water management* as its basic components, inevitably had a profound impact on regional seas programmes. UNCED and the post-UNCED process thus mark a “critical” or “crucial” point in the history of UNEP. In fact, it offers the occasion for a reconceptualization, a revitalization of UNEP and its Regional Seas Programme, the success story of a quarter of a century ago.

Two extremely important developments, already in course, should be noted.

The first is Mediterranean: the response of the Mediterranean countries to the post-UNCED challenge, through the revision of the Mediterranean Action Plan, the adoption of a Mediterranean *Agenda 21*, and the revision and updating of the Barcelona Convention. This development is bound to influence, one way or another, all Regional Seas Programmes in the next century.

The second development is a global initiative: UNEP’s decision to accept the responsibility for the implementation of the Global Programme of Action on the Prevention of Pollution from Land-based Activities. This global decision will have an important impact on all regional seas programmes, including the Mediterranean.

The Mediterranean Commission on Sustainable Development

The revision of the Barcelona Convention, around twenty years after its adoption, together with the renovation of the Mediterranean Action Plan and the adoption of an *Agenda 21* for the Mediterranean, was a timely response to the changed, and still rapidly changing, situation. Once more, like twenty years ago, it put the Mediterranean countries into a position of leadership with regard to regional cooperation and development.

The revised Convention attempts to incorporate the new principles developed by UNCED and the post-UNCED process, such as “the precautionary principle,” the “polluter pays” principle, the principle of “common but differentiated responsibilities” or the principle of following “best available practice”. In a number of cases the new language is taken from the more recent Helsinki Convention.

While all these changes are useful, the most important institutional innovation was incorporated in the Mediterranean Action Plan, although it obviously will have effects not only on the Action Plan

but on the Convention as well. And that is the establishment of the Mediterranean Commission on Environment and Development.

The establishment of Regional Commissions on Sustainable Development is desirable for a number of reasons. The United Nations Commission on Sustainable Development is very limited in its means, while its tasks and responsibilities for the implementation of *Agenda 21* are very comprehensive. If it could decentralise its operations, relying on increased activities at the regional level. This would enhance its efficiency. Regional Commissions with appropriate linkages to the United Nations Commission, would ensure *coherence between regional and global policies as well as between regional and national sustainable development policies*.

The Mediterranean countries, parties to the Barcelona Convention, have *taken the first bold step in establishing such a Commission*.

This Mediterranean Commission on Sustainable Development (MCSD) was established in 1995, in accordance with the recommendation of the Tunis Ministerial Conference, held in November 1994. The composition of this Commission is unusual, reflecting new trends that will take us into the next century. There were to be 36 members. Twenty-one of these represent the Contracting Parties to the Barcelona Convention. The remaining 15 were to represent local authorities, socio-economic actors and nongovernmental organisations working in the fields of environment and sustainable development.

Each Contracting Party to the Barcelona Convention shall be represented by one high-level representative (total 21), who may be accompanied by such alternates and advisers as may be required, in order to ensure interdisciplinary participation of relevant ministerial bodies of the Contracting Parties (e.g., ministries of environment, tourism, economy, development, industry, finance, energy, etc...).

Each of the three categories mentioned in section C.5 of the text of the Terms of Reference, i.e., local authorities, socio-economic actors and nongovernmental organisations, shall be represented by five representatives (total 15) and an equal number of alternates, to be selected by the meeting of the Contracting Parties.

*All 36 members shall participate in the Commission on an equal footing.*¹

The first of these three quoted paragraphs is particularly interesting because it departs from the UNEP tradition of having States represented by their Ministers for the Environment. The representative has to be “high-level” but he may be any “high-level” Minister. The paragraph stresses the need for interdisciplinary participation of relevant ministerial bodies of the Contracting Parties. The second paragraph is of special interest because it provides the necessary linkage to local “grass-roots” constituencies, who will make the nominations. The third paragraph is perhaps the most important

¹UNEP(OCA)/MED IG>8/CRP/9, paragraphs (a), 1-3

one. It treats governments and nongovernmental entities as equals. It recognizes the ongoing changing relationship between States and “civil society.” It reflects the ongoing transformation of the concept of sovereignty.

The MCSD initiated its activities during its first meeting, in Rabat, on 16-18 December, 1996, with 30 members, representing 17 Mediterranean governments and the EC, three local authorities, three socio-economic actors and five regional NGOs.

During that meeting, the MCSD decided to appoint task managers and constitute thematic working groups concentrating on a limited number of subjects over a specific period of time. Two of these groups were given priorities: the group working on sustainable management of coastal zones and the group on management of water demand. The first is managed by Morocco and the MEDCITIES network, the second, by Morocco and Tunisia. Tunisia had hosted the 1994 Ministerial meeting, which took the decision for the establishment of the MCSD and also adopted the *Agenda Med 21*, adapting the important themes of the Rio *Agenda 21* to the Mediterranean.

After one year, Morocco and Tunisia proposed the first strategic and policy orientations. These were adopted by the tenth meeting of the Contracting Parties.

Other groups will deal with the no less urgent and great challenges posed to sustainable development by tourism, free trade and industry.

The establishment of the Mediterranean Commission on Sustainable Development is a bold step forward. Its structure and functions should be carefully studied by the Contracting Parties to all other Regional Seas Programmes.

The Implementation of the Global Programme of Action on the Prevention of Pollution from Land-based Activities

The Draft Proposal submitted by the United Nations Environment Programme on Institutional Arrangements for Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (28 October 1996) is another essential element in the transition process. Although the official scope of this proposal is still strictly “sectoral” (i.e., land-based sources of pollution), the institutional framework proposed is comprehensive, including also “regional institutions concerned with the marine environment, other regional institutions such as regional development banks, the private sector and nongovernmental organisations” whose interests must also be reflected on the agenda which must necessarily be broadened. The Proposal, in fact, repeatedly states that it should serve to “revitalize the UNEP Regional Seas Programme, in particular by facilitating appropriate activities of the regional programmes”.

The Proposal states:

The collaboration of UNEP and its partner agencies as well as relevant global and regional programmes, structures and agreements, will be essential for successful implementation of the Global Programme of Action. *Such collaboration will ensure that implementation of the Global Programme of Action will be approached in a wider context, encompassing, inter alia, concern for human health (WHO), productivity of coastal areas (FAO), loss of biodiversity (CBI and others), radiation protection and marine pollution monitoring (IAEA and others), retarded development and poverty (UNDP), shifting demographic patterns (UNCHS/Habitat), declining food security (FAO, WFP), global environmental change (IGBP of ICSU), nature conservation (WWF, IUCN).* (Italics added.)

The proposal also envisages the establishment of an inter-organisational steering group which will be chaired by UNEP and will meet on a regular basis.

The proposal foresaw a series of regional workshops: to be held in 1997 and 1998, in cooperation with all the above-mentioned “partner organisations”, to develop regional strategies for the implementation of the Washington Global Programme of Action.

Some of these workshops have been completed in the meantime. Others have been postponed. However, the implementation of the Global Programme of Action is an ongoing process, at all levels, including the regional level.

The Athens Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources

Among all Regional Seas, the Mediterranean is probably the most advanced with regard to the prevention of pollution from land-based activities. Considering that probably about 85 percent of marine pollution is due to land-based activities, this protocol evidently constitutes the most important part of the Action Programme. It also was the most difficult part to put into place, pitting the “North” against the “South”. While the “North” – responsible for by far the largest part of pollution – stressed the need for emission reductions, the “South” necessarily gives priority to economic development and tends to view the imposition of restriction as an unfair impediment to economic growth. Thus the negotiations were tedious and took three years. The Protocol finally was signed in 1980 and entered into force in 1983. It incorporated all the standards of the European Community. The most important concession to the South was that the reduction of the so-called “gray” substances listed in Annex 2 was to be based, not on emission measurements, but on the capacity of the environment to absorb pollution.

The implementation of the Athens Protocol is, at the same time, the implementation of the Washington Global Programme of Action, although some harmonization of the two instruments may be called for. The kind of “workshop” foreseen in UNEP’s strategy for the implementation of the Global Programme of Action, however, would be most useful in the Mediterranean in any case. As a matter of fact, this sort of meeting, including not only the contracting parties to the Barcelona

Convention but all of UNEP's intergovernmental and nongovernmental "partner institutions" as well, should be "institutionalized", that is, it should become a regular event, to take place every second year, to deal, not only with the land-based sources of pollution, but with the whole range of ocean and coastal management related issues arising from the implementation of *all* post-UNCED Conventions, Agreements, and Programmes.

The regional response to these new challenges cannot be piecemeal, Convention by Convention, Programme by Programme. It must be conceived in an integrated and systematic way, avoiding duplication of efforts and conflicting arrangements.

An upgrading of regional cooperation and development is of crucial importance for the implementation of *all* the Conventions, Agreements, and Action Programmes emanating from the Rio Conference on Environment and Development (1992). Whether one looks at *Agenda 21* or the Biodiversity or the Climate Convention; the Action Programme of the Barbados SIDS Conference, or the recommendations of the Nordwijk Conference on Integrated Coastal Management; the Agreement on the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks in the High Seas or the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities – they all build on regional cooperation as an essential element in the implementation of their programmes.

The Next Steps

The possibilities of further developing cooperation, development and the protection of the environment in the Mediterranean are promising – depending, of course, on political will and the strengthening of peace and security. The legal and institutional infrastructure, basically, is in place. One can build on it. The financial means are available. Projects and proposals – if somewhat piecemeal – abound. Integrated water management would seem to deserve a high priority in the Mediterranean, especially on the eastern and southern shores where water scarcity and user conflicts may pose serious threats to regional security. Research and development on desalination technologies would seem to be a regional concern. At a recent workshop in Ljubljana, Slovenia, one participant suggested the "depetrolization" of the Mediterranean through the building of a circular Mediterranean pipeline, to be managed by an international corporation in which all the countries concerned would hold shares. Improvement of energy efficiency, especially on the southern and Eastern shores would be another priority. Tourism is today the world's largest multinational enterprise, exploiting at once the environment, the poor countries, and the tourists themselves, herded into golden ghettos beleaguered by hostile, displaced and unemployed poor. The containment of tourism would be an essential requirement of "integrated coastal management" and "sustainable development", especially on small islands. An equally pressing need is job creation and improvements of living standards in poor coastal villages and the halting of urban sprawl of coastal megacities. These are universal problems, of which the Mediterranean coastal states and islands are not exempt.

We shall conclude these pages with the consideration of two "systemic" but concrete suggestions apt to enhance the implementation of the whole range of post-UNCLOS/UNCED Conventions, Agreements and Programmes.

Technology Cooperation, Development and Transfer

The Mediterranean region is host today to more international institutions for the advancement of science and technology than any other regional sea. Going around, one might mention, above all, the following:

Egypt has the headquarters of CEDARE, which was launched in 1992 as an international not-for-profit organisation working towards sustainable development for the Arab Region and Mediterranean European Countries. The main sponsors of CEDARE are the Arab Fund for Economic and Social Development, the Government of Egypt, and the United Nations Development Programme. CEDARE has focal points throughout the Arab region and the Mediterranean countries of Europe. Its "mission" includes the mandate "to identify and propose approaches and technologies that will ensure optimum utilization of national resources. While programmes are focussing on fresh-water resources and land-resources, technologies obviously overlap with those required for the optimum utilization of marine resources. The CEDARE network certainly must be included in any comprehensive Mediterranean technology cooperation system.

The Government of Greece, in cooperation with UNIDO, has established a Mediterranean Centre for Marine Industrial Technology. The immediate objective of the Centre is to serve as a business development centre and clearing house for marine industry in the Mediterranean region. The mission of the Centre is to stimulate business activities in the marine industrial sector by facilitating cooperation at the enterprise level among the countries in the region, with an emphasis on cooperation between developed and developing countries with a view to strengthening the capabilities of developing countries in marine industrial technology. The Centre in Greece is seen very much as coordinating centre with focal points in the other Mediterranean countries.

In 1986, the Greek Ministry of Industry, Energy and Technology established the Marine Technology Development Company (MARTEDEC), specialized in particular in the Hellenic coastal shipping system, winds, waves and currents in the Hellenic seas. It works in computer aided ship design, development of wave simulation and wave refraction models, etc... Presently MARTEDEC is involved in a number of projects financed by the European Union.

Italy is host to quite a conglomeration of institutions devoted to scientific/technology cooperation, especially in the Trieste/Venice region. There is, first of all, the Third World Academy of Science, founded by the late great Pakistani physicist Abdus Salam. UNIDO has established an International Centre for Science and High Technology, also in Trieste, with a component on coastal zone management with a strong focus on the Mediterranean.

As previously mentioned, the Centre for Cleaner Production, in Barcelona, Spain, is one of the most recent additions to the system, set up to advance the development of clean technologies. Another Centre for Cleaner Production, within the context of a global network of such Centres established by UNIDO, is in Tunis. Tunis also hosts an International Centre for Environmental Technologies (CITET), which is now about to establish a Cleaner Production unit. Cleaner Production Centres

conduct “in-plant assessments”, conduct training programmes and awareness-raising seminars, promote information dissemination, and conduct policy dialogues on industrial modernization projects.

High technology development obviously abounds in France, from Sophia Antipolis to Bordeaux to Paris and up. France is also the main originator of the EUREKA/EUROMAR system which we want to propose as a possible model for a Mediterranean Marine Technology Cooperation.

The Law of the Sea Convention as well as each one of the post-UNCED Conventions, Agreements and Programmes recognize the fundamental importance of technology cooperation and technology sharing if poor countries are to fulfil their responsibilities and enjoy their rights under these new instruments. This recognition is progressive, gaining strength. The provisions in the new Conventions impose greater obligations on the industrialized States than the Law of the Sea Convention.

The weakness of the system lies in the fact that *each one* of the Conventions, Agreements and Programmes has *its own* provisions for technology cooperation and sharing as each one attempts to create its own regime, at national, regional and global levels.

This obviously is a colossal waste, implying, more than a duplication, a *multiplication of efforts* – especially considering that the technologies involved are largely the same.

If now we see the emergence of *comprehensive regimes*, responsible for the implementation of *all* the new instruments at the regional level, it becomes logical to think in terms of setting up one single system of technology cooperation serving the needs of *all* the Conventions, Agreements and Programmes in the region. Obviously this would be more cost-effective, and far more could be done with far less.

To be cost-effective, the system should create synergisms between public and private investments at the regional level. To be productive, it should be based on the organisational and managerial concepts of the most advanced enterprises of *high-tech* Research and Development enterprises.

Among the industrialized countries there are models for this kind of system. In Europe, EUREKA, with its subsystem EUROMAR, is an excellent and very simple model: flexible, decentralised, and cost-effective. It generated billions of dollars of investments in R&D in high technologies. The time has come to include the countries of the southern and eastern Mediterranean shores in the system. Each one of the Mediterranean countries not yet included in the system should have its own National Coordinator, should be entitled to propose projects and participate in the selection of projects. The participation of the developing countries should be paid for through the Euro-Mediterranean Partnership (MEDA) and the Mediterranean Environmental Technical Assistance Programme (METAP). One could stipulate that any project to be adopted would have to have at least one partner in a developing country. The final project selection would be made by the Ministers of Science and Technology of the Contracting Parties of the Barcelona Convention. They would meet under the aegis of the Mediterranean Commission on Sustainable Development, taking advantage of its trans-sectoral structure. This linkage to the MCSD would guarantee that projects selected would be

environmentally and socially sustainable and serve the requirements of the Law of the Sea Convention as well as of all UNCED Conventions, Agreements, and Programmes in the Mediterranean.

A number of other developments point in the same direction of strengthening Mediterranean cooperation, including the developing countries. One example is the European Global Ocean Observing System (Euro GOOS), the association of European research and operational agencies to promote the global ocean observing system, which considers the Mediterranean basin the number one priority area for capacity building. Technological cooperation is the main issue. A particular organisation, Med GOOS, with representatives of almost all Mediterranean countries, has been established by IOC, with a steering committee in Malta to promote GOOS in the Mediterranean.

Joint Research and Development is today the most effective, including cost-effective, form of “technology transfer”.

New forms of cooperation between the private and the public sector at the international level – not “privatisation” – offers the possibility of a synthesis between the necessarily more narrow financial, short-range interests of the private sector, whose business is business, and the wider, social and environmental, long-term concerns and responsibilities of the State.

For developing countries, co-development of technology has a number of special advantages: firstly it has a built-in component of *training*; technicians from developing countries, selected for participation in joint R&D, learn “on the job”; secondly, technologies developed jointly need not be “adapted” subsequently for use in the developing country, but are, from the outset, designed for such use; thirdly, there is no problem with regard to “intellectual property rights”. Technologies developed jointly are owned jointly, and there is already a large literature on how such rights are managed. Technology co-development will contribute to the broadening and opening of the notion of “intellectual property” which is inevitable in any case. Important in this context also is the role of publicly funded research and publicly owned technologies in the transfer and diffusion of environmentally sound technologies, presently being studied by UNCTAD, UNEP and the UN Department of Economic and Social Affairs.

The establishment of such systems of technology co-development within the scope of revitalized Regional Seas Programmes would be in full accord with the Programme for the Further Implementation of *Agenda 21* adopted by the Special Session of the UN General Assembly, 23-27 June 1997. Paragraph 92 of this Programme reads: *Governments should create a legal and policy framework that is conducive to technology-related private sector investments and long-term sustainable development objectives. Governments and international development institutions should continue to play a key role in establishing public-private partnerships, within and between developed and developing countries and countries with economies in transition. Such partnerships are essential for linking the advantages of the private sector – access to financing and technology, managerial efficiency, entrepreneurial experience and engineering expertise – with the capacity of Governments to create a policy environment that is conducive to technology-related private sector investments and long-term sustainable development objectives.* Paragraph 93 recommends the creation of centres for the transfer of technology at various levels, including the regional level. Paragraph 95 stresses the

importance of taking appropriate measures to strengthen South-South cooperation for technology transfer and capacity-building.

Integrating Sustainable Development and Regional Security

Regional cooperation and development is of fundamental importance for the implementation of each and all of the UNCLOS/UNCED Conventions, Agreements, Action Plans and Programmes. Each one of them refers to regional cooperation and relies on it. Regional cooperation is equally important for the implementation of the *Agenda for Peace*.

Sustainable Development can only be attained in a context of peace and security. This has institutional implications: for, if sustainable development and security are an integrated concept, we need an institutional framework capable of containing both components.

This broader aspect of “integrated coastal management” has been avoided as far as possible by the intergovernmental conferences because of its politically highly sensitive nature.

The interaction between military and peaceful uses of the oceans may be *of a specific nature*, such as problems arising from the *exemption of naval vessels from the rules of environmental protection as laid down in Part XII of the Law of the Sea Convention*; or the consequences of accidents such as collisions involving nuclear naval vessels or vessels carrying nuclear weapons, or the loss of nuclear weapons at sea, of which there are a number of cases.

The conflict, however, is deeper and of a more *general nature*. It may not be possible to ignore the problem much longer. The management of peaceful ocean uses is too closely linked to the control of military uses.

The broader, *general* problem arises from the simple, elementary and pervasive fact that *without peace and security there can be neither economic development nor conservation of the environment*.

“Security”, however, is not what it used to be. “Security”, especially as the concept has been evolving since the end of World War II, has three interdependent dimensions: political/military security, economic security, and environmental security. This conceptual evolution has taken place in fora quite distinct from those dealing with the peaceful uses of the oceans. It was indicated first in the Palme Report on Disarmament and Development, formulated as “comprehensive security” in Gorbachev’s *Perestroika* and further developed in the United Nations *Agenda for Peace*. Its institutional implications are many, and they have not yet been fully explored.

The integration of sustainable development and security is an inevitable next step in the evolution of a legal and institutional framework for the implementation and further development of the Law of the Sea and of all the UNCED and post-UNCED Conventions, Agreements, and Programmes, and this integration could best be pioneered at the regional level.

The United Nations Secretary General’s *Agenda for Peace* stresses the importance of *regional*

cooperation in this process and its potential contribution to enhancing preventive diplomacy, peacekeeping, peacemaking and post-conflict peacebuilding. Regional organisations qualified to participate in this process could include

“treaty-based organisations, whether created before or after the founding of the United Nations, regional organisations for mutual security and defence, organisations for general regional development or for cooperation on a particular economic topic or function, and groups created to deal with a specific political economic or social issue of current concern.”

The organisations created by the Regional Seas Programmes and Conventions belong to these categories.

The Agenda further states:

Under the Charter, the Security Council has and will continue to have primary responsibility for maintaining international peace and security but regional action as a matter of decentralization, delegation, and cooperation with the United Nations efforts could not only lighten the burden of the Council but also contribute to a deeper sense of participation, consensus and democratization in international affairs.

But Regional Seas Programmes have not yet taken up this challenge and opportunity. The Year of the Ocean, and the process, already initiated, of revitalizing the Regional Seas Programmes provides an excellent occasion for doing so.

The interdisciplinary institutional framework of the Mediterranean Commission for Sustainable Development could be utilized also in this context. For, if all Ministers involved in one way or another in ocean affairs are called upon to participate in the Ministerial Segment – why should the Secretaries of the Navies, or the Ministers of Defence be excluded? Are they not involved in ocean affairs? They could be called upon whenever a question of regional security or peaceful cooperation of navies is on the agenda. They would constitute a sort of “Virtual Mediterranean Security Council”. It could serve the purpose of UN peacekeeping in cases of armed conflict requiring military responses, through the appropriate chain of command, under the Secretary-General of the United Nations. In the absence of armed conflict, naval regional cooperation could extend to joint surveillance and enforcement and to peaceful humanitarian activities such as search and rescue, disaster relief, or hydrological surveys, mapping, and other forms of oceanographic research. In institutional terms this is a simple extension and adaptation of a process already in course. The Mediterranean Commission on Sustainable Development makes recommendations to the Contracting Parties to the Barcelona Convention. Why should it not make recommendations regarding regional security which is an essential component of sustainable development?

Regional seas should be declared, wherever possible, as nuclear-free zones. This is another way of integrating environmental and political security and interpreting, developing and implementing the new principle, enshrined in the Law of the Sea Convention (Article 88), reserving the High Seas for peaceful purposes. This also includes the Exclusive Economic Zones. Promising beginnings have been

made already with the Declaration on the Indian Ocean as a Zone of Peace, the Antarctic Treaty, the Treaty of Tlatelolco establishing a Latin American Nuclear-Free Zone (LANFZ) – which should be extended to the Caribbean – and the Treaty of Rarotonga, with its Protocols. The Baltic, the Arctic, the Mediterranean, the Caribbean, the Asian Seas might be good candidates for extending the application of this concept².

Regional settlement of disputes, finally, could make another important contribution to regional security. The system for the peaceful settlement of disputes contained in Part XV and Annexes V-VIII could be utilized for this purpose. Regional Arbitration or Regional Special Arbitration Tribunals could be constituted.

Peace is a universal concept which is not attainable unless harmony – not only in the social sense as between individuals but also in the larger sense as between humans, animals and plants – is attained.

Thus, there is a convergence between the emerging systems for the peaceful uses of the oceans for sustainable development, and the agendas for peacemaking, peacekeeping, and peacebuilding, especially at the regional level where regional seas programmes for sustainable development and maritime zones of peace may eventually coincide. Regional cooperation of navies for peaceful purposes, including joint surveillance and enforcement of regulations on peaceful uses and humanitarian operations may equally serve to safeguard regional security under the aegis of a United Nations *Agenda for Peace*.

² See Ramon Lopez Reyes, “Maritime Zones of Peace: A Regime of Peace on the Seas,” in *Peace in the Oceans: Ocean Governance and the Agenda for Peace*, Paris: UNESCO, Intergovernmental Oceanographic Commission technical series, 1997.