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**THE PROTECTION AND MANAGEMENT OF OCEANS, SEAS AND COASTAL AREAS UNDER  
THE TLATELOLCO PLATFORM ON ENVIRONMENT AND DEVELOPMENT.  
A PRACTICAL ANALYSIS OF ITS IMPLICATIONS \***

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## SUMMARY

This document provides a brief introduction to the rationale of the proposal advanced by the Economic Commission for Latin America and the Caribbean on changing production patterns with social equity and environmental sustainability and, in that context, analyses the section of the Tlatelolco Platform on Environment and Development concerning the region's coastal areas, seas and oceans.

The importance of incorporating the ocean variable into national development processes is highlighted, as is the need for broad-based participation by local communities in formulating and implementing policies on the subject.

Next, the relevant recommendations of the Tlatelolco Platform are analysed in light of the work experience of ECLAC and the main developments at the level of the United Nations system as a whole and of its regional bodies.

Lastly, possible courses of action on each topic are examined, with the goal of addressing the most immediate priorities of the countries of the region and determining the most likely opportunities for cooperation in doing so.

## I. PRELIMINARY CONSIDERATIONS

An analysis of the so-called ocean policy aspects of the Tlatelolco Platform on Environment and Development entails a reflection on the contribution of the region's coasts, seas and oceans to its sustainable and equitable development.

In general, development is considered sustainable when it satisfies the needs of the present generation without compromising the capacity of future generations to satisfy their own needs. In turn, the term "equitable" is applied to non-exclusionary development styles, i.e., those which do not effectively bar any social group from enjoying the fruits of development.

The challenge of sustainable development in Latin America and the Caribbean must be understood in terms of undeniable facts: at the end of the 1980s, the region had a poor population of 183 million, together with alarming rates of malnutrition, social differences that were often shockingly wide, large external debts, considerable international dependence and political systems that, although democratic, were in many cases new and still fragile.

In addressing these problems, the sectoral approach —from the perspective of those who, on a daily basis, try to incorporate the sea into national development processes— should be included in the broader context of efforts to bring about social equity.

The debate on topics such as marine pollution from land-based sources, human settlements in coastal areas, the promotion of small-scale fishing, the protection of endangered species, toxic waste dumping and access to surplus catches of fish should be based on the premise that solutions to these concerns should aim at placing the sea at the service of human beings, including coastal communities and sectors which, having long awaited the chance to share in the benefits of development, can no longer be marginalized by a kind of modernization which coldly ignores the importance of solidarity as a basis for social relations.

The United Nations Conference on Environment and Development will surely rouse the world community from the passivity it has often shown, ever since the adoption of the Declaration on the Establishment of a New International Economic Order and of the Charter of Economic Rights and Duties of States, in the face of the need for more equitable relations among nations. However, the likelihood that a North-South dialogue of this nature will bear fruit will depend on the extent to which each country's society commits itself to achieving equity; in the absence of such a commitment, the third world's impact on this new order of international relations will be politically and morally weakened.

The message which ECLAC incorporated into its proposal on changing production patterns with social equity reflects the Commission's response to the major lessons derived from the economic crisis of the 1980s,<sup>1</sup> and basically refers to what is considered the primordial, joint responsibility of all countries: the transformation of the region's production structures in a context of progressive social equity.

Through this transformation, efforts can be made to create new sources of dynamism to further some of the goals of a modern conception of development, such as growth, better income distribution, consolidation of democracy, greater autonomy and the generation of conditions under which environmental degradation is halted and the quality of life of the entire population is enhanced.

The imperative of equity demands that changing production patterns be accompanied by redistributive measures based on active participation by all social actors.

Subsequently, for the Latin American and Caribbean Regional Preparatory Meeting for the United Nations Conference on Environment and Development, ECLAC supplemented its previous proposal by further examining the question of how to fit the environment variable into the process of changing production patterns with social equity, setting the stage for a debate among the countries of Latin America and the Caribbean to consolidate a regional contribution to the aforesaid Conference.<sup>2</sup>

As a result of the work on this new proposal, and considering the priorities of the countries of the region in the negotiations undertaken in the process of preparing for the Conference, the Tlatelolco Platform on Environment and Development was adopted at the end of the Regional Preparatory Meeting. The provisions of the Platform pertaining to the coastal, marine and ocean areas of the countries of the region will be analysed in the following chapter.

## II. ANALYSIS OF THE PERTINENT RECOMMENDATIONS OF THE PLATFORM

Each of the recommendations set forth in paragraph 24, subparagraph d), of the Tlatelolco Platform, concerning the protection and management of oceans, seas and coastal areas, entails the consideration of national and regional realities, the extent of the problems and the viability and timeliness of solutions.

### Preparing an inventory of the region's living and non-living resources to assess their potential and their rate of extraction

This recommendation concerns the region's need for adequate inventories of its marine resources, in terms of both statistics and socio-economic valuation, to enable it to adopt the most efficient management techniques for ensuring the sustainability and appropriate enjoyment of such resources and their benefits by the human communities that depend on them.

While it cannot be denied that serious efforts have been made in the area of resource inventories, or that abundant statistics are available, a question arises as to the capacity of the countries of the region to use these data and adapt them to national requirements (in taking management decisions, for example).

The sustainable use of natural resources requires the obtaining of data on various physical, chemical, biological and environmental parameters. However, the importance of including social considerations in the databases used to rationalize extraction processes has also become increasingly evident.

According to a number of surveys conducted by organizations of the United Nations system,<sup>3</sup> it is generally necessary to determine the maximum sustainable yields for different species, to establish harvesting capacity, to determine the available surplus and to set the terms and conditions of access to the surplus.

With respect to non-living resources, there is a need for geophysical prospecting, surveys, mapping, etc.

The database needed for use in resource regulation and environmental protection includes a number of subject areas, such as meteorological, marine and oceanographic observations.

In general, data needs are expressed in terms of physical data on tides, waves, currents, winds and depth; chemical data on salinity; biological data on stock assessment, ecological system for mangroves, coral reefs and ecosystem sensitivity; geological data on geophysical prospecting surveys and borehole

drilling capability; and environmental data on standard-setting, level of contamination and its effects on resources and human health.<sup>4</sup>

The management of data on marine affairs is a key factor in accurately evaluating resources. A number of agencies in many countries collect, use or archive many kinds of data. The problem presented by the fact that they do not necessarily use standardized reporting formats will tend to worsen with the use of more modern technologies that generate data faster.

It is essential to identify the purposes of collecting information and to evaluate it in light of the goals pursued by the managing authority, adapting it to planning requirements.

It is also important to ensure the quality of the basic data collected through, inter alia, the application of academic review standards in assessing information quality.<sup>5</sup>

In addition, it would be appropriate to carry out baseline studies, to intercalibrate techniques and to standardize scientific methods, identifying available data banks and possibilities for their expansion.

The capacity of countries to distribute, analyse and apply this information in decision-making must be enhanced. For this purpose, an attempt should be made to standardize the format used for case studies to ensure their comparability at both the national and regional levels, integrating technical, social, political and other aspects.

At this point, attention should be drawn to the new backdrop which the United Nations Convention on the Law of the Sea provides for marine scientific research. As noted by the Secretary-General of the United Nations in a report submitted to the latest session of the General Assembly,<sup>6</sup> "[t]he recognition that the ocean is a resource capable of making a growing and substantial contribution to sustainable economic development and also the recognition of the need to understand its role in the total global system have placed new and increased demands on marine science. At the same time, increased interest in coastal and shelf processes has been paralleled by a growing need to understand the holistic behaviour of the total global ocean system, particularly the way in which it acts as a control on climate variability through circulation and heat exchange".

The report also indicates that among the major issues requiring concerted action by States are the following: a) creation of national and regional marine scientific research capabilities which will provide sound scientific bases for the development and management of marine resources, both living and non-living; b) research and monitoring of marine pollution; c) global climate research programmes and associated large-scale oceanographic experiments to observe and understand air-sea interaction and how oceans and climate affect each other; d) coastal dynamics and sea-level rise; and e) development of global ocean observing systems to support marine scientific research and ocean uses.

The regulations for marine scientific research laid down in Part XIII of the Convention confirm the right of all States and competent international organizations to carry out such research, as long as it is conducted exclusively for peaceful purposes.

The Convention requires States and international organizations to promote the flow of scientific data and information and the transfer of knowledge resulting from marine scientific research, especially to developing States, as well as the strengthening of the autonomous marine scientific research capabilities

of developing States through, inter alia, programmes to provide adequate education and training of their technical and scientific personnel.

It is interesting to analyse the provisions concerning marine scientific research in the exclusive economic zone (EEZ) and on the continental shelf, such as the granting of consent by the coastal State and the conditions with which the State authorized to conduct research must comply, including the obligation to ensure the right of the coastal State to participate or be represented in the project, especially on board research vessels and other craft, and to provide the coastal State with preliminary reports, as soon as practicable, and with the final results and conclusions after the completion of the research.

One point which must be taken into account is that the Convention allows what it terms implied consent, meaning that six months after the date upon which the required information was provided to the coastal State, unless within four months of the receipt of the communication containing such information the coastal State has withheld its consent or requested supplementary information, the coastal State shall be considered to have authorized the research. It is therefore essential for developing States to strengthen their internal capacities for properly evaluating the requests submitted to them.

Establishing special areas on the basis of the characteristics  
of the resources they contain

This topic is directly related to that of protecting biodiversity. The establishment of protected zones and species is one means of safeguarding biodiversity. It is interesting to analyse experiences both at the national level and with respect to regional agreements on protected areas.

At this juncture, it seems important to refer to the considerations on biodiversity contained in the Tlatelolco Platform.

Despite the existing quantity of information on the variety and distribution of coastal and marine species, there is, in general, a lack of understanding of marine ecosystems. The global network of protected coastal and marine areas is much less developed than its land-based counterpart. The two main differences between them are related, on the one hand, to the physical boundaries between marine ecosystems, which are less pronounced and therefore allow the effects of environmental changes to spread faster, and, on the other, to the fact that changes in the biodiversity of marine ecosystems can lead to a crucial functional ecological instability that affects productivity and the food chain.

Physical and chemical changes, toxic pollution, marine residue, incidental fishing and over-exploitation are the principal threats to biodiversity. While it is not yet possible to produce an overall estimate of specific losses, it is clear that owing to development-related activities, extensive destruction has taken place in coastal areas (estuaries, salt marshes and coral reefs, which are comparable to the environments of dense tropical forests in terms of their biodiversity, algae beds and mangroves).

It is interesting to note that the application of the concept of "megadiversity" has made it possible to draw up a list of 13 countries where the conservation of biodiversity is considered critical. Of these, six are in Latin America: Brazil, Colombia, Ecuador, Mexico, Peru and Venezuela.<sup>7</sup>

Megadiversity involves taking an overall view of the presence of species, critically important ecosystems and biogeographical regions, freshwater systems, marine systems and the presence of wilderness areas.

As part of the preparatory process for the United Nations Conference on Environment and Development, an Ad Hoc Working Group of Experts on Biological Diversity is considering the general content of a possible instrument on the protection of the planet's biodiversity, which could be adopted during the Conference. In this context, it is especially important to incorporate a marine strategy into the negotiations on this instrument.

In the view of the Executive Director of the United Nations Environment Programme (UNEP), the draft convention covers four critical issues, the first of which concerns the fundamental principle that the conservation of biological diversity is a common concern of all people. This principle, which requires the participation of all countries and all peoples in a global partnership, implies intergenerational equity and fair burden-sharing. This common concern calls for a balance between the sovereign rights of nations to exploit their natural resources and the international community's interest in global environmental protection. The second issue concerns financial mechanisms; the draft convention must contain concrete commitments to funding. While it is clear that the costs involved will be enormous, it must be borne in mind that the cost of inaction would be far greater. The third aspect is that of the interlocking issues of availability of and access to biological resources and relevant technologies. Access to biodiversity and the availability of biotechnology and other technology relevant to the rational use of biological resources are mutually complementary and inseparable. Sovereign States expect, and should receive, fair compensation for the use of their genetic resources. The private sector, which has invested large sums in research and development for new technologies, also expects reasonable compensation for participating in technology transfer arrangements, supporting education and training, and developing indigenous technologies. The fourth and final issue relates to the need to ensure the continued participation of developing countries in the negotiations at the widest possible level.<sup>8</sup>

It is important that the development and application of biotechnology be adapted to the particular problems of developing countries, to enable them to obtain a fair share of the economic and social benefits generated through the use of their genetic diversity. In this regard, preferential treatment should be guaranteed to the owners of genetic resources with respect to access to biotechnologically engineered resources.

Two major subregional initiatives have been taken within the region for the protection of coastal and marine biodiversity: the Protocol for the Conservation and Management of Protected Areas in the South-east Pacific, signed on 21 September 1989, and the Protocol concerning specially protected areas and wildlife under the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, signed on 18 January 1990.

Carrying out a regional and international exchange of data obtained from national systematic monitoring stations on changes in the coastal dynamic

Initially, it would be necessary to ascertain the various causes of changes in the coastal dynamic, to identify sources of information on the subject (both national and foreign) and to agree on appropriate means of effectively carrying out such an exchange.

One of the basic requirements in this regard is an in-depth analysis of national capacities to process data obtained from international data banks.

As mentioned above, proper management of scientific data is an essential condition for efficiently assessing marine resources.

Considerable advances have been made in a number of Latin American and Caribbean countries and subregions in conducting studies on the possible effects of climate change, basically with respect to sea-level rise.<sup>9</sup>

As indicated in the Tlatelolco Platform in relation to the protection of the atmosphere and climate change, participation in any global solution to these environmental problems should be consonant with the economic and technical resources available to the developing countries. In addition, the negotiation of a framework convention on climate change should be aimed at minimizing the anthropogenic causes of the phenomenon; the region's archipelagos, islands and low-lying countries would be particularly vulnerable to its consequences.

The Platform also asserts that the framework convention should recognize the main responsibility of the developed countries for the net concentrations and emissions of greenhouse gases in the atmosphere and for the effects deriving from transboundary pollution.

Furthermore, in the legal framework of the Vienna Convention, the Montreal Protocol and the amendments to both instruments agreed upon by the contracting parties, it is imperative that the entire region orient its objectives towards industrial retrofitting to replace substances which deplete the ozone layer, as a number of countries, such as Chile, are already doing, and that it be guaranteed access to all the financial and technical assistance needed without being required to contract additional debt.

Elaborating and improving appropriate technologies between developed and developing countries, including application of the precautionary principle and clean technologies approach

Supporting the establishment of regional marine technology centres for the joint development of environmentally compatible technologies to ensure sustainable development in the region

Since these two recommendations are related, they will be analysed together.

Industrial retrofitting to eliminate the use of substances which deplete the ozone layer is part of an effort to incorporate appropriate technologies into development processes.

The technology issue is truly an essential factor in determining the real possibilities for any sustainable use of the natural resources of developing countries. In this connection, as indicated in Our Own Agenda,<sup>10</sup> sustainable development principles cannot be rendered applicable unless new technology adapted to those principles is generated and defined.

The nations with the highest standards of living are the ones with an extensive mastery of science and technology and successful organic linkage between research and production. The relative weakness of the developing countries as a whole contrasts with the practice of industrialized nations, which give national priority to issues relating to science and technology.

The aforesaid document analyses the fact that many of the technologies used in Latin America and the Caribbean are not generated in the region and that virtually none of the countries has maintained sufficient genuine internal capacity for scientific development and technological change to sustain its bases for capital formation and managerial skills, to link knowledge and production and, lastly, to penetrate international markets by increasing international competitiveness.

It seems essential to foster technological development consistent with social and natural realities, since traditional technologies, long used by local communities, are often much more efficient than imported methods. The need to develop the concept of "pertinent technologies" should be borne in mind, since there is a frequent tendency to absorb sophisticated, intrinsically polluting and debt-generating technologies without considering that traditional technologies have, in many cases, proved more efficient for truly sustainable development.

It would also be advisable to emphasize specific branches of knowledge in which countries can, with available resources, reach levels of excellence and mastery that can enable them to lead the world in given areas. A case in point is the application of biotechnology to certain natural resources existing in great abundance, through which the countries could make use of dynamic comparative advantages that would facilitate their access to the openings still found in world markets.

Part XIV of the United Nations Convention on the Law of the Sea is devoted to the development and transfer of marine technology, which is closely related to the previously analysed topic of marine scientific research in that the Convention recognizes the relevance of both to the sustainable and equitable use of marine resources.

Part XIV sets forth the duty of all States to promote the development and transfer of marine science and technology "on fair and reasonable terms and conditions". It further stipulates that "States shall promote the development of the marine scientific and technological capacity of States which may need and request technical assistance in this field, particularly developing States, including land-locked and geographically disadvantaged States, with regard to the exploration, exploitation, conservation and management of marine resources, the protection and preservation of the marine environment, marine scientific research and other activities in the marine environment". Lastly, it specifies that "States shall endeavour to foster favourable economic and legal conditions for the transfer of marine technology for the benefit of all parties concerned on an equitable basis".

Likewise, in the section on national and regional marine scientific and technological centres, States are called upon to promote, in coordination with the competent international organizations and national research institutions, the establishment of regional marine scientific and technological research centres,

particularly in developing States, in order to stimulate their conduct of marine scientific research and facilitate their access to appropriate technologies.

The provisions analysed are best considered in the context of the resolution on the development of national marine science, technology and ocean service infrastructures, adopted at the Third United Nations Conference on the Law of the Sea, which notes that, unless urgent measures are taken, the marine scientific and technological gap between the developed and the developing countries will widen further and thus endanger the very foundations of the new regime established by the Convention. In addition, it calls upon States to determine appropriate priorities in their development plans for the strengthening of their marine science, technology and ocean services, and calls upon the developing countries to establish programmes for the promotion of technical cooperation among themselves in the field of marine science, technology and ocean service development.

The resolution also contains a recommendation that funding agencies, such as the World Bank, the regional banks and the United Nations Development Programme, augment and coordinate their operations for the provision of funds to developing countries for the preparation and implementation of major programmes of assistance in strengthening their marine science and technology.

Access to appropriate technologies for clean production is clearly one of the central concerns of the Platform, which therefore recommends general application of the precautionary principle.

The application of the "clean production" criterion demands that a series of requirements be met to ensure that industrial processes are ecologically compatible, through the frugal use of raw materials, water and energy, and that they do not release toxic waste into the environment. Initiatives to ensure "clean production" should cover all related activities, including the selection of raw materials, extraction and processing through manufacturing and assembly, and industrial and domestic use of the product until the end of its useful life.

The preventive action approach or precautionary principle seeks to eliminate and prevent emissions of hazardous wastes, broadly defined, whenever there are grounds for believing that harm or harmful effects could occur, even in the absence of appropriate or conclusive evidence of a causal relation between the emissions and the effects.

#### Promoting the use of integrated management approaches to marine and coastal areas and resources

The need for a comprehensive strategy encompassing the different variables which interact in the ecosystem defined as a coastal area has been a concern of the countries of the region for almost two decades.

The difficulties in applying such a strategy stem from causes ranging from the mechanics of the State apparatus in the region's Spanish-speaking countries to the overlapping of spheres of authority in coastal areas to a lack of awareness of the marine dimension in the design of public policies, as well as the erosion of resource allocations by urgent socio-economic priorities.

Among the most serious management problems in Latin American coastal areas are the over-exploitation of fishing resources (exacerbated by the gradual replacement of small-scale fishing by

industrial fishing fleets), the degradation of ecosystems and of the marine and coastal habitat, the deterioration of water quality, the threatened extinction of a number of species and a limited institutional capacity to respond to the demands of integrated coastal management.<sup>11</sup>

According to the Report of the Secretary-General of the United Nations Conference on Environment and Development,<sup>12</sup> the problems of coastal and marine areas relate to demographic trends, poverty, migration, uncontrolled exploitation and competition for limited resources in pursuit of short-term economic interests.

The report also states that for planning purposes, coastal and maritime areas, which include exclusive economic zones (EEZs), should be considered as a whole in view of their functional, biophysical and socio-economic interrelationship. Coastal zones can be defined as including both the tributary river basins and the whole of the EEZ. More realistically, however, they are frequently considered to be rather more confined areas within which most important influences can be controlled.

Coastal areas emerge as an ideal case study of the various conflicting uses which require decisions on the part of political authorities. Managing them well requires finding solutions that ensure their sustainable and equitable development, given that they are the setting for the interaction of a series of interests often ranging from the very subsistence of coastal communities to waste disposal from industries located on the coast.

It is important not to separate the issue of coastal area management from the more general context of ocean management, of which it is a part. In order to adequately consider both aspects, it is essential to ensure the necessary human resources, scientific and technological structures and institutional mechanisms through which to take integrated, multidisciplinary approaches to such a complex reality as that of the final frontier.

A common effort must be made at the national, regional and international levels to train a growing number of specialists in marine science and technology, as well as political and planning officials who are aware of the importance of a national development strategy that incorporates the ocean factor.

The ideal would be for every coastal State to adopt a political framework and intra-governmental mechanisms for coastal and marine management that would provide for appropriate procedures for participation by coastal communities in programme development and implementation.

In the course of the work of the Preparatory Committee for the United Nations Conference on Environment and Development, an initiative was taken to establish a regional coordination mechanism for coastal development that would unite the efforts of the competent international agencies, regional programmes and donors, including regional development banks. It was felt that such a mechanism could develop guidelines for improving the compatibility of ecological and socio-economic concerns, for reclaiming deteriorated natural systems and restoring them to productive, socially beneficial uses, and for transferring clean-production technologies to development projects in coastal areas.

Banning the discharge of toxic wastes into seas and oceans

Increasingly complex industrial processes have resulted in ever-greater quantities of waste of all types. In 1990, the member countries of the Organization for Economic Cooperation and Development (OECD) generated some nine billion tons of waste, consisting of 400 million tons of municipal trash, 1.5 billion tons of industrial waste (of which some 300 million tons had hazardous properties) and seven billion tons of miscellaneous waste (from agriculture, mining, drainage, etc.).<sup>13</sup>

Waste management is associated with two serious international environmental problems: transport and disposal. Countries generate more toxic industrial by-products than they are able to treat or eliminate; developing countries often do not have the regulatory and technical capacity for environmentally sound management of the waste they produce, and in many cases, the offers they receive from industrialized countries for importing the latter's waste are economically beneficial to them.

Trade in hazardous wastes, both legal and illegal, is enormous in scope. It is estimated that in 1989, 40 million tons of toxic wastes entered the third world, and there have been many recorded attempts to introduce toxic wastes into various countries of Latin America and the Caribbean.<sup>14</sup>

This concern led the international community to adopt, on 22 March 1989, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, whose basic principles are that:

1. The quantity and toxicity of hazardous wastes should be kept to a minimum (clean production principle).
2. When hazardous wastes are produced, they should be managed in an environmentally sound manner and should be disposed of as near as possible to the place where they are generated (proximity and self-sufficiency principles). Transboundary movements should constitute an exception in this regard.
3. In exceptional cases, when appropriate technology and adequate infrastructure are unavailable and it is not possible to store or suitably treat hazardous wastes in the countries where they are generated, it could be safer for human health and for the environment to export hazardous wastes to a country capable of disposing of them in an environmentally sound manner (non-discrimination and adaptation principles).
4. Waste exports should be authorized only if their management in an environmentally sound manner in the importing State is assured (precautionary principle). Moreover, when transboundary movements are authorized, they should be subject to very strict, regular control procedures.
5. Increased international cooperation is needed to assist the developing countries in the environmentally sound management and treatment of the wastes they generate.

The Convention constitutes a transactional solution to problems involving highly diverse positions which are difficult to reconcile. Two of the main criticisms of the Convention are that it should have laid more stress on clean production and should have required the importing State to have the same disposal capacity as the exporting State, instead of only the capacity for "environmentally sound management"

stipulated in the text. Nevertheless, it undoubtedly represents a significant step forward in that it imposes controls on transboundary movements, thus discouraging them in favour of domestic waste disposal, although this, in turn, could prompt illegal movements of waste.

The African countries, which, in general, have maintained a reticent posture with respect to the Convention, adopted the Bamako Convention on the Ban on the Import into Africa and on the Control of Transboundary Movement of Hazardous Wastes within Africa.

Disposal at sea. The Basel Convention makes provision, in its definitions of disposal operations, for those which do not lead to the possibility of resource recovery, recycling, reclamation, direct re-use or alternative uses. This category includes release into seas and oceans, including sea-bed insertion.

In this connection, it is essential to relate the provisions of the Basel Convention to those of the Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter (London Dumping Convention) of 1972.

Matter dumped into the sea includes dredged material, industrial wastes and sewage sludge. The total amount of industrial waste dumped in 1987 was six million tons. The sewage sludge dumped in 1985 amounted to 14 million tons; a significant decrease was reported between 1985 and 1988.

Every year, some 260 million tons of dredged material are dumped at sea, constituting 80% to 90% of all matter dumped into the sea. Approximately 10% of dredged sediments are heavily contaminated from a variety of sources including shipping, industrial and municipal discharges and land run-off.

With regard to the incineration at sea of liquid organohalogen wastes, the amount burned at sea each year from 1976 to 1987 was about 100,000 tons. Since 1987 the amount incinerated at sea has decreased, and from 1990 onwards no application for sea incineration of liquid noxious wastes has been made.<sup>15</sup>

At the Thirteenth Consultative Meeting of Contracting Parties to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, it was resolved to phase out industrial waste dumping at sea until the practice was completely eliminated in 1995. Also, it was agreed that the London Dumping Convention was the proper international forum for dealing with the issue of sub-seabed deposits of low-level radioactive waste, since the disposal of such waste into sub-seabed sites constitutes an activity currently suspended under the provisions of a previous resolution of the Contracting Parties establishing a moratorium on the dumping of such waste. Lastly, it was decided that the Contracting Parties would re-evaluate the incineration at sea of liquid noxious wastes as soon as possible during 1992, with a view to discontinuing the practice by 31 December 1994. In any case, it is interesting to note that de facto incineration at sea ended in late 1990, when all marine incineration vessels were dismantled.

The most pertinent resolution concerns issues related to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, and calls upon the Contracting Parties to do their utmost to prevent the export of wastes to be dumped at sea, particularly wastes containing substances listed in annexes I and II of the London Dumping Convention, and also recommends that the necessary measures be taken to minimize the production of such wastes.

With respect to international movements of radioactive waste, in September 1990 the States members of the International Atomic Energy Agency adopted by consensus a Code of Practice on the

International Transboundary Movement of Radioactive Wastes. The code affirms the sovereign right of every State to prohibit movements of radioactive waste into, through or out of its territory, and stipulates that movements of radioactive waste must be made in accordance with internationally accepted safety standards.

Various types of inventories exist on transboundary movements of toxic and hazardous wastes in the region. In this regard, the Caribbean Environment Programme, with the support of Greenpeace International, conducted a survey of the transboundary movement of hazardous and nuclear wastes in the wider Caribbean region,<sup>16</sup> and a similar project will be undertaken within the Action Plan for the Protection of the Marine Environment and Coastal Areas of the South-east Pacific, based on information on hazardous waste trafficking in that region.<sup>17</sup>

It would be interesting to analyse the scope of the proposal of the Tlatelolco Platform to ban the discharge of toxic wastes into seas and oceans, considering the extent to which it is currently applied in the countries of the region, the feasibility of effective control and possible modalities for cooperation among the countries of the region to give legal form and political support to the ban.

Urging the international community to create cooperation mechanisms for the conservation and optimal use of the marine resources found within the zone of sovereignty or jurisdiction of two or more riparian States, or on the high seas

The issue of managing the living resources occurring in zones under national jurisdiction and zones in the high seas is an important aspect of sustainable marine development in the region.

The United Nations Convention on the Law of the Sea makes provision for this topic in parts V and VII concerning, respectively, the exclusive economic zone and the high seas.

Its article 63 stipulates that where "the same stock or stocks of associated species occur both within the exclusive economic zone and in an area beyond and adjacent to the zone, the coastal State and the States fishing for such stocks in the adjacent area shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary for the conservation of these stocks in the adjacent area".

Moreover, in part VII concerning the high seas, section 2 on the conservation and management of the living resources of the high seas sets forth the right of all States for their nationals to engage in fishing on the high seas subject to: i) their treaty obligations; ii) the rights and duties as well as the interests of coastal States provided for in part V of the Convention, both in the aforesaid article 63 and in the articles concerning highly migratory species, marine mammals, anadromous stocks and catadromous species; and iii) the provisions of the aforesaid section 2.

This section also establishes the duty of all States to take such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas.

The Convention stipulates that, in determining the allowable catch and establishing other conservation measures for the living resources of the high seas, States shall, on the best scientific evidence available to them, take measures to "maintain or restore populations of harvested species at

levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards".

It also provides that States shall "take into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened".

Lastly, it adds that "[a]vailable scientific information, catch and fishing effort statistics, and other data relevant to the conservation of fish stocks shall be contributed and exchanged on a regular basis through competent international organizations, whether subregional, regional or global, where appropriate".

The effective application of these provisions of the Convention poses a challenge to the capacity of the Latin American and Caribbean countries to cooperate in utilizing all possible mechanisms to facilitate compliance with the foregoing obligations.

It is interesting to explore, through national experiences, the real impact of this problem on the sustainable management of living marine resources and, consequently, on socio-economic conditions for development.

There is strong agreement among various authorities, with respect to stocks occurring in both the exclusive economic zone and the adjacent area of the high seas, that the management regime applied to species in the high seas should be consistent with the management regime applied by the coastal State in its EEZ. Likewise, it is considered beneficial for management systems applicable to highly migratory species to fully recognize the jurisdiction of coastal States in their EEZ and to be consistent with the conservation measures applied by those States.<sup>18</sup>

Another issue related to the management of the living resources of the high seas is that of large-scale pelagic driftnet fishing, which was the subject of a General Assembly resolution<sup>19</sup> that defines it as "a method of fishing with a net or a combination of nets intended to be held in a more or less vertical position by floats and weights, the purpose of which is to enmesh fish by drifting on the surface of or in the water", and adds that it can be a highly indiscriminate and wasteful fishing method that is "widely considered to threaten the effective conservation of living marine resources, such as highly migratory and anadromous species of fish, birds and marine mammals". The resolution also recognizes that "more than one thousand fishing vessels use large-scale pelagic driftnets in the Pacific, Atlantic and Indian Oceans and in other areas of the high seas".

In the Castries Declaration, the Authority of the Organization of Eastern Caribbean States resolved to seek to establish a regional regime for the regulation and management of the pelagic resources in the Lesser Antilles region that would outlaw the use of driftnets and other disruptive fishing methods by commercial fishing vessels. Moreover, it was resolved that all member States of the Organization of Eastern Caribbean States would take all possible measures to prevent the use of indiscriminate fishing methods in their exclusive economic zones.

Similarly, in the Action Plan of the United Nations Environment Programme and the Permanent Commission for the South Pacific for the Protection of the Marine Environment and Coastal Areas of the

South-east Pacific, the international community is called upon to carry out joint scientific, technological and economic studies with a view to adopting appropriate measures and establishing immediate mechanisms for the conservation and optimal use of living resources located beyond the 200-mile maritime zone when such resources consist of the same stocks occurring in the maritime zone or of associated stocks of fish.<sup>20</sup>

In addition, the member countries of the Plan (Chile, Colombia, Ecuador, Panama and Peru) reiterated their adherence to the aforesaid General Assembly resolution on pelagic fishing.

It was resolved to promote the proposal of the Government of Ecuador that an extensive area of the south-east Pacific be declared a "natural sanctuary" for certain species of cetaceans and chelonians so that, together with other similar species, they might complete their migratory cycle with no threats to their survival.

Lastly, the member countries of the Plan called the world's attention to the importance of the Chilean Government's proposal to set forth, within the South-east Pacific System, conservation measures for small cetaceans such as dolphins and porpoises to prevent their incidental capture.

The issue of incidental fishing and bans on the import of captured species to various markets in industrialized countries has given rise to considerable controversy, since the pretext of preserving species can be used to conceal other, protectionist motives, as in the case of Mexican tuna in United States markets.

Likewise, it is important to consider the social equity component of sustainable development, in that measures for the protection of species must be taken in a context of social solidarity with communities that depend on those species.

In this respect, it should be borne in mind that the United Nations Convention on the Law of the Sea, in setting forth conservation measures for resources in the exclusive economic zone, for example, often refers to the need to take into account "the economic needs of coastal fishing communities", "the need to minimize detrimental effects on fishing communities" and the case of a coastal State "whose economy is overwhelmingly dependent on the exploitation of the living resources of its exclusive economic zone".

Another aspect that should be analysed in relation to the need for rational management of living marine resources is that of large marine ecosystems, since any impact of conservation and management measures on any part of the area over which the resource is distributed, its associated species or the habitats on which the species depends for its survival must be considered.

Promoting the conclusion of an international agreement on the protection of  
the marine environment against land-based contamination

Land-based marine contamination represents the greatest threat to the health of the marine environment, especially in coastal areas where sources of such contamination are concentrated. Unfortunately, the situation is expected to turn even more critical, owing mainly to the increased population density in coastal areas.

There is general consensus within the marine scientific community that between 75% and 80% of marine contamination by human activities comes from land-based sources and that the remaining 20-25% is evenly divided between contamination by shipping (attributable to accidents or to normal operations) and dumping of waste and other matter.

With respect to the land-based component, scientific evaluations suggest that, overall, nearly half of this contamination comes from atmospheric discharges deposited in the oceans, while the other half comes from various levels of localized discharge (pipes) and non-localized discharge (run-off and physical alterations).

Furthermore, localized and non-localized discharges contain a combination of pollutants that enter directly into coastal waters and pollutants that enter indirectly through rivers and other watercourses. Most scientific studies also show that atmospheric discharges are much greater in industrialized countries and that, for most developing countries, atmospheric discharges are much less than 50%, while localized and non-localized discharges represent the main sources of pollution.

Land-based sources of marine contamination include a wide variety of wastes and other matter, the most common ones being nutrients, synthetic organic products, sewage, sediment, rubbish, metals, radionuclides, hydrocarbons and used oils. Action to reduce and prevent pollution from these sources hinges on a number of factors: identification of polluting sources; appropriate pollution control and prevention strategies; financial arrangements and technical assistance with respect to the development, use and transfer of appropriate technologies (with the necessary emphasis on clean technologies); and public education, among others.

Given the diversity of land-based sources of contamination, including contamination from rivers that originates a considerable distance upstream from the coastal area (through watersheds or drainage basins) and atmospheric emissions generated at great distances from the coast, the success of efforts to combat land-based pollution depends on the use of strategies that encompass most sectors of society. Effective measures concerning non-localized sources, for example, which are very difficult to control specifically, call for significant changes in the management of sewage and waste, modifications of agricultural practices and environmentally compatible approaches in construction, transport, mining and forestry operations.

More effective national, regional and global initiatives are needed to protect and restore the health and vitality of marine and coastal resources and ecosystems. In this context, the Tlatelolco Platform duly stresses the need for an international agreement to deal with this serious and growing problem.

The national level has been, is and should continue to be the forum in which practical action, both regulatory and of other types, takes place. In this regard, laws to prevent and control this type of pollution vary widely from one country to another in Latin America and the Caribbean.

At the regional level, the Protocol for the Protection of the South-east Pacific against Pollution from Land-based Sources, signed on 22 July 1983 in the context of the UNEP/PCSP Action Plan for the Protection of the Marine Environment and Coastal Areas of the South-east Pacific, is one of five regional agreements or protocols concluded to meet the needs of one region in particular. In turn, the Caribbean Environment Programme is revising and refining a draft protocol on land-based pollution. Along with national efforts, the regional approach is very useful for uniting various initiatives that deal with special environmental problems, as well as cultural, socio-economic and political factors in different regions.

At the same time, a new and comprehensive agreement on land-based marine pollution would provide an important tool for laying down common principles and obligations applicable to all States and for sharing specialized information and knowledge. While the Montreal Guidelines for the Protection of the Marine Environment against Pollution from Land-based Sources, adopted in 1985 under the leadership of the United Nations Environment Programme, serves as a useful guide to States, its voluntary nature has turned out to be insufficient to reach these important objectives.

From the perspective of Latin America and the Caribbean, it is clear, judging by the issues reiterated in the Tlatelolco Platform, that any global agreement on land-based sources of pollution must place much greater emphasis on mechanisms for assisting States in their efforts to prevent and reduce such pollution, including mechanisms to facilitate the necessary financial assistance; the development, use and transfer of appropriate technology; and other forms of technical assistance.

### Notes

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