

Second Meeting of the Executive Committee
of the International Ocean Institute
to be held
on
27 and 28 May, 1995
at
Malta

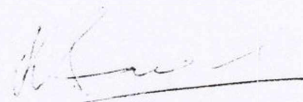
SECOND MEETING OF THE EXECUTIVE COMMITTEE
OF THE INTERNATIONAL OCEAN INSTITUTE

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Adoption of Agenda

The agenda reproduced below may be adopted by the Meeting of the Executive Committee with such amendments as may be considered necessary.

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- Item 2 - Procedure of the Executive Committee of IOI
- Item 3 - Report of the Executive Director
- Item 4 - World Commission on the Oceans
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- Item 6 - Pacem in Maribus XXIII
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Dr. Krishan Saigal
Executive Director

**Procedure of the Executive Committee
of IOI**

Composition

At its Board meeting held in Malta on 16-17 July 1993 the Governing Board of IOI set up an Executive Committee consisting of:

Amb. Layashi Yaker, President
Dr. Anton Vratusa, Vice President
Prof. Elisabeth Mann Borgese, Founder
Prof. Salvino Busuttil, Treasurer
Dr. Sidney Holt, Chairman Planning Council

The Secretary of the Executive Committee would be the Executive Director of the Institute.

Since the resignation of Dr. Holt, his place has been taken by Mr. Maxwell Bruce, Interim Chairman of the Planning Council.

Functions

The main function of the Executive Committee is to look into urgent policy matters arising between Board Meetings.

Procedures

The Committee has to devise its own procedures.

Minutes of the Executive Committee Meetings would be included in the agenda of the subsequent Board Meeting for information of the Board.


Recommendation on Procedures for the Executive Committee

1. The Executive Committee would carry out its functions as far as practicable through meetings to be held on dates and at venues determined by the Secretary in consultation with the President.
2. Appropriate notice of all meetings should be given to members in good time to make it possible for them to attend.
3. A detailed agenda of the matters to be discussed should be sent out with the notice.
4. Where a meeting is for any reason not practicable, matters may be decided by circulation.

5. Decisions of the Executive Committee shall be on the basis of a simple majority of the members present when matters are decided during meetings, and on the basis of a simple majority of the members of the Committee when matters are decided by circulation.
6. In the event of a tie, the President of the Committee shall have a casting vote.

Decision of Committee

The Executive Committee may approve the above procedure with such modifications as are deemed necessary.



Dr. Krishan Saigal
Executive Director

Report of the Executive Director
(December 1994 - April 1995)

Since the last report of the Executive Director submitted to the Governing Board at Madras on 6 and 7 December, 1994, the following developments have taken place.

UNDP Project

A project performance evaluation report (PPER) has been prepared for discussion at the tripartite review to be done at the meeting of Directors/Vice Chancellors to be held from 25-27 May, 1995. Since the PPER has been circulated to all the Committee Members who have been also invited to attend the Directors/Vice Chancellors meeting, it is not necessary to reproduce the same here.

Dr. Danny Elder, who was earlier with the IUCN, has been appointed by UNDP to carry out an independent evaluation of the UNDP Project. He would be giving a partial report on his visits to Malta, Dakar and Madras in the Director's/Vice Chancellors meeting.

PIM XXII

As a part of its research activity, IOI held its twenty second annual convocation 'Pacem in Maribus' on 5-8 December, 1994 in Madras, India.

Over 40 countries were represented at the Conference.

The theme of the conference was Sustainable Development and Regional Cooperation.

The subject was chosen with the specific purpose of focusing on some of the policy issues arising from the critical uncertainties of climate change, especially in the ocean-air interface, biodiversity in the marine sector, the carrying capacity of the ocean and polar regions as heat and waste sinks, and the various implications of the intrusion of high-tech into the marine sector. The Conference also looked at the issues involved in a coherent restructuring based on the impact of post-Rio and Law of the Sea developments on the evolving United Nations system.

During the Conference the speakers and the participants were asked to give special consideration in the above context, to the regions and subregions of the Indian Ocean as well as the need for using existing structures without creating new bureaucracies. The Conference was also asked to explore the possible creation of linkages between local communities and non-governmental organisations, private and public sectors, universities, research institutions, industry and national governments in the spheres of science and technology.

The Report of PIM XXII has been printed and will be distributed in the meeting.

Financially, nearly all the costs of PIM XXII were locally arranged and IOI headquarters had only to provide about US\$ 38,000 for external travel.

Training

An alumni course (1 week) and a policy makers course in environmental management (1 week) have been conducted by IOI Madras during this period. The policy makers course was meant for high-level policy makers from the Indian Government and was very well received. It was attended by 22 participants from all over the country. A 2-day leaders course has also been conducted by IOI Costa Rica. It was well received.

IOI Centres

There is interest in many quarters for being accepted as an IOI Operational Centre and we have proposals in this regard from South Africa, Qatar and Australia. These would be included in proposals for funding from the next tranche of GEF.

Miscellaneous

Seperate notes are being submitted on PIM XXIII and the World Commission on the Oceans.



Dr. Krishan Saigal
Executive Director

World Commission on the Oceans

The World Commission on the Oceans (WCOS) is an initiative of the IOI. So far the following steps have been taken:

- IOI has approached various authorities for funding and received positive responses from Sasakawa Foundation, Japan (\$ 390,000), the Government of the Netherlands (\$ 300,000), UNDP (\$ 120,000), Government of Monaco (up to \$ 300,000);
- informal consultations of vice-presidents were held at Paris on 10-11 April, 1995 (details at Annex I) wherein recommendations were made to the Chairman of WCOS regarding:
 - . membership of WCOS
 - . draft articles of WCOS
 - . the mode of servicing of WCOS
 - . content of final report (Annex II).
- these recommendations are to be discussed with Chairman Soares by Amb. Yaker on 26 May, 1995 and the results of the discussions would be conveyed to the Committee by Amb Yaker.

Regional Hearings

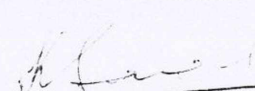
This matter was discussed in the Fourth Meeting of Representatives of IOI held on 8 December, 1994 at Madras.

The representatives of the operational centres were very keen to know as to what was expected from them. It was clarified that their task was to act as the regional secretariat of the Commission, to contact all those connected with ocean affairs in their region, to organise hearings, to summarise memoranda or comments received and to submit these to headquarters. It was further clarified that the operational centres would not be expected to bear the travel costs of those involved in the hearings.

Since then the Background Paper on the World Commission has been circulated to all the Centres by letter dated 21 April, 1995 (Annex III).

A Trust Fund for WCOS has also been established in Malta with Dr. De Marco, Fr. Peter, Prof. Busuttil, a representative of Deloitte & Touche Ross and the undersigned as trustees.

The Committee may like to review the progress of WCOS and decide what further needs to be done.



Dr. Krishan Saigal
Executive Director

Recommendations to the Chairman
from the Informal Consultations
held at Unesco, Paris
on 10 and 11 April, 1995

Informal consultations on recommendations to the Chairman of the Independent World Commission on the Oceans were held at the UNESCO building in Paris on 10 and 11 April, 1995. The following were present:

Prof. Elisabeth Mann Borgese
Dr. Gilbert Glaser
Dr. Krishan Saigal
Dr. Yoshio Suzuki
Amb. Layashi Yaker

Dr. Glaser, Director, Bureau of Coordination of Environmental Programmes, UNESCO, welcomed the meeting and conveyed the support of the Director-General of UNESCO, Dr. Federico Mayor, to the proposed World Commission on the Oceans. The oceans were not only an essential and important part of the planetary system (biosphere and geosphere) but also the repository of many resources which had to be sustainably developed for the benefit of humankind.

The Informal Consultations considered the documentation circulated by the Executive Director of the IOI, and after a thorough and comprehensive examination of all issues unanimously came to the following conclusions and recommendations which were to be conveyed to the Chairman by Ambassador Yaker.

- . The proposed membership of the Commission, which should not exceed a total of 30, should be strengthened in the following areas:
 - . South Korea
 - . Indonesia
 - . Oceania
 - . Gulf Cooperation Council
 - . Caribbean/Latin America.
- . The Executive Director of the IOI and the Treasurer appointed by the Commission should be ex officio members of the Commission.
- . A number of Eminent Persons could be added and invited to particular Sessions, or part thereof, in the context of their eminent competence on particular subjects.
- . A list of Honourary Members, including Heads of State, could also be added.
- . An early decision needed to be taken on the draft articles regulating the financial arrangements and work procedures

of the Commission.

- . Japan had agreed to host the second plenary of the Commission in early September (4-7 September, 1995) while the first Plenary could be held in Lisbon between 3 and 6 June, 1995. Each plenary session would last three days and be preceded by a one-day meeting of the Executive Committee.
- . An intersessional Executive Committee should be held in Malta at the end of July.
- . The third Plenary of the Commission could be hosted by Monaco in January or February, 1996.
- . Regarding the secretariat servicing the Commission, the Informal Consultation considered three alternatives, viz.:
 - the IOI Secretariat servicing the Commission with the addition of a core group of 5 high grade professionals to prepare the papers and the report. The IOI Operational Centres would conduct the Hearings in 1995 and conclude this work in early 1996.
 - the establishment of a separate secretariat for servicing the Commission and in charge of writing papers and the Report while the IOI would be responsible for the regional Hearings, the maintenance of accounts and other administrative matters.
 - the establishment of a totally separate Secretariat for the Commission.

Each of the alternatives had its pluses and minuses in the form of costs, required infrastructure, etc. All the alternatives, with their implications should be put up to the Chairman for his consideration and decision.

The informal meeting gave some detailed consideration to the proposed budget. It recommended that:

- . the cost for travels should be reduced by providing Business Class rather than First Class. First Class should be provided only for the Chairman of the Commission. Commissioners should be encouraged voluntarily to pay for their own travel expenses.
- . the budget should be revised in accordance with the recommendations of the informal meeting.

In conclusion, the participants in the informal meeting were received by the Director General of UNESCO, Dr. Federico Mayor, who confirmed his full commitment to the work of the Commission. He would be available to attend the opening Session of the Commission if it were to be held in Lisbon in June, in accordance with the recommendations of the Informal Meeting. He also

assured the participants that UNESCO would make means available for the implementation of the recommendations that would be contained in the Commission's final Report.

Contents of Report

(First Draft)

1. Introduction. Changing global system. Increase in number of actors -- States, NGOs, TNCs, media, citizens' groups and associations. Interdependence of issues, emergence of technological and institutional "gaps" due to High Technology, rise of environmental issues; issues of poverty, unemployment, gender, youth, indigenous people. The U.N. Special Conferences, in the wake of the Rio, 1992, Conference: their conclusions, recommendations, and consequences. Economic disequilibria and their impact on security. The changing concept of security, including economic and environmental security and its implications.
2. Sustainability -- the concept and its economic, political, cultural and social consequences. Sustainable development of marine resources -- food, water, drugs, energy, minerals, shipping, space, recreation; their place in the global economy (seventy percent of international trade; fifty percent of tourism; coastal development). Increasing population pressure on coastal areas and its environmental impact. Islands development.
3. Legal issues, including
 - . interlinkages between Law of the Sea convention, UNCED Conventions on Biodiversity and Climate Change, and Agenda 21;
 - . gaps in the form of national legislations and regional protocols.
4. Science and Technology. The science of planetary systems (GOOS, ecosystems, study of geosphere and biosphere) and High Technology. Cooperative and other mechanisms for involving the developing countries -- national, regional, global: New approaches to "technology transfer" in the age of high technology.
5. Institutional requirements at national, regional, and international levels. Redefining of the Regional Seas Programmes. Institutional mechanisms for the development of integrated policies, at national, regional, and international level.
6. Ocean governance and the restructuring of the international system, including the U.N. system and the place of the new actors therein.
7. Conclusions and action-oriented recommendations, including financial implications and ways of dealing with them.

BACKGROUND NOTE
ON THE
INDEPENDENT WORLD COMMISSION FOR
THE SEAS AND THE OCEANS

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BACKGROUND NOTE ON THE WORLD COMMISSION ON THE SEAS AND THE OCEANS

The World Commission on the Seas and the Oceans has been established in the context of the basic importance of the world ocean in the development of human society, the maintenance of peace and the health of the biosphere.

The oceans cover three-fourths of the earth's surface. They are of crucial importance for the economy/ecology of the 21st Century. The new order for the seas and the oceans created by the United Nations Convention on the Law of the Sea, 1982, (LOS Convention) and which has come into force with effect from 16 November, 1994, creates a model for a new global order of the oceans which is capable of meeting the challenges of the next century. This model has been further expanded by the United Nations Conference on Environment and Development, 1992 (UNCED) to embrace the coastal zone as an important facet of the land-sea interface and as a matter of critical importance to the management of the global ecosystem and the oceans. The Secretary General's Agenda for Peace and his Agenda for Development underpins many of the issues generated by UNCED and the LOS Convention.

Law of the Sea Convention

The law of the sea has evolved since time immemorial in a pragmatic fashion, responding to the needs of particular historical eras for establishment of a legal order based on recognized and widely accepted rules - under the aegis of which the oceans could peacefully and profitably be used for the purposes of, and within the ambit of the techniques available to, the peoples of that era. Thus the law of the sea has, during its evolution, addressed among other things navigation, providing freedom of the sea, and fisheries, subsumed under the same doctrine. Later it began to establish the jurisdictional limits of the sea for peacetime and wartime purposes. As technology and the enhanced voyaging and exploiting power that went with it advanced, the law of the sea was used to establish ad hoc regulatory regimes - catching of some species of fish and cetaceans, for example, was regulated by quotas.

When the composition and ordering of international society began to change after World War II, with the advent of the United Nations and the impetus it provided for decolonization, and as both the world's population and its demands on the sea grew in tandem with unprecedented technological advances in navigating, exploiting, and surveying of the oceans and their resources, the new international community, especially its newly independent and still developing members, began to seek a new international economic order (NIEO) and looked to the oceans for partial realization of their goals. The Third United Nations Conference on the Law of the Sea (UNCLOS III), convened by the UN General Assembly from 1973 to 1982 to review all ocean issues, did not, however, fully realize the demands of developing states for a new international oceans order (NIOO). The very novelty of the provisions of the LOS Convention, for example, with respect to

deep seabed mining led to reservations on the part of the industrialised countries though the other provisions of the Convention have, by and large, tended to become customary state practice and law.

The LOS Convention has greatly expanded national jurisdiction through the concept of the 200 nautical miles exclusive economic zone (EEZ) where the coastal and hinterland states have rights and duties to explore and exploit the resources of the ocean. But although the LOS Convention confers rights and duties to coastal and hinterland states to explore and exploit the resources of the ocean, these rights do not, in actual fact, translate into tangible benefits for most of the developing states. The reasons for this are quite clear. In large measure the principal interest of the major powers in the oceans has been in security and other strategic matters. It is no surprise that some of the ocean areas, such as the Indian Ocean and its resources, have remained relatively unexplored and unmapped as compared to, for example, the Pacific and Atlantic oceans. For instance, the extent of the Indian Oceans' riches has for a long time been unknown. Even though steps toward comprehensive exploration and mapping of the ocean have been taken in recent years, most of the developing coastal states have almost entirely depended on external assistance because individual countries are hampered by lack of finances, technology, and a skilled labour force. This external assistance has more often than not been inadequate.

For many developing coastal states, expanded jurisdiction offers the promise of a greatly expanded resource base with regard to minerals, hydrocarbons, and living resources. However, many coastal states receive few benefits since rational management of ocean resources still remains largely unexplored and unexploited. Lack of resources in the form of capital, human resources, and technology has further complicated the situation.

The LOS Convention has established a new legal order for the oceans from which the development of all possible uses of ocean space and its resources will emanate. The LOS Convention recognizes the exclusive rights and jurisdiction of the coastal states over the resources adjacent to the coast and extending out to 200 nm (see Articles 56 and 57). Likewise, the Convention recognizes the right of the coastal states in the resources of their Continental Shelf, which may extend up to 350 miles or beyond under certain circumstances (see Articles 76 and 77). The immense resource potentials, both living and nonliving, if properly explored, exploited, and conserved, could certainly alleviate some of the economic problems affecting most developing countries and raise the living standards of their people. The Convention also gives developing countries a share of the profits emanating from the resources of the deep seabed in the area beyond national jurisdiction.

UNCED

UNCED ended in Rio de Janeiro, Brazil on 14 June 1992 with agreement on a wide range of environment and development issues.

Perhaps the most important outcome of this historic meeting was the new appreciation that environment and development are part of an indivisible whole and that they must be dealt with together. Consistent with the findings of the 1987 World Commission on Environment and Development (the Brundtland Commission and its report Our Common Future), the 172 nations gathered in Rio generally agreed that the greatest threats to a quality environment on a global basis are poverty, unrestrained population growth, and unsustainable patterns of consumption. **Sustainable development** has emerged as the key goal.

Oceans and coasts are but one chapter (Chapter 17) of the 40 chapters making up the 800 page 'Agenda 21' but many feel that it is one of the more substantive parts of Agenda 21.

Before discussing Chapter 17 of Agenda 21, it should be stressed that virtually none of the UNCED decisions are self-implementing-and, except for the conventions on climate change and biological diversity, none are legally binding on nations. However, nations participating in the drafting of the Agenda 21 action programmes and formally approving their content (as all of them did), have associated themselves with the findings of the Agenda (as to the existence of certain problems and needs) and with the prescriptions for solutions laid out in the document. Hence, Agenda 21 represents a collective commitment of most of the world's nations to address a set of environment and development-related problems using a common orientation (the goal of sustainable development) to the best of their abilities and given their individual needs, constraints and limitations.

The UNCED text on the oceans gives support to four concepts:

- that the marine environment (ocean and adjacent coastal areas) 'forms an integral whole that is an essential component of the global life support system';
- that the oceans and adjacent coastal areas are 'a positive asset presenting opportunities for sustainable development';
- that the LOS Convention sets forth rights and obligations of states and 'provides the international basis upon which to pursue the protection and sustainable development of marine and coastal environment and its resources'; and
- that, given increasing problems of environmental loss and degradation, 'new approaches to marine and coastal area management and development are needed (at the national, subregional, regional, and global levels), approaches that **are integrated in content, and precautionary and anticipatory in ambit.**'

Integrated coastal management

In the Agenda 21 text dealing with oceans and coasts, coastal nations commit themselves to integrated management and sustainable development of coastal areas and marine environments under their national jurisdiction. The text calls for integrated policy and decision-making processes and provides a series of suggested actions that can assist coastal states in strengthening their efforts at integrated management of coastal and ocean areas.

Marine environmental protection

Agenda 21 calls for coastal nations to increase their efforts to deal with land-based sources of marine pollution. While this component accounts for up to eighty percent of the pollution currently found in the oceans, international efforts to deal with the problem have lagged. Among other things, the Agenda 21 programme calls upon nations to employ coastal planning and management efforts, including the control of non-point sources of pollution, as a step in strengthening existing activities.

Increasing efforts at the regional level are also called for to deal with the regulation of land-based sources of pollution.

Sustainable use and conservation of marine living resources

The improved conservation and management of high seas fisheries stocks was one of the ocean topics most vigorously debated at UNCED.

It seems likely that the new Sustainable Development Commission will address the conservation and management of fisheries stocks as an issue of high priority. Given the mandates contained in Agenda 21, first priority may be given to the high seas issues (including highly migratory species), but conservation and management practices within national jurisdictions will also be addressed.

The elements of the New Global Partnership

Seen in its largest perspective, the actions taken at the Rio UNCED meeting represent a coordinated effort at creation of a new global partnership on environment and development. Setting aside national security concerns, the new partnership aims to address what arguably are the most fundamental problems facing the world today—those of poverty, overpopulation, and unsustainable consumption.

The new partnership has two specific goals:

- . providing funding and technical assistance to the nations of the South so that they can develop in ways

that minimize the impact of that development on the earth's environment and global life support system.

- . motivating nations of the North to begin to move away from unsustainable patterns of consumption in order to create 'environmental space' for the development of the South.

The overall goal, of course, is to encourage nations individually and collectively towards 'sustainable development' and here a delicate balance is required. Poorer nations of the South do not want to see policies that favour future generations at the expense of the present generation many of whom continue to live in impoverished conditions.

The new partnership, the seeds for which were sown in Rio, can be thought of as composed of five components:

- . a set of principles (the Rio Declaration) that collectively describe the goals of the 'new order' that is sought;
- . a set of policies and action programmes (Agenda 21) that call for the kinds of changes in national and international behaviour that will be necessary if the world is to move toward a condition of sustainable development;
- . a series of financial arrangements (largely grants and loans from the North to the South) that will fund the additional costs that will be incurred in implementing Agenda 21;
- . agreements that acknowledge that the South will need 'access' to the environmentally sound technologies of the North;
- . the creation of a new institution to oversee the implementation of Agenda 21 (the Sustainable Development Commission).

Secretary-General's Agendas for Peace and Development

The implementation of the Secretary-General's Agendas for Peace and for Development as well as the implementation of the decisions of the Social Summit would enhance sustainable development and comprehensive security, including economic security (development) and environmental security (conservation). Ocean development and the Law of the Sea could make significant contributions to the implementation of all three agendas. Their implementation in the marine sector is in fact essential. Regional cooperation and organisation, with proper linkages both to the mechanisms of national and of global governance, and an interdisciplinary, transectoral approach to decision-making and problem-solving, are central to all three, as they are to Agenda

21 and the Convention on the Law of the Sea. Planning from bottom up, not from top down; participation of the nongovernmental sector, women, youth, indigenous people; the eradication of poverty are goals in decision-making that all these programmes have in common. Conceptualisation of, and in a number of cases already practical experience with, the necessary institutional arrangements is more advanced in the marine sector than elsewhere. With the necessary adaptations, they could find wider application.

World Commission on the Seas and Oceans

To carry further the process initiated by the LOS Convention and UNCED, a World Commission on the Seas and the Oceans (the Commission) has been set up under the leadership of President Soares of Portugal.

The Commission's terms of reference are:

- . to refocus world attention on the importance of sustainable ocean development and the law of the sea;
- . to monitor the ratification, implementation, and progressive development of the Convention, at national, regional, and global levels;
- . to examine whether States, especially developing countries, are able to fulfil their duties, enjoy their rights and generate their benefits under the Convention, to analyze the difficulties they might encounter, and to propose ways and means to overcome them;
- . to monitor the implementation of Chapter 17 of Agenda 21, at national, regional and global levels and to observe the function of the Convention in this process (legal framework; peaceful settlement of disputes; enforcement);
- . to follow the development of regional programmes of cooperation and development in the marine sector and examine how they adjust to the new requirements of integrated ocean management and sustainable development;
- . to examine the role of the Law of the Sea and ocean development in the process of restructuring the United Nations system as a whole for the 21st century and elaborate proposals to strengthen this role.

As is clear, the main objective of the Commission is to synthesise the LOS Convention and UNCED's Agenda 21, to fill in the gaps, if any, to suggest other necessary measures, and to indicate the institutional mechanisms at the international, regional and national levels that would help the attainment of what is set out in Agenda 21 and the LOS Convention.

The Issues Before the Commission

The coastal zone.

The oceans and seas cover 70 per cent of the Earth's surface and are active components of the global biosphere. One of the major developments of the last 20 years has been the realization that this vast sector of the environment is dynamic and interactive; thus, long-term environmental management of even a small portion of the marine environment requires an integrated approach which must include consideration of the coastal zones and also their drainage basins and the atmosphere.

The coastal zone, here defined as the region between the seaward margin of the continental shelf and the inland limit of the coastal plain, is among the regions of highest biological productivity on Earth. It is also the zone with the greatest human population. According to UNEP, about 60 per cent of humanity (or nearly three billion people) live in the coastal zone, and two-thirds of the world's cities with populations of 2.5 million or more are near estuaries. Within the next 20-30 years the population of this zone is expected to almost double. Some data on the coastal zone is presented in Table 1. As will be seen from there, the rise in urban population is much higher in the South (more than double that in the North).

This increase is inevitably altering land-use patterns in coastal zones. Other impacts there - and in the coastal regions generally - come from pollution, flooding, land subsidence and compaction, and the effects of upland water diversion. Natural habitats are being lost through reclamation for urban and industrial development, agriculture and mariculture. Nearshore regions are being degraded by eutrophication and industrial waste; public health is threatened by sewage contamination of beaches and seafood; and the marine environment is being fouled by the progressive build-up of chlorinated hydrocarbons, plastic litter and the accumulation of tar on coastlines. Some of the waste products of coastal development, augmented by discharges through coastal outfalls and rivers, spread outwards to the world oceans, carried by the atmosphere, currents and ships.

The proper management and sustainable development of the coastal zone is thus an issue of critical importance that is being addressed by the World Commission. Some of the questions that arise are:

- what are the scientific and technological parameters that need to be addressed in this connection
- whether integrated institutional mechanisms exist to ensure sustainable development of the marine environment
- what environmentally sound technologies are required

Marine Pollution.

The sea is the ultimate sink for most of the liquid wastes and a considerable fraction of the solid wastes resulting from human activities on land. According to UNEP, more than three-quarters of all marine pollution comes from land-based sources, via drainage and discharges into rivers, through outfalls flowing directly to estuaries, bays and open coast, and from the atmosphere. The rest comes from shipping, dumping and offshore mining and oil production. The greater part of this pollution passes into coastal waters, and more than 90 per cent of all chemicals, refuse and other materials entering these waters remains there in sediments, wetlands, fringing reefs and other coastal ecosystems.

Such excessive nutrient loads bring marked ecological changes. The structure of plankton communities is altered, with preferential growth of small flagellates rather than the larger diatoms, and unusual plankton 'blooms', uncontrolled by the normal processes of grazing. The subsequent decomposition of the mass of organic matter deoxygenates the water, killing fish and invertebrates, while some species of algae produce foam and scum which interfere with fishing and reduce the amenity of beaches when washed ashore. In some cases the sea is discoloured, giving rise to the term 'red tide'. Some of the plankton species are toxic, and consumers of seafood exposed to such blooms are at risk from paralytic, diarrhoeic and amnesic shellfish poisons.

Some 6.5 million tonnes of litter finds its way into the sea each year. In the past, much of it disintegrated quickly, but resistant synthetic substances have in recent years replaced many natural, more easily degradable materials. Plastics, for example, can persist for up to 50 years, and because they are usually buoyant, they are widely distributed by ocean currents and winds. Many beaches are littered with plastic waste of various kinds, from land and ships. Along the beaches of the Mediterranean, about 70 per cent of the debris examined in one investigation was plastic: in the Pacific the figure exceeded 80 per cent. A major source of plastic debris is the fishing industry: UNEP has estimated that more than 150,000 tonnes of plastic fishing gear is lost (or discarded) in the oceans each year. Such debris is a nuisance to the tourist industry and can be a serious hazard to marine animals such as seals. A particularly serious new problem is posed by modern plastic drift nets, which are many kilometres in length and which, if they break free from a vessel, continue to float around the oceans entrapping and killing all manner of species.

Tables 2 and 3 give an account of the extent of human disturbance and a list of the international and marine protected areas. Both are, as is to be expected, much higher in the North relative to the South.

Some of the questions that arise are:

- what steps can be taken by the North to eliminate

and/or reduce sources of pollution;

- what steps can be taken in the South to minimise marine pollution consistent with the objective of eliminating poverty and raising standards of living;
- how can environmentally safe technologies be made available to the South;
- what institutional mechanisms can be developed to ensure the development and acquisition of such technologies by the South.

Marine resources-living

The seas are the source of resources like fish, drugs, seaweeds etc. which are good sources of protein, provide livelihood to millions and could be used for the cure of many diseases.

Marine fisheries, unlike terrestrial species, are not subject to the exclusive sovereignty of one state-except when they are located in internal waters or territorial seas-and generally migrate through a variety of jurisdictional zones in which foreign-flag vessels have certain rights.

Treaties that apply to conservation of migratory species in general or to trade in endangered species comprehend only such marine species of fish and mammals as are listed in their appendices, but many other marine species are increasingly susceptible to the threat of over-exploitation. Their conservation has, however, mainly been related to controlling access to fisheries and limiting catch. The rise in catches has been phenomenal: in 1938 the world fish catch was 15 million tonnes (m.t); by 1958 it had risen to 28 m.t.; by 1978 to 64 m.t.; by 1990 to 76 m.t. It is expected that by the year 2000 it may reach 100 m.t., at which point it is likely to level off. The reasons for this increase include rising populations, mostly located on coasts, the increase in the number of independent states, many wishing to enter or expand the fishing industry, but, above all, the enormous advances made in technological means of spotting, fishing, and processing fish. From use of rod and line and small and simple sailing boats operating close-inshore using simple nets and taking fish mainly for human consumption locally, developed sections of the industry have progressed to the highly sophisticated factory ships. Details of marine catches are at Table 4.

There is also a question of marine biodiversity. Over 90 per cent of the world's living biomass is contained in the oceans, which cover 71 per cent of the Earth's surface. Despite the predominance of marine ecosystems, only a small percentage of the oceans has been sampled. New marine phenomena, communities, and species are constantly being identified. In 1977, hydrothermal vents, or undersea hot springs, were discovered on the ocean floor. They support diverse communities, not through the

photosynthetic activity of primary producers such as plants or algae but through the chemical breakdown of hydrogen sulfide and other compounds to create energy. Marine biodiversity is so poorly known that we continue to discover even large vertebrates. In 1938, the coelacanth fish, long thought extinct, was found living in the Indian Ocean. In recent years, specimens of the megamouth shark, a 5-meter-long filter feeder, were caught.

How diverse are marine ecosystems? Recent discoveries have upped estimates of total marine species from 160,000 in 1971 to at least 10 million species, possibly more today. Although the marine environment may not rival its terrestrial counterpart in total number of species, it is more diverse in measures of uniqueness-of a total of 33 animal phyla, 32 are found in the ocean and 15 are exclusively marine-and of function-that is, for the variety of lifestyles its species has evolved to survive. For example, marine organisms ranging from zooplankton to baleen whales have adapted filter-feeding strategies to capture their food, a rare or nonexistent phenomenon on land. Marine ecosystems also exhibit more complex food webs.

Marine biodiversity provides a wealth of services. Photosynthetic phytoplankton lock up atmospheric carbon, a primary contributor to global warming. Fish and shellfish provide a plentiful supply of protein to human populations worldwide. Seaweed derivatives are used in the production of food, cosmetics, shampoo, detergent, and industrial lubricants. And because many marine organisms rely on chemical defences, the oceans are a promising source of new medicine. The same chemicals that protect species against predators may serve humanity in combating hypertension, cardiovascular problems, and viral and bacterial infections. The oceans could thus in the future provide many drugs and chemicals in combating many of the prevalent diseases.

Another untapped source is mariculture. The total marine fish, crustaceans and molluscs produced through mariculture was hardly 6 million tons per annum in 1989-90. This could increase manifold especially if allied to biotechnology. This is a fertile area for the South provided the developing countries can set up an appropriate scientific and technological infrastructure.

The issues that arise are:

- how to have sustainable development of marine resources both in the capture and aquaculture sectors
- what institutional, legal, financial, manpower development and technological steps are necessary in this regard

Marine resources-non living

The oceans have vast resources in the state of energy, minerals

and transportation systems. The present position regarding offshore oil and gas is at Table 5 and of shipping and transportation at Table 6. Obviously the proven reserves of oil and gas in the South will rise as more exploration takes place. But even as it is these is considerable scope for the developing nations to add to their resource base and economic welfare. The lack is of capital, technology and trained manpower. The issues that would arise would be similar to those that arise in the case of living resources.

Sustainable ocean development and the law of the sea

The Convention has parts and Articles relating to the protection and preservation of the marine environment (Part XII), conservation of living resources in the exclusive economic zone (Article 61), conservation and management of the living resources of the high seas (Part VII Section 2) and the co-operation of States bordering enclosed or semi-enclosed seas to co-ordinate the management, conservation, exploration and exploitation of the living resources of the sea (Article 123(a)).

The above provisions require the coastal states to promulgate laws and regulations in pursuance of the aims specified in the Convention and to co-operate both among themselves and with competent international organisations towards the achievement of these ends.

The questions that arise are:

- whether the actions taken by States so far can be considered to be adequate? If not what are the reasons for not taking adequate action? And what needs to be done to promote the taking of such action.
- whether the cooperation by States in the spheres of enforcement, conservation, science and technology, including the setting up of international, regional and subregional institutions can be considered to be adequate? If not, what more needs to be done.
- whether the specialised agencies of the United Nations (FAO, IMO, UNESCO/IOC, UNIDO, WMO) have been cooperating with the States, especially developing States, to further the prospects of sustainable development? If not, what needs to be done.

Ratification, implementation, and progressive development of the Convention at national, regional and global levels

The Convention has become law with effect from 16 November, 1994 but many states have not yet ratified it and many who have ratified it, have not yet implemented it.

The Convention mandates cooperation between States at national, regional and global levels in various areas including, inter alia,

- . sea lanes, and traffic separation schemes in straits (Article 41 (5))
- . navigational and safety aids and the prevention, reduction and control of pollution in straits (Article 43)
- . conservation of living resources, including highly migratory species, marine mammals and anadromous stocks (Articles 61, 64, 65 and 66)
- . conservation of living resources of the high seas (Articles 117 - 119)
- . enclosed and semi-enclosed seas (Article 123)
- . access for land-locked states to the sea (Articles 129, 132)
- . orderly, safe and rational management of the resources of the international area (Articles 150, 151 and 160)
- . protection and preservation of the marine environment (Articles 197, 199 - 202)
- . marine scientific research for peaceful purposes (Articles 242 - 244)
- . development and transfer of marine technology (Articles 266, 268 - 273)
- . establishment of regional marine scientific and technological research centres, particularly in developing States (Article 268)

The issue that needs to be tackled is the extent to which States have been cooperating in the above fields? What can be done to further such co-operation including the establishment of marine scientific and technological research centres?

States, especially developing countries, and their ability to fulfil their duties and enjoy their rights and generate their benefits under the Convention; Agenda 21; regional programmes

The Convention has vastly expanded the jurisdiction of coastal States. This gives to the States the opportunity to enjoy their rights and generate benefits. But at the same time the Convention also casts duties on the States - provision of safety and navigational aids, the establishment of search and rescue systems, establishment of total allowable catch, transfer of environmentally safe technology to developing countries,

providing assistance in the fields of marine science and research etc. At the same time the enjoyment of rights and the generation of benefits requires inter alia, inputs in the form of adequate surveillance systems, scientific research, exploration, marine technology, finance, trained manpower and integrated management systems - matters in which the developing countries in particular are lacking. The issue is a broad one and it is necessary to:

- specify the actions and policies necessary to remedy these deficiencies?
- indicate what needs to be done in this regard - by international organisations, the industrialised states, developing countries and the international funding agencies at the national, regional and international levels?

Secretary General's Agenda for Peace and Development

Ocean issues are integrally linked up with the issues of Peace and Development. Planning from the bottom up, participation of NGOs, women, youth and indigenous people, the eradication of poverty - these are all common goals.

Questions that will arise are:

- whether proper linkages can be established between the mechanisms and programmes for sustainable ocean development and the implementation of the Secretary-General's Agendas for Peace and for Development, and of the decisions of the Social Summit.

It is clear that problems of global governance, first pioneered in the Law of the Sea with the incredibly complex "Constitution for the Oceans," have matured considerably during the last decades. Ocean development and the Law of the Sea must now be considered in this broader context, as possible model for, and part of a new social, economic, and political order for the 21st century under a restructured United Nations.

Role of the Law of the Sea and Ocean Development in the process of restructuring the United Nations

There is talk of restructuring the United Nations so as to enable it to meet the challenges of the 21st Century. The Oceans cover 71 per cent of the globe but there is no adequate coverage of matters relating to the Oceans by the UN System. The broad issue is as to how the UN should be restructured to adequately deal with oceanic matters both at the international and regional levels.

Coastal Areas

	Length of Coastline (million km)	Maritime Area (million sq.km)		Population in Coastal Urban Agglomera- tions		% rise
		Shelf to 200 m depth	EEZ	1980	2000	
Africa	37.9	1.3	12.0	43.2	111.6	158%
Asia	163.6	6.8	20.3	281.8	487.1	73%
Oceania	52.5	2.5	14.2	13.4	18.1	35%
North & Central America	184.0	5.6	18.8	88.9	121.4	36%
South America	30.7	2.0	10.1	59.6	104.6	76%
Europe	69.6	2.0	14.7	111.8	130.0	16%
USSR (former)	47.9	1.2	4.5	18.4	24.0	30%
World	568.2	21.4	94.6	617.1	996.8	62%

Source: Table 22.6 World Resources, 1994-95, Oxford University Press, 1994

Coastal Areas

	Length of Coastline (kilometres)	Maritime Area (thousand sq. km)		Population in Coastal Urban Agglomerations (thousands)		% rise 1980-2000
		Shelf to 200m in depth	EEZ	1980	2000	
AFRICA	37,908	1,326	11,981	43,213	111,643	158%
Algeria	1,183	14	137	3,493	7,613	118%
Angola	1,600	67	606	1,132	3,603	218%
Benin	121	x	27	585	2,527	332%
Cameroon	402	11	15	854	2,802	228%
Cape Verde	965	x	789	125	360	188%
Comoros	340	x	249	89	240	170%
Congo	169	9	25	217	571	163%
Cote d'Ivoire	515	10	105	1,495	4,125	176%
Djibouti	314	x	6	211	455	116%
Egypt	2,450	37	174	4,246	8,020	89%
Equatorial Guinea	296	x	283	181	392	117%
Ethiopia	1,094	48	76	760	1,909	151%
Gabon	885	46	214	155	498	221%
Gambia, The	80	x	20	109	293	169%
Ghana	539	21	218	1,336	3,139	135%
Guinea	346	38	71	696	2,025	191%
Guinea-Bissau	274	x	150	174	353	103%
Kenya	536	14	118	489	2,020	313%
Liberia	579	20	230	465	1,195	157%
Libya	1,770	84	338	1,496	4,322	189%
Madagascar	4,828	180	1,292	570	2,032	156%
Mauritania	754	44	154	238	1,177	395%
Mauritius	177	92	1,183	410	565	38%
Morocco	1,835	62	278	5,543	11,472	107%
Mozambique	2,470	104	562	1,109	5,240	372%
Namibia	1,489	x	x	76	290	282%
Nigeria	853	46	211	4,383	14,135	222%
Reunion	201	x	x	279	479	72%
Senegal	531	32	206	1,378	3,077	123%
Seychelles	491	x	1,349	x	x	x
Sierra Leone	402	26	156	453	1,175	159%
Somalia	3,025	61	783	1,186	3,308	179%

South Africa	2,881	143	1,553	4,272	8,294	94%
Sudan	853	22	92	356	1,193	235%
Tanzania	1,424	41	223	1,750	6,945	297%
Togo	56	1	2	324	983	203%
Tunisia	1,143	51	86	2,476	4,540	83%
Zaire	37	1	1	102	276	71%
<u>ASIA</u>	163,61	6,769	20,258	281,83	487,1	73%
Bahrain	161	5	5	279	582	108%
Bangladesh	580	55	77	1,809	5,053	179%
Brunei	161	x	x	x	x	x
Cambodia	443	x	56	50	287	474%
China	14,500	870	1,356	38,936	66,510	71%
Cyprus	648	6	99	291	457	57%
Hong Kong	733	x	x	4,614	6,088	32%
India	12,700	452	2,015	37,317	78,255	110%
Indonesia	54,716	2,777	5,409	29,166	58,303	100%
Iran, Islamic Rep	3,180	107	156	872	1,480	70%
Iraq	58	1	1	0	0	x
Israel	273	4	23	2,826	4,110	45%
Japan	13,685	480	3,861	78,349	88,798	13%
Jordan	26	x	1	70	146	108%
Korea, Dem People's Rep	2,495	x	130	5,973	14,233	138%
Korea, Rep	2,413	245	x	16,911	29,292	73%
Kuwait	499	12	12	1,190	2,660	123%
Lebanon	225	4	23	2,016	3,135	56%
Macao	40	x	x	x	x	x
Malaysia	4,675	373	476	3,997	9,158	129%
Maldives	644	x	959	x	x	x
Myanmar	3,060	229	509	3,923	7,695	96%
Oman	2,092	61	562	62	302	338%
Pakistan	1,046	58	318	5,215	12,350	137%
Philippines	22,540	178	1,786	17,736	37,181	110%
Qatar	563	24	24	197	455	131%
Saudi Arabia	2,510	78	186	1,954	4,201	115%
Singapore	193	0	0	2,414	2,950	22%
Sri Lanka	1,340	27	517	2,433	3,496	44%
Syrian Arab Rep	193	x	10	266	853	21%
Thailand	3,219	258	86	5,698	13,541	138%
Turkey	7,200	50	237	9,928	17,028	72%

United Arab Emirates	1,448	59	59	824	1,517	84%
Viet Nam	3,444	328	722	5,585	14,317	156%
Yemen	1,906	25	584	927	2,660	187%
<u>OCEANIA</u>	52,488	2,514	14,171	13,41	18,117	35%
Australia	25,760	2,269	4,496	10,568	13,902	32%
Fiji	1,129	2	1,135	244	423	73%
New Zealand	15,134	243	4,833	2,279	2,832	24%
Papua New Guinea	5,152	x	2,367	322	960	98%
Solomon Islands	5,313	x	1,340	x	x	x
<u>NORTH & CENTRAL AMERICA</u>	184,950	5,632	18,759	88,896	121,410	36%
Antigua and Barbuda	153	x	x	x	x	x
Bahamas	3,542	86	759	x	x	x
Barbados	97	x	167	100	146	46%
Belize	386	x	x	x	x	x
Bermuda	103	x	x	x	x	x
Canada	90,908	2,903	2,939	3,066	3,852	26%
Cayman Islands	160	x	x	x	x	x
Costa Rica	1,290	16	259	1,050	2,258	115%
Cuba	3,735	x	363	6,628	8,942	35%
Dominica	148	x	20	x	x	x
Dominican Rep	1,288	18	269	2,787	5,797	108%
El Salvador	307	18	92	1,680	3,049	81%
Greenland	44,087	x	x	x	x	x
Grenada	121	x	27	x	x	x
Guadeloupe	306	x	x	142	196	38%
Guatemala	400	12	99	780	932	19%
Haiti	1,771	11	160	1,216	2,845	134%
Honduras	820	53	201	583	1,923	230%
Jamaica	1,022	40	298	1,016	1,689	66%
Martinique	290	2	x	217	279	29%
Mexico	9,330	442	2,851	6,529	9,501	46%
Nicaragua	910	73	160	1,166	2,837	143%
Panama	2,490	57	306	989	1,749	77%
Trinidad & Tobago	362	29	77	623	1,110	78%
United States	19,924	1,871	9,711	60,324	74,305	23%
<u>SOUTH AMERICA</u>	30,663	1,985	10,125	59,553	104,628	76%
Argentina	4,989	796	1,164	12,273	16,643	36%
Brazil	7,491	769	3,168	25,616	49,160	92%
Chile	6,435	27	2,288	3,212	4,856	51%

Colombia	2,414	68	603	2,926	3,926	34%
Ecuador	2,237	47	1,159	1,529	3,877	154%
French Guiana	378	x	x	x	x	x
Guyana	459	50	130	213	425	100%
Peru	2,414	83	1,027	6,975	14,339	106%
Suriname	386	x	101	140	216	54%
Uruguay	660	57	119	1,511	1,862	23%
Venezuela	2,800	88	364	5,158	9,324	81%
<u>EUROPE</u>	69,643	1,951	14,7	111,806	129,989	16%
Albania	418	5	12	622	1,140	83%
Belgium	64	3	3	1,968	2,097	7%
Bulgaria	354	12	33	857	1,182	38%
Denmark	3,379	69	1,464	3,980	4,201	6%
Finland	1,126	98	98	1,539	1,998	30%
France	3,427	148	3,493	9,380	10,692	14%
Germany	2,389	41	50	3,944	4,301	9%
Greece	13,676	25	505	5,252	6,559	25%
Iceland	4,988	134	867	186	231	24%
Ireland	1,448	126	380	1,766	2,469	40%
Italy	4,996	144	552	21,232	23,721	12%
Malta	140	13	66	303	327	8%
Netherlands	451	85	85	7,764	9,032	16%
Norway	5,832	103	2,025	2,324	3,033	31%
Poland	491	28	28	1,842	2,853	55%
Portugal	1,693	39	1,774	2,352	3,499	49%
Romania	225	24	32	573	866	51%
Spain	4,964	170	1,219	13,903	17,925	29%
Sweden	3,218	155	155	4,018	4,306	7%
United Kingdom	12,429	492	1,785	26,765	27,790	4%
Yugoslavia (former)	3,935	37	52	1,236	1,767	43%
<u>U.S.S.R. (former)</u>	47,892	1,249	4,490	18,372	23,975	30%
Azerbaijan	x	x	x	x	x	x
Estonia	1,393	x	x	x	x	x
Georgia	310	x	x	x	x	x
Kazakhstan	2,909	x	x	x	x	x
Latvia	531	x	x	x	x	x
Lithuania	108	x	x	x	x	x
Russian Federation	37,653	x	x	x	x	x
Turkmenistan	1,786	x	x	x	x	x
Ukraine	2,782	x	x	x	x	x

Uzbekistan	420	x	x	x	x	x
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Source: World Resources 1994-95, Table 22.6, Oxford University Press, New York.

Levels of Human Disturbance, 1993

Percentage of Total Land Area Classified as Regions of:

	Low Human Disturbance	Medium Human Disturbance	High Human Disturbance
Africa	49	35	16
Asia	30	38	32
North & Central America	56	21	23
South America	59	25	16
Europe	15	18	67
USSR (former)	57	16	28
Oceania	61	27	12
World	48	28	24

Source: Table 20.2, World Resources 1994-95, Oxford University Press, 1994

Levels of Human Disturbance, 1993

	Low Human Disturbance	Medium Human Disturbance	High Human Disturbance
AFRICA	49	35	16
Algeria	83	10	7
Angola	53	29	18
Benin	13	64	24
Botswana	57	42	1
Burkina Faso	12	67	21
Burundi	0	3	97
Cameroon	15	51	33
Central African Rep	46	44	10
Chad	54	40	6
Congo	57	36	8
Cote d'Ivoire	23	38	39
Djibouti	0	100	0
Egypt	79	15	6
Equatorial Guinea	84	0	16
Ethiopia	2	93	5
Gabon	81	2	5
Gambia, The	x	x	x
Ghana	2	56	42
Guinea	34	41	24
Guinea-Bissau	0	36	64
Kenya	43	45	12
Lesotho	0	81	19
Liberia	27	17	57
Libya	90	9	1
Madagascar	15	4	81
Malawi	4	37	59
Mali	67	31	3
Mauritania	92	8	0
Mauritius	x	x	x
Morocco	1	9	90
Mozambique	35	43	22
Namibia	76	21	4
Niger	75	24	1
Nigeria	3	54	43
Rwanda	0	34	66

Senegal	1	48	52
Sierra Leone	0	31	69
Somalia	32	65	3
South Africa	27	33	40
Sudan	32	59	9
Swaziland	0	50	50
Tanzania	41	43	16
Togo	0	58	42
Tunisia	18	56	26
Uganda	45	15	40
Zaire	45	40	15
Zambia	82	9	9
Zimbabwe	18	55	27
<u>ASIA</u>	30	38	32
Afghanistan	17	75	8
Bangladesh	0	19	81
Bhutan	29	58	13
Cambodia	22	21	57
China	32	35	33
India	2	42	55
Indonesia	52	10	38
Iran, Islamic Rep	6	83	11
Iraq	25	57	17
Israel	0	64	36
Japan	0	40	61
Jordan	47	41	12
Korea, Dem People's Rep	0	35	65
Korea Rep	0	18	82
Kuwait	33	54	13
Lao People's Dem Rep	28	6	66
Lebanon	0	13	87
Malaysia	41	19	40
Mongolia	60	35	6
Myanmar	7	47	45
Nepal	21	65	14
Oman	77	23	0
Pakistan	5	80	15
Philippines	3	10	87
Saudi Arabia	83	17	0
Singapore	x	x	x

Sri Lanka	0	60	40
Syrian Arab Rep	9	69	22
Thailand	8	19	73
Turkey	12	40	48
United Arab Emirates	90	10	0
Viet Nam	2	10	88
Yemen	34	66	0
<u>OCEANIA</u>	61	27	12
Australia	62	28	10
Fiji	x	x	x
New Zealand	27	4	69
Papua New Guinea	64	24	13
Solomon Islands	x	x	x
<u>NORTH & CENTRAL AMERICA</u>	56	21	23
Belize	36	0	64
Canada	95	5	2
Costa Rica	12	18	71
Cuba	2	14	84
Dominican Rep	18	16	65
El Salvador	0	50	50
Guatemala	25	12	62
Haiti	5	0	95
Honduras	32	4	63
Jamaica	0	25	75
Mexico	23	33	44
Nicaragua	32	13	56
Panama	99	0	1
Trinidad and Tobago	50	0	50
United States	25	36	39
<u>SOUTH AMERICA</u>	59	25	16
Argentina	37	47	17
Bolivia	78	18	4
Brazil	67	15	18
Chile	56	27	17
Colombia	69	11	20
Ecuador	47	12	41
Guyana	98	1	1
Paraguay	84	13	3
Peru	60	36	4
Suriname	91	3	6

Uruguay	0	76	24
Venezuela	0	79	21
EUROPE	15	18	67
Albania	0	28	72
Austria	0	39	61
Belgium	0	15	85
Bulgaria	0	37	63
Czechoslovakia (former)	1	28	72
Denmark	0	0	100
Finland	52	30	18
France	1	14	85
Germany	0	20	80
Greece	0	14	86
Hungary	1	7	93
Iceland	78	1	21
Ireland	0	0	100
Italy	0	16	84
Netherlands	0	2	98
Norway	66	21	13
Poland	0	13	87
Portugal	0	20	80
Romania	1	23	77
Spain	1	16	82
Sweden	57	17	26
Switzerland	0	35	65
United Kingdom	1	2	97
Yugoslavia (former)	1	24	76
U.S.S.R. (former)	57	16	28
Armenia	x	x	x
Azerbaijan	x	x	x
Belarus	x	x	x
Estonia	x	x	x
Georgia	x	x	x
Kazakhstan	x	x	x
Kyrgyzstan	x	x	x
Latvia	x	x	x
Lithuania	x	x	x
Moldova	x	x	x
Russian Federation	x	x	x
Tajikistan	x	x	x

Turkmenistan	x	x	x
Ukraine	x	x	x
Uzbekistan	x	x	x

International and Marine Protected Areas, 1993

Areas in Million Hectares

	World Heritage Sites		Biosphere Reserves		Wetlands of International Importance		Marine & coastal protected zones	
	No.	Area	No.	Area	No.	Area	No.	Area
Africa	28	28.1	43	20.6	53	4.2	43	9.6
Asia	16	1.7	39	13.2	49	2.4	189	14.0
North & Central America	22	21.5	71	98.2	64	15.5	214	135.8
South America	9	4.0	26	16.9	13	2.8	94	24.7
Europe	11	0.7	99	6.8	353	4.2	180	7.7
USSR (former)	1	0.1	22	10.9	13	3.0	22	4.9
Oceania	13	44.8	13	4.7	45	4.5	229	14.6
World	100	100.9	312	171.3	590	36.6	977	211.3

Source: Table 20.2, World Resources 1994-95, Oxford University Press, 1994

Niger	—	—	1	7,736	1	220	NA	NA
Nigeria	1	—	0	0	—	—	0	0
Rwanda	1	15	—	—	—	—	NA	NA
Senegal	3	1,094	2	929	4	100	4	81
Sierra Leone	—	—	—	—	—	—	0	0
Somalia	—	—	—	—	—	—	0	0
South Africa	—	—	—	—	12	228	13	152
Sudan	2	1,901	0	0	—	—	0	0
Swaziland	—	—	—	—	—	—	NA	NA
Tanzania	2	2,338	4	7,381	—	—	0	0
Togo	—	—	—	—	—	—	0	0
Tunisia	4	32	1	13	1	13	1	4
Uganda	1	220	0	0	1	15	0	0
Zaire	3	298	4	5,482	—	—	0	0
Zambia	—	—	1	4	2	333	NA	NA
Zimbabwe	—	—	2	1,095	—	—	NA	NA
ASIA	39	13,166	16	1,676	49	2,377	189	13,987
Afghanistan	—	—	0	0	—	—	NA	NA
Bangladesh	—	—	0	0	1	60	3	32
Bhutan	—	—	—	—	—	—	NA	NA
Cambodia	—	—	0	0	—	—	0	0
China	9	2,247	4	249	6	529	20	1,184
India	—	—	5	281	6	193	14	474
Indonesia	6	1,482	2	298	1	163	68	8,941
Iran, Islamic Rep	9	2,610	0	0	18	1,358	3	725
Iraq	—	—	0	0	—	—	0	0
Israel	—	—	—	—	—	—	1	31
Japan	4	116	0	0	4	10	30	637
Jordan	—	—	0	0	1	7	0	0
Korea, Dem People's Rep	1	132	—	—	—	—	0	0
Korea, Rep	1	37	0	0	—	—	3	285
Kuwait	—	—	—	—	—	—	0	0
Lao People's Dem Rep	—	—	0	0	—	—	NA	NA
Lebanon	—	—	0	0	—	—	0	0
Malaysia	—	—	0	0	—	—	9	52
Mongolia	1	5,300	0	0	—	—	NA	NA
Myanmar	—	—	—	—	—	—	0	0
Nepal	—	—	2	208	1	18	NA	NA
Oman	—	—	0	0	—	—	1	1
Pakistan	1	31	0	0	9	21	1	16

Philippines	2	1,174	0	0	—	—	5	31
Saudi Arabia	—	—	0	0	—	—	2	475
Singapore	—	—	—	—	—	—	0	0
Sri Lanka	2	9	1	9	1	6	6	303
Syrian Arab Rep	—	—	0	0	—	—	0	0
Thailand	3	26	1	622	—	—	10	625
Turkey	—	—	1	10	—	—	3	114
United Arab Emirates	—	—	—	—	—	—	0	0
Viet Nam	—	—	0	0	1	12	2	34
Yemen	—	—	0	0	—	—	0	0
<u>OCEANIA</u>	13	4,745	13	44,848	45	4,519	229	14,547
Australia	12	4,743	10	42,168	40	4,481	184	13,035
Fiji	—	—	0	0	—	—	1	4
New Zealand	—	—	2	2,677	5	38	32	1,386
Papua New Guinea	—	—	—	—	—	—	0	0
Solomon Islands	—	—	—	—	—	—	0	0
<u>NORTH & CENTRAL AMERICA</u>	71	98,150	22	21,541	64	15,515	214	135,781
Belize	—	—	0	0	—	—	x	x
Canada	6	1,050	6	14,710	30	13,016	48	7,106
Costa Rica	2	729	1	585	2	30	7	194
Cuba	4	324	0	0	—	—	6	227
Dominican Rep	—	—	0	0	—	—	7	270
El Salvador	—	—	0	0	—	—	0	0
Guatemala	2	1,236	1	58	1	48	3	13
Haiti	—	—	0	0	—	—	0	0
Honduras	1	500	1	500	—	—	1	350
Jamaica	—	—	0	0	—	—	0	0
Mexico	6	1,288	1	528	1	47	11	1,119
Nicaragua	—	—	0	0	—	—	0	0
Panama	1	597	2	804	1	81	6	898
Trinidad & Tobago	—	—	—	—	—	—	2	3
United States	44	22,335	10	4,357	11	1,192	107	54,317
<u>SOUTH AMERICA</u>	26	16,866	9	4,043	13	2,820	94	24,717
Argentina	5	2,410	2	655	3	82	7	1,499
Bolivia	3	435	0	0	1	5	NA	NA
Brazil	1	4,937	1	170	—	—	20	2,032
Chile	8	2,417	0	0	1	5	32	10,050
Colombia	3	2,514	0	0	—	—	9	615
Ecuador	2	1,446	2	1,038	2	90	5	8,975
Guyana	—	—	0	0	—	—	0	0

Paraguay	—	—	0	0	—	—	NA	NA
Peru	3	2,507	4	2,180	3	2,416	4	710
Suriname	—	—	—	—	1	12	5	128
Uruguay	1	200	0	0	1	200	1	3
Venezuela	—	—	0	0	1	10	11	704
<u>EUROPE</u>	99	6,765	11	661	353	4,248	180	7,700
Albania	—	—	0	0	—	—	5	28
Austria	4	28	—	—	7	103	NA	NA
Belgium	—	—	—	—	6	10	0	0
Bulgaria	17	25	2	41	4	2	0	0
Czechoslovakia (former)	9	563	0	0	8	17	NA	NA
Denmark	—	—	0	0	27	734	3	12
Finland	1	350	0	0	11	101	0	0
France	6	576	1	12	8	423	27	849
Germany	12	1,259	0	0	31	661	14	732
Greece	2	9	0	0	11	107	13	84
Hungary	5	129	0	0	13	110	0	0
Iceland	—	—	—	—	2	58	5	509
Ireland	2	9	0	0	21	13	0	0
Italy	3	4	0	0	46	57	18	211
Netherlands	1	260	—	—	15	313	10	54
Norway	1	1,555	0	0	14	16	12	3,508
Poland	4	161	1	5	5	7	4	73
Portugal	1	—	0	0	2	31	8	132
Romania	3	614	1	547	1	647	0	0
Spain	11	716	1	4	17	102	9	75
Sweden	1	97	0	0	30	383	5	12
Switzerland	1	17	0	0	8	7	NA	NA
United Kingdom	13	44	2	1	57	215	35	1,194
Yugoslavia (former)	2	350	3	51	7	131	12	227
<u>U.S.S.R. (former)</u>	22	10,930	1	88	13	2,993	22	4,925
Armenia	x	x	x	x	x	x	x	x
Azerbaijan	x	x	x	x	1	133	x	x
Belarus	1	76	1	88	x	x	x	x
Estonia	1	1,560	x	x	1	49	x	x
Georgia	x	x	x	x	x	x	x	x
Kazakhstan	x	x	x	x	3	1,238	x	x
Kyrgyzstan	1	24	x	x	x	x	x	x
Latvia	x	x	x	x	x	x	x	x
Lithuania	x	x	0	0	x	x	x	x

Moldova	x	x	x	x	x	x	x	x
Russian Federation	14	9,029	0	0	3	1,168	x	x
Tajikistan	x	x	0	0	1	6	x	x
Turkmenistan	1	35	x	x	1	189	x	x
Ukraine	3	160	0	0	3	211	x	x
Uzbekistan	1	48	x	x	x	x	x	x

Marine Fisheries - Annual Catch 1989-91
Yield and Estimated Potential

All figures in million metric tons

	Marine Fish		Cephalopods & Crustaceans		Total	
	Annual Catch	Poten- tial	Annual Catch	Poten- tial	Annual Catch	Poten- tial
Atlantic Ocean	18.3	25.5- 33.3	1.9	2.7- 3.9	20.2	28.2- 37.2
Pacific Ocean	45.0	31.0- 45.1	3.3	3.1- 4.4	48.3	34.1- 49.5
Indian Ocean	5.4	4.7- 7.1	0.6	0.6- 0.9	6.0	5.3- 8.0
Mediterranean & Black Sea	1.2	1.1- 1.4	0.2	0.2	1.4	1.2- 1.6
Antarctic	0.1	NA	0.3	NA	0.4	NA
Arctic	0.0	NA	0.0	NA	0.0	NA
World	69.9	62.3- 86.9	6.2	6.5- 9.3	76.1	68.8- 96.2

Source: Table 22.4, World Resources 1994-95, Oxford University Press, 1994

Coastal Resources - Offshore Oil and Gas

	Annual Production				Proven Reserves	
	Oil (million tons)		Gas (billion cubic metres)		Oil (billion tons)	Gas (trill- ion cubic metres)
	1982	1992	1982	1992	1992	1992
Africa	63.8	117.7	6.1	2.1	3.5	4.0
Asia	229.4	309.3	19.5	73.7	18.8	6.8
Oceania	17.8	25.0	7.4	20.0	0.3	0.9
North & Central America	143.6	128.4	156.5	120.6	6.7	3.7
South America	61.2	73.4	1.1	13.2	1.7	1.0
Europe	132.8	181.3	87.3	117.2	5.2	5.0
USSR (former)	8.8	30.9	14.7	10.4	0.3	-
World	657.4	866.0	292.6	357.2	36.5	21.4

Coastal Resources - Offshore Oil and Gas

	Annual Production				Proven Reserves	
	Oil (thousand tons)		Gas (million cubic metres)		Oil (million tons)	Gas (billion cubic metres)
	1982	1992	1982	1992	1992	1992
AFRICA	63,792	117,677	6,080	2,119	3,479	3,957
Algeria	0	0	0	0	0	0
Angola	4,365	19,422	0	486	241	57
Benin	0	0	0	0	117	0
Cameroon	0	7,470	0	52	76	110
Cape Verde	0	0	0	0	0	0
Comoros	0	0	0	0	0	0
Congo	4,316	7,022	0	72	150	76
Cote d'Ivoire	467	0	0	41	3	100
Djibouti	0	0	0	0	0	0
Egypt	28,386	0	755	0	367	142
Equatorial Guinea	0	996	0	0	1	3
Ethiopia	0	0	0	0	0	0
Gabon	5,105	11,952	81	0	190	11
Gambia, The	0	0	0	0	0	0
Ghana	65	598	76	0	4	0
Guinea	0	0	0	0	0	0
Guinea-Bissau	0	0	0	0	0	0
Kenya	0	0	0	0	0	0
Liberia	0	0	0	0	0	0
Libya	0	6,972	0	0	109	3
Madagascar	0	0	0	0	0	0
Mauritania	0	0	0	0	0	0
Mauritius	0	0	0	0	0	0
Morocco	0	0	0	0	0	0
Mozambique	0	0	0	0	0	0
Namibia	0	0	0	0	0	0
Nigeria	18,498	61,254	5,168	1,468	2,040	3,398
Reunion	0	0	0	0	0	0
Senegal	0	0	0	0	136	0
Seychelles	0	0	0	0	0	0
Sierra Leone	0	0	0	0	0	0
Somalia	0	0	0	0	0	0
South Africa	0	0	0	0	0	0

Sudan	0	0	0	0	0	0
Tanzania	0	0	0	0	0	28
Togo	0	0	0	0	0	0
Tunisia	1,520	1,245	0	0	34	0
Zaire	1,070	747	0	0	11	28
ASIA	229,432	309,308	19,492	73,691	18,784	6,805
Bahrain	0	0	0	0	13	0
Bangladesh	0	0	0	0	0	0
Brunei	6,026	7,470	8,786	7,442	137	212
Cambodia	0	0	0	0	14	99
China	0	2,241	0	496	560	120
Cyprus	0	0	0	0	0	0
Hong Kong	0	0	0	0	0	0
India	12,799	35,856	1,457	6,202	1,047	430
Indonesia	26,677	57,270	5,685	7,236	286	1,447
Iran, Islamic Rep	0	23,904	0	2,791	408	453
Iraq	0	0	0	0	0	0
Israel	0	0	0	0	0	0
Japan	43	697	286	72	1	0
Jordan	0	0	0	0	0	0
Korea, Dem People's Rep	0	0	0	0	0	0
Korea, Rep	0	0	0	0	0	0
Kuwait	0	0	0	0	0	0
Lebanon	0	0	0	0	0	0
Macao	0	0	0	0	0	0
Malaysia	15,050	35,308	0	18,606	530	1,529
Maldives	0	0	0	0	0	0
Myanmar	0	0	0	0	109	54
Oman	0	797	0	413	11	28
Pakistan	0	0	0	0	0	0
Philippines	822	1,245	0	0	39	57
Qatar	8,341	9,064	0	1,437	0	0
Saudi Arabia	119,122	78,684	0	6,099	7,888	1,331
Singapore	0	0	0	0	0	0
Sri Lanka	0	0	0	0	0	0
Syrian Arab Rep	0	0	0	0	0	0
Thailand	0	1,992	0	7,029	65	357
Turkey	0	0	0	0	0	7
United Arab Emirates	40,553	49,800	3,227	7,598	7,072	396
Viet Nam	0	4,980	0	8,269	544	283

Yemen	0	0	0	0	60	0
<u>OCEANIA</u>	17,773	24,950	7,370	19,950	313	935
Australia	17,337	24,153	5,685	16,952	258	538
Fiji	0	0	0	0	0	0
New Zealand	435	797	1,685	2,998	18	82
Papua New Guinea	0	0	0	0	37	314
Solomon Islands	0	0	0	0	0	0
<u>NORTH & CENTRAL AMERICA</u>	143,613	128,384	156,517	120,641	6,659	3,674
Antigua and Barbuda	0	0	0	0	0	0
Bahamas	0	0	0	0	0	0
Barbados	0	0	0	0	0	0
Belize	0	0	0	0	0	0
Bermuda	0	0	0	0	0	0
Canada	0	498	0	0	162	298
Cayman Islands	0	0	0	0	0	0
Costa Rica	0	0	0	0	0	0
Cuba	0	0	0	0	0	0
Dominica	0	0	0	0	0	0
Dominican Rep	0	0	0	0	0	0
El Salvador	0	0	0	0	0	0
Greenland	0	0	0	0	0	0
Grenada	0	0	0	0	0	0
Guadeloupe	0	0	0	0	0	0
Guatemala	0	0	0	0	0	0
Haiti	0	0	0	0	0	0
Honduras	0	0	0	0	0	0
Jamaica	0	0	0	0	0	0
Martinique	0	0	0	0	0	0
Mexico	81,604	85,656	9,261	11,370	5,712	1,926
Nicaragua	0	0	0	0	0	0
Panama	0	0	0	0	0	0
Trinidad & Tobago	6,731	6,922	5,047	5,799	78	261
United States	55,278	35,308	142,208	103,471	707	1,189
<u>SOUTH AMERICA</u>	61,233	73,405	1,074	13,179	1,727	953
Argentina	0	0	0	0	31	57
Brazil	8,810	26,145	49	7,236	631	2
Chile	0	847	0	569	54	65
Colombia	0	0	1,024	0	10	40
Ecuador	0	0	0	0	5	20
French Guiana	0	0	0	0	0	0

Guyana	0	0	0	0	0	0
Peru	1,323	3,685	0	0	31	4
Suriname	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0
Venezuela	51,101	42,728	0	5,375	966	765
EUROPE	132,799	181,272	87,263	117,209	5,152	5,024
Albania	0	0	0	0	67	0
Belgium	0	0	0	0	0	0
Bulgaria	0	0	0	0	0	0
Denmark	1,693	6,474	0	3,101	35	93
Finland	0	0	0	0	0	0
France	0	0	0	0	0	0
Germany	0	398	0	0	11	3
Greece	0	299	0	0	4	11
Iceland	0	0	0	0	0	0
Ireland	0	0	1,551	2,067	0	23
Italy	498	3,685	10,523	3,618	8	227
Malta	0	0	0	0	0	0
Netherlands	0	2,191	11,071	17,573	18	283
Norway	26,606	89,640	25,842	32,044	2,364	3,088
Poland	0	0	0	0	27	0
Portugal	0	0	0	0	0	0
Romania	0	697	0	0	18	0
Spain	1,413	697	0	920	1	7
Sweden	0	0	0	0	0	0
United Kingdom	102,588	77,190	38,277	57,886	2,598	1,289
Yugoslavia (former)	0	0	0	0	1	0
U.S.S.R. (former)	8,815	30,926	14,678	10,337	315	17
Azerbaijan	x	19,920	x	0	272	0
Estonia	x	0	x	0	0	0
Georgia	x	0	x	0	0	0
Kazakhstan	x	0	x	0	0	0
Latvia	x	0	x	0	0	0
Lithuania	x	0	x	0	0	0
Russian Federation	x	10,558	x	10,337	41	17
Turkmenistan	x	398	x	0	2	0
Ukraine	x	50	x	0	0	0
Uzbekistan	x	0	x	0	0	0

Coastal Resources - Shipping
1988-90

Million Metric Tons

	Average Annual Volume of Goods Loaded & Unloaded		
	1988-90		
	Crude Petroleum	Petroleum Products	Dry Cargo
Africa	382.5	44.3	285.7
Asia	947.2	306.5	1,392.6
Oceania	14.4	12.0	286.6
North & Central America	370.4	151.2	800.7
South America	111.6	41.0	302.1
Europe	562.0	296.8	1,302.5
USSR (former)	69.9	51.2	123.0
World	2,458.0	903.0	4,493.2

Coastal Resources - Shipping
1988-1990

Thousand Metric Tons

	Average Annual Volume of Goods Loaded & Unloaded		
	1988-1990		
	Crude Petroleum	Petroleum Products	Dry Cargo
AFRICA	382,522	44,255	285,737
Algeria	29,110	24,409	15,266
Angola	18,438	376	2,749
Benin	31	429	743
Cameroon	8,098	1,264	3,704
Cape Verde	x	x	x
Comoros	x	x	115
Congo	6,172	246	3,519
Cote d'Ivoire	1,849	1,670	6,422
Djibouti	x	652	684
Egypt	146,855	4,204	25,351
Equatorial Guinea	x	x	165
Ethiopia	763	476	2,444
Gabon	10,341	217	607
Gambia, The	x	24	348
Ghana	1,149	243	2,922
Guinea	x	132	11,451
Guinea-Bissau	x	26	285
Kenya	2,173	109	5,401
Liberia	462	77	18,375
Libya	48,241	4,545	7,242
Madagascar	x	398	1,135
Mauritania	x	107	9,862
Mauritius	x	321	1,992
Morocco	4,910	140	28,990
Mozambique	515	121	5,098
Namibia	x	x	x
Nigeria	73,373	1,018	10,673
Reunion	x	203	845
Senegal	177	367	4,770
Seychelles	x	118	148
Sierra Leone	189	16	1,745
Somalia	498	48	969
South Africa	20,842	286	88,307

Sudan	1,294	87	3,460
Tanzania	688	742	2,532
Togo	x	124	1,458
Tunisia	4,330	937	13,762
Zaire	2,024	50	1,816
ASIA	947,243	306,454	1,392,641
Bahrain	x	12,658	4,452
Bangladesh	1,207	889	8,546
Brunei	8,579	5,174	1,266
Cambodia	x	x	109
China	30,909	4,993	120,377
Cyprus	545	502	4,586
Hong Kong	x	7,654	55,646
India	18,597	5,841	45,445
Indonesia	46,975	26,235	32,817
Iran, Islamic Rep	97,160	4,629	13,291
Iraq	x	x	x
Israel	6,463	1,412	15,593
Japan	189,707	81,238	499,734
Jordan	x	x	17,619
Korea, Dem People's Rep	3,258	1,034	1,812
Korea, Rep	35,995	9,678	152,628
Kuwait	41,372	17,319	8,288
Lebanon	23	205	1,058
Macao	x	316	4,354
Malaysia	22,229	14,164	53,703
Maldives	x	5	94
Myanmar	x	55	1,423
Oman	31,752	192	2,401
Pakistan	4,732	2,891	14,633
Philippines	9,690	1,222	26,966
Qatar	15,602	785	2,662
Saudi Arabia	141,697	38,104	44,591
Singapore	44,854	44,900	64,088
Sri Lanka	1,507	438	10,089
Syrian Arab Rep	16,233	3,287	6,070
Thailand	7,211	2,317	47,178
Turkey	84,837	8,130	40,205
United Arab Emirates	65,491	5,001	13,494
Viet Nam	x	347	1,461

Yemen	4,002	1,750	3,523
<u>OCEANIA</u>	14,395	12,046	286,622
Australia	10,974	8,328	260,610
Fiji	x	497	691
New Zealand	3,421	984	14,885
Papua New Guinea	x	897	3,339
Solomon Islands	x	34	601
<u>NORTH & CENTRAL AMERICA</u>	370,382	151,238	800,718
Antigua and Barbuda	x	62	83
Bahamas	10,524	3,702	3,222
Barbados	107	51	573
Belize	x	106	306
Bermuda	x	363	254
Canada	16,623	8,981	201,526
Cayman Islands	1,357	36	117
Costa Rica	464	336	2,662
Cuba	5,850	3,821	14,244
Dominica	x	5	93
Dominican Rep	1,630	785	4,358
El Salvador	716	17	1,140
Greenland	x	187	392
Grenada	x	22	71
Guadeloupe	x	370	1,221
Guatemala	683	204	4,232
Haiti	x	11	838
Honduras	397	204	1,849
Jamaica	1,210	1,203	10,122
Martinique	231	282	876
Mexico	71,817	7,377	19,833
Nicaragua	495	183	1,280
Panama	1,192	441	1,939
Trinidad & Tobago	6,518	2,670	5,638
United States	237,010	112,707	519,921
<u>SOUTH AMERICA</u>	111,570	41,009	302,118
Argentina	260	3,336	32,367
Brazil	31,467	3,607	184,934
Chile	2,462	230	17,333
Colombia	9,442	6,901	15,231
Ecuador	7,423	1,280	3,472
French Guiana	x	137	273

Guyana	x	474	1,919
Peru	1,175	857	12,504
Suriname	x	615	6,185
Uruguay	975	9	1,123
Venezuela	58,367	23,564	26,768
<u>EUROPE</u>	562,016	296,790	1,302,488
Albania	x	71	1,673
Belgium	20,598	20,609	110,975
Bulgaria	10,659	871	15,311
Denmark	6,303	5,888	32,753
Finland	10,723	6,880	39,495
France	68,135	40,443	110,786
Germany	x	17,695	134,357
Greece	15,407	4,590	26,680
Iceland	x	557	2,407
Ireland	3,405	1,585	18,127
Italy	88,893	46,074	100,510
Malta	x	564	1,546
Netherlands	87,630	47,442	226,503
Norway	44,653	5,779	36,468
Poland	1,383	3,798	42,436
Portugal	7,750	2,833	16,601
Romania	16,192	6,947	21,831
Spain	47,932	22,958	89,717
Sweden	15,547	16,462	73,950
United Kingdom	86,127	41,179	176,820
Yugoslavia (former)	8,827	3,044	22,946
<u>U.S.S.R. (former)</u>	69,858	51,202	122,961
Azerbaijan	x	x	x
Estonia	x	x	x
Georgia	x	x	x
Kazakhstan	x	x	x
Latvia	x	x	x
Lithuania	x	x	x
Russian Federation	x	x	x
Turkmenistan	x	x	x
Ukraine	x	x	x
Uzbekistan	x	x	x

Matters to be taken into consideration when
addressing issues raised in the
background paper

Coastal Zone.

Issue 1: What are the scientific and technological parameters that need to be addressed in this connection.

Some of these could be:

- . Monitoring changes in the marine environment and its living resources
- . Remote sensing
- . Building standards, building codes for coastal areas, ways of combating likely sea rise
- . Energy efficiency: reducing greenhouse gas emissions using renewable sources like wind energy, wave energy, biomass conversion, OTEC etc.
- . Waste water treatment including recycling
- . Treatment of solid wastes including recycling
- . Conversion / replacement of obsolete, polluting technologies;
- . Technology acquisition including selection and development
- . Sustainable fisheries management
- . Aquaculture mariculture development for
 - * food
 - * pharmaceutical and chemical products
- . Post-harvest conservation methods
- . Genetic engineering and its impact on ocean resources
- . Sustainable use of nonliving resources (sand and gravel, coal, tin, etc.)
- . Port management including management of new shipping technologies
- . Management of tourist activities
- . Environmental impact assessment using state-of-the-art technologies
- . Risk management
- . Disaster preparedness
- . Environmental accounting
- . Cost-benefit analysis in a sustainable development matrix

- . Deficiencies in the country/region regarding the above

- . Suggested remedial measures for overcoming the identified deficiencies including, inter alia:
 - . development of human resources
 - . access to environmentally safe technologies
 - . funding

Some strategies for the above could be:

- . Training programmes

- . Establishing data dissemination mechanisms
- . Cooperation with competent international organisations
- . Joint ventures for technology development

Issue 2: Whether integrated institutional mechanisms exist to ensure sustainable development of the marine environment.

Some matters to be taken note of in addressing the above issue would be:

- . Indigenous and traditional ownership patterns, management, and conservation systems
- . Fisheries cooperatives
- . Women's organisations
- . Scientific institutions
- . NGOs
- . Port authorities
- . Local authorities
- . Municipalities and their links with national governments
- . Municipalities-national, regional and international cooperation
- . Regional cooperation in marine science: data collection, dissemination, utilisation
- . Regional technological cooperation: acquisition and development strategies
- . Surveillance and enforcement: national and regional systems
- . Existing institutional models for integrated coastal and marine management
- . Adaptation of such models to different economic, social and political infrastructures.

Implementation of Programme 1 of Chapter 17

Programme 1: Integrated management and sustainable development of coastal areas, including exclusive economic zones.

The main parameters of programme 1 concern:

- . Possibilities of an integrated policy and decision-making process...to promote compatibility and balance of uses.
- . Identification of existing and projected uses of coastal areas and their interactions.
- . Concentration on well-defined coastal management related issues.
- . Need for applying preventive and precautionary approaches in project planning and implementation, including prior assessment and systematic observation of the impacts of major projects.
- . Possibility of promoting the development and

application of methods, such as national resource and environmental accounting, that reflect changes in value resulting from uses of coastal and marine areas...

- . Methods of providing access to relevant information and opportunities for consultation and participation in planning and decision-making at appropriate levels.

Issue 3: What environmentally sound technologies are required:

Areas where technologies are necessary could be for:

- . Monitoring of the marine environment
- . Selecting appropriate fishing gear
- . Fish processing
- . Oil pollution combatting
- . Sewage treatment & recycling
- . Garbage recycling and re-usage
- . Controlling emissions of greenhouse gases.

Marine Pollution.

Implementation of Programme 2 of Chapter 17 of Agenda 21

Programme 2: Marine environmental protection.

The main parameters of programme 2 of Agenda 21 concern:

- . Prevention, reduction and control of degradation of the marine environment so as to maintain and improve its life support and productive capacities (General Objective).
- . Application of preventive, precautionary and anticipatory approaches to avoid degradation and reduction of ...adverse effects.
- . Ensuring prior assessment of activities which may have significant adverse impacts...
- . Integration of protection of the marine environment into relevant general environmental, social and economic development policies.
- . Developing of economic incentives...to apply clean technologies...the internalisation of environmental costs such as the polluter pays principle...
- . Improvement of the living standards of coastal populations, particularly in the developing countries...

Issue 4: What steps can be taken in the South to minimise marine pollution consistent with the objective of eliminating poverty and raising standards of living?

A possible solution could be the taking up of dual-purpose or multi-purpose projects, under integrated management, serving both purposes simultaneously, such as:

- . Energy efficiency enhancement
- . Bio-gas production from sewage
- . Garbage recycling
- . Integrated industrial management, where one factory utilizes the waste products of another, following the biological pattern of aquatic polycultures
- . Slum clearance, sewage and sewage treatment facilities, which improve public health and living standards and reduce pollution
- . Improved public education, which serves both purposes.

Issues 5 & 6: How can environmentally safe technologies be made available to the South? What institutional mechanisms can be developed to ensure the development and acquisition of such technologies by the South?

National educational measures

- . Building national infrastructure
- . Training of trainers

Establishment of Regional Centres for Marine Science and Technology (implementation of Articles 276 and 277 of the Law of the Sea Convention)

Cooperation with competent international organisations (UNIDO, IOC/UNESCO, FAO, UNEP, IMO, etc.)

Joint ventures with private sector.

Marine Resources - Living and Nonliving

Issue 7: How to have sustainable development of marine resources both in the capture and aquaculture sectors

Stock assessment

Environmental impact

- . Pollution
- . Habitat destruction
- . Temperature and/or current changes
- . Overfishing, national, regional
- . Interaction of natural and man-made causes of depletion
- . Interaction between capture fisheries and aquaculture
- . Sustainability, public health, trade
- . Straddling stocks management
- . Management measures, national, regional.

Issue 8: What institutional, legal, financial, manpower development and technological steps are necessary in this regard?

Linkages between local, national, regional management of the manpower, technology development and funding systems.

Implementation of Programme 3 and 4 of Chapter 17 of Agenda 21

Programme 3: Sustainable use and conservation of marine living resources of the high seas.

- . Sustainable use and conservation of marine living resources of the high seas.
- . Development and increase in the potential of marine living resources to meet human nutritional needs and social, economic and development goals.
- . Maintenance or restoration of populations of marine species to levels which can support maximum sustainable yield levels...
- . Promotion of the development and use of selective fishing gear and practices that minimize waste...
- . Ensuring effective fisheries monitoring and enforcement...
- . Protecting and restoring endangered marine species.
- . Preserving habitats and other ecologically sensitive areas.
- . Promoting scientific research with respect to the marine living resources in the high seas.

Programme 4: Sustainable use and conservation of marine living resources under national jurisdiction.

- . Sustainable use and conservation of marine living resources under national jurisdiction.
- . ..Obtaining full social and economic benefits from sustainable utilization of marine living resources...(General Objective).
- . ..Meeting human nutritional needs and social, economic and development goals...
- . Taking into account traditional knowledge and interests of local communities, small-scale artisanal fishermen and indigenous people in development and management programmes.
- . Maintaining or restoring populations of marine species at levels which can produce the maximum sustainable yield...
- . Promoting ... selective fishing gear and practices that minimize waste of catch...
- . Protecting and restoring endangered marine species.
- . Preserving rare or fragile ecosystems ...habitats and other ecologically sensitive areas.

Sustainable Ocean Development, the Law of the Sea and the Secretary General's Agenda

Issue 9: Whether the actions taken by States so far can be considered to be adequate? If not, what are the reasons for not taking adequate action? And what needs to be done to promote the taking of such action?

- . Information; awareness enhancement; role of media; role of NGOs
- . Education and training; development of human resources, from pre-school to adult education; curriculum development; leadership seminars involving government and private sector.
- . Building of national infrastructure.

Issue 10: Whether the cooperation by States in the spheres of enforcement, conservation, science and technology, including the setting up of international, regional and subregional institutions can be considered to be adequate? If not, what more needs to be done?

- . Improvement of coordination and integration of policies of existing regional institutions, regional offices of global institutions, NGOs;
- . Improvement of interaction with continental regional organisations and institutions (U.N. Regional Commissions; Regional Banks).
- . Marine-centres and organisations provide excellent mechanisms for inter-regional and inter-continental co-operation (e.g., the Mediterranean, between Europe, Africa, and Asia; the Indian Ocean, between Africa and Asia, etc.)

Issue 11: Whether the specialised agencies of the United Nations (FAO, IMO, UNESCO/IOC, UNEP, UNIDO, WMO) have been cooperating with States, especially developing States, to further the prospects of sustainable development? If not, what needs to be done?

Issues 12 & 13: Identify the deficiencies that do not enable developing countries to enjoy their rights under the LOS Convention and indicate what needs to be done.

Issue 14: Whether proper linkages can be established between the mechanisms for sustainable ocean development and the Secretary General's agendas for peace and development.

- . Institutional constraints: antiquated sectoralised structures
- . Financial constraints, need for new sources for financing projects
- . Intellectual constraints: Lack of a generally acceptable concept of sustainable development and its implications. Need for policy research.
- . Technological constraints
- . Manpower constraints
- . Mobilising new sources of funding.

Implementation of Programme 6 of Chapter 17 of Agenda 21.

- Programme 6: Strengthening international, including regional, cooperation and coordination.
- . Strengthening international, including regional, cooperation and coordination.
 -Promoting institutional arrangements...to support the implementation of programme areas in Chapter 17. (General Objective)
 - . Integrating relevant sectoral activities...
 - . Promoting effective information exchange and...institutional linkages...
 - . Promoting within the UN system regular intergovernmental review and consideration of environment and development issues with respect to marine and coastal areas.
 - . Promoting the effective operation of coordinating mechanisms...in the UN system...on environment/development in marine and coastal areas and links with international development bodies.

Financial Requirements.

In preparation for the Rio Conference, the UNCED Secretariat made some rather detailed calculations of the costs for the implementation of Agenda 21 as well as the funding from international sources that should be available to assist developing countries in this process. Since there was no agreement on the figures, they were omitted in the final version. A number of factors involved, in fact, simply cannot be quantified, and, costs of programmes are overlapping. The figures are nevertheless indicative of orders of magnitude. For Chapter 17 they are as follows:

Average annual cost (1993-2000)

Prog 1: Integrated coastal management	\$ 6,000 million
Prog 2: Marine environmental protection	\$ 200 million
Prog 3: Living resources - high seas	\$ 12 million
Prog 4: Living resources - national jurisdiction	\$ 6,000 million
Prog 5: Critical uncertainties in ocean-air interface	\$ 750 million
Prog 6: International cooperation	\$ 50 million
Prog 7: Islands development	\$ 130 million
Total annual cost	\$ 13,142 million

Dividing these costs among approximately 180 States, the average cost per State would be \$ 73 million.

Funding available from international sources was estimated as follows:

Average annual cost (1993-2000)

Prog 1: Integrated coastal management	\$	50 million
Prog 2: Marine environmental protection	\$	200 million
Prog 3: Living resources - high seas	\$	12 million
Prog 4: Living resources - national jurisdiction	\$	60 million
Prog 5: Critical uncertainties in ocean-air interface	\$	480 million
Prog 6: International cooperation	\$	50 million
Prog 7: Islands development	\$	50 million
Total annual cost	\$	902 million

Dividing by approximately 120 developing countries, the average annual contribution from international funding sources would be roughly \$ 7.5 million. Net total annual cost per average developing country would be in the order of \$ 73 million - \$ 7.5 million = \$ 65.5 million. Clearly, additional international funding, from new sources, must be found.

Restructuring of the United Nations.

Issue 15: How should the UN be restructured to adequately deal with oceanic matters at both the international and regional levels?

The existing system of UN relating to the oceans including the collaboration of UN agencies through the ACC subcommittee for Ocean and Coastal Areas:

- . UNESCO/IOC
- . UNDOALOS
- . IMO
- . FAO
- . UNIDO
- . WMO
- . UNDP
- . World Bank
- . Regional Banks.

Deficiencies existing therein.

How can Security Council / UN General Assembly / Commission for Sustainable Development be made effective fora for ocean affairs?

What inputs can UN Agencies make into the work of the Commission on Sustainable Development, and how?

What interlinkages between UN Agencies can be considered to get an integrated policy mechanism?

Financial position of IOI

The auditors report on IOI's accounts for 1994 has been received and is at Annex I.

As is clear from this report, the deficit of IOI has come down from \$ 173,483 at the end of 1993 to \$ 55,241 at the end of 1994.

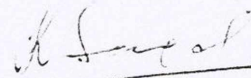
The accounts do not make any provision for approx. US\$ 73,000 claimed from IOI by Harris & Company or the refund of over US\$ 150,000 claimed by IOI from Harris & Company.

The debtors too have been reduced from \$ 125,605 at the end of 1993 to \$ 22,054 at the end of 1994. This amount is due from the Dutch Government but frozen due to a court order in the Harris & Company case.

Another point that needs to be mentioned is that IOI owes the Chairman over \$ 40,000 for the amount spent on the World Commission on the Oceans. IOI HQ has also spent between \$ 5000 - \$ 10,000. This will be reimbursed once the funds for the WCOS are received.

IOI has also to raise funds for external travel of PIM XXIII. In the past two conferences, IOI has to meet all the costs (the Chairman contributed \$ 60,000 to meet the external travel expenses of PIM XXI).

The Committee may like to review the financial position.



Dr. Krishan Saigal
Executive Director



*International Ocean
Institute*

Report and Accounts

31st December, 1994

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International Ocean Institute

Auditors' report

to the members of the Institute

We have audited the accounts on pages 3 to 6 in accordance with International Standards on Auditing.

We have obtained all the information and explanations which, to the best of our knowledge and belief, were necessary for the purposes of our audit. Proper books of account have been kept so far as appears from our examination thereof and the accounts are in agreement therewith.

We have not carried out any audit testing on:

(a) expenditure figures pertaining to the Madras and South Pacific Centres, in respect of which we have relied upon reports submitted to us by independent external auditors;

(b) that part of the expenditure relating to the Halifax Centre incurred directly through Dalhousie University, which houses the Centre and maintains its accounts, on which we have relied; and

(c) items of notional income and expenditure included in the accounts for information purposes only at amounts estimated by Management to represent the value of services received in kind by the Institute.

Subject to the foregoing, in our opinion and to the best of our knowledge and according to the explanations given to us, the accounts give a true and fair view of the state of affairs of the Institute at 31st December, 1994 and of its surplus for the year then ended.

(Signed) Manduca, Mercieca & Co.

*Certified Public Accountants
and Auditors*

21, Archbishop Street,
Valletta,
Malta.

27th March, 1995

International Ocean Institute

Income and expenditure account

Year ended 31st December, 1994

	1994 US \$	1993 US \$
Income		
<i>Grants and other income</i>		
UNDP	593,699	334,312
CIDA	235,926	232,519
PIM XXII (1993 - PIM XXI)	398,459	515,141
Sasakawa Foundation	80,000	89,707
UNIDO	92,570	-
Donations	204,505	354,827
Creditors written off/exchange gain	5,946	83,763
Interest	3,797	392
	<u>1,614,902</u>	<u>1,610,661</u>
Expenditure		
Code		
1. Establishment - personnel	258,947	308,112
2. Establishment - material	25,815	57,494
3. Publications	21,658	19,262
4. Research	73,735	5,000
5. Training programmes	537,356	349,623
6. Conferences, seminars and meetings	532,800	662,114
7. External services	42,911	22,986
8. Depreciation	3,438	3,499
	<u>1,496,660</u>	<u>1,428,090</u>
Surplus for the year	<u>118,242</u>	<u>182,571</u>
Notional income and expenditure		
<i>Income</i>		
Value received from Collaborating Institutions	<u>631,600</u>	<u>205,350</u>
<i>Expenditure</i>		
Rent	15,250	13,500
Water and electricity	10,350	5,600
Establishment - material	30,000	22,250
Salaries	151,000	83,500
Training programmes	135,000	70,000
Research	290,000	10,500
	<u>631,600</u>	<u>205,350</u>

International Ocean Institute

Statement of affairs

31st December, 1994

	Note	1994 US \$	1993 US \$
Fixed assets			
Tangible assets	5	<u>23,179</u>	<u>20,707</u>
Current assets			
Debtors	6	22,054	125,605
Stock of publications		719	719
Cash at bank and in hand		<u>103,456</u>	<u>27,108</u>
		126,229	153,432
Creditors due within one year			
Creditors	7	<u>204,649</u>	<u>347,622</u>
Net current liabilities		<u>(78,420)</u>	<u>(194,190)</u>
Net liabilities		<u><u>(55,241)</u></u>	<u><u>(173,483)</u></u>
<i>Represented by:</i>			
Accumulated fund deficiency			
At beginning of the year		(173,483)	(356,054)
Surplus/(deficit) for the year		<u>118,242</u>	<u>182,571</u>
At end of the year		<u><u>(55,241)</u></u>	<u><u>(173,483)</u></u>

Approved by the Executive Director on 27th March, 1995

Dr. Krishan Saigal
Executive Director

International Ocean Institute

Notes to the accounts

31st December, 1994

1. Fundamental accounting concept

The accounts have been drawn up on a going concern basis on the assumption that sufficient funds will continue to be made available to enable the Institute to meet its financial commitments as and when they fall due.

2. Principal accounting policies

(a) Basis of accounting

The accounts are prepared under the historical cost convention and in accordance with International Accounting Standards.

Notional income and expenditure, duly identified as such, are shown separately for information purposes only.

(b) Foreign currency translation

Transactions in currencies other than US dollars are translated to US dollars at the year end using the average exchange rate resulting on bank currency transfers during the year.

Fluctuations in annual opening and closing rates are taken to income and expenditure account.

(c) Tangible fixed assets

Provision for depreciation of the Institute's tangible fixed assets is calculated to write off the cost of the assets over their estimated useful lives in equal annual instalments of 10%.

3. Taxation

The Institute has been granted tax exempt status by the Government of Malta.

International Ocean Institute

Notes to the accounts

31st December, 1994

4. Tangible fixed assets

	US \$
<i>Office furniture and equipment</i>	
Cost	
01.01.1994	35,000
Additions	5,910
	<hr/>
31.12.1994	40,910
	<hr/>
Depreciation	
01.01.1994	14,293
Charge for the year	3,438
	<hr/>
31.12.1994	17,731
	<hr/>
Net book value	
31.12.1993	20,707
	<hr/> <hr/>
31.12.1994	23,179
	<hr/> <hr/>

Included above is a word processor costing *Lm*6,532 which is fully written off but still in use.

5. Debtors

	1994 US \$	1993 US \$
Asian Development Bank	-	100,000
Dutch Government	21,500	21,500
Others	554	4,105
	<hr/>	<hr/>
	22,054	125,605
	<hr/> <hr/>	<hr/> <hr/>

6. Creditors

	1994 US \$	1993 US \$
Japan Committee (PIM)	-	100,000
Dalhousie University	23,493	31,015
Prepaid revenue (UNDP)	25,681	-
Others	155,475	216,607
	<hr/>	<hr/>
	204,649	347,622
	<hr/> <hr/>	<hr/> <hr/>

International Ocean Institute

Notes to the accounts

31st December, 1994

7. Contingent liability

The Institute has been sued in Holland by Harris & Company B.V. for professional fees and costs due for services performed in prior years amounting to approximately *US \$73,000*.

In a counter suit, the Institute is claiming, also in the Dutch Courts, a refund in excess of *US \$150,000* for alleged overcharging by Harris & Company B.V.

No provision has been made in the accounts in respect of either of these claims pending the outcome of the Dutch Court proceedings.

International Ocean Institute
Expenditure - IOI Headquarters, Malta
Year ended 31st December, 1994

SCHEDULE I

Code	1994 US \$	1993 US \$
1. Establishment - personnel		
1.1 Salaries	73,894	88,961
1.2 Allowances	9,000	9,245
1.3 Travel and transport	29,990	77,858
1.4 Accomodation/DSA	-	2,318
1.5 Human resources development	395	407
1.6 Miscellaneous	412	347
	<u>113,691</u>	<u>179,136</u>
2. Establishment - material		
2.1 Rent (Notional)	6,000	6,000
2.1.1 Rent	-	838
2.2 Water and electricity (Notional)	2,100	2,100
2.2.1 Water and electricity	-	352
2.3 Telecommunications	6,795	18,446
2.4 Financial charges	1,310	1,763
2.5 Repairs and maintenance - premises	-	399
2.6 Repairs and maintenance - equipment	383	236
2.7 Stationery and postage	3,427	808
2.8 Miscellaneous	340	146
	<u>20,355</u>	<u>31,088</u>
3. Publications		
3.2 Publishing and printing charges	15,007	9,404
4. Research		
4.1 Library networking (through Madras)	-	5,000
5. Training programmes		
5.1 Training programmes deep sea mining	80,000	6,694
6. Conferences, seminars and meetings		
6A PIM XXII (1993 - PIM XXI)	409,957	515,141
6A.1 PIM XXI - miscellaneous	-	512
6B Meeting of IOI directors/vice chancellor	59,443	25,295
6C Meeting of board members	4,796	5,763
6D Meeting of planning council	-	41,417
6E Meeting of operational directors	-	53,467
6F Geneva meeting	-	20,519
6G Leadership - Addis	56,129	-
	<u>530,325</u>	<u>662,114</u>
7. External services		
7A Audit and accountancy fees	3,002	2,002
7B Legal fees	17,451	7,483
7C Other professional fees	148	2,618
7D Library networking (consultant)	5,000	-
	<u>25,601</u>	<u>12,103</u>
8. Depreciation	2,187	2,763
Total	<u>787,166</u>	<u>908,302</u>

International Ocean Institute

Expenditure - IOI Halifax, Canada

Year ended 31st December, 1994

SCHEDULE II

Code	1994 US \$	1993 US \$
1. Establishment - personnel		
1.1 Salaries	88,636	92,912
1.3 Travel and transport	28,016	515
1.6 Miscellaneous	553	62
	<u>117,205</u>	<u>93,489</u>
2. Establishment - material		
2.1 Rent (Notional)	7,750	6,000
2.2 Water and electricity (Notional)	7,750	3,000
2.3 Telecommunications	4,424	4,618
2.6 Equipment repairs	270	-
2.8 Miscellaneous	8,866	29,888
	<u>29,060</u>	<u>43,506</u>
3. Publications		
3.2 Publishing and printing charges	76	3,872
	<u>76</u>	<u>3,872</u>
5. Training programmes	<u>122,099</u>	<u>241,788</u>
6. Conferences, seminars and meetings		
6.1 African Leadership Seminar	2,475	-
	<u>2,475</u>	<u>-</u>
8. Depreciation	<u>1,251</u>	<u>736</u>
Total	<u><u>272,166</u></u>	<u><u>383,391</u></u>

International Ocean Institute

Expenditure - IOI Madras, India

Year ended 31st December, 1994

SCHEDULE III

Code	1994 US \$	1993 US \$
1. Establishment - personnel		
1.1 Salaries (Notional)	35,000	17,500
1.3 Travel and transport	5,797	8,958
	<u>40,797</u>	<u>26,458</u>
2. Establishment - material (Notional)	<u>14,000</u>	<u>7,000</u>
3. Publications		
3.2 Publishing and printing charges	4,380	1,534
	<u>4,380</u>	<u>1,534</u>
4. Research - course development		
Research (Notional)	50,000	-
	175,000	3,000
	<u>225,000</u>	<u>3,000</u>
5. Training programmes		
5.1 Training of trainers	106,393	68,926
Training programmes (Notional)	1,798	-
	110,000	70,000
	<u>218,191</u>	<u>138,926</u>
Total	<u><u>502,368</u></u>	<u><u>176,918</u></u>

International Ocean Institute

Expenditure - IOI South Pacific

Year ended 31st December, 1994

SCHEDULE IV

Code	1994 US \$	1993 US \$
1. Establishment - personnel		
1.1 Salaries (Notional)	36,000	19,000
1.1a Salaries (UNDP)	22,254	10,488
1.3 Travel and transport	-	1,557
1.4 Accomodation	-	14,484
	<u>58,254</u>	<u>45,529</u>
2. Establishment - material (Notional)	<u>7,000</u>	<u>3,500</u>
3. Publications		
3.2 Publishing and printing charges	<u>2,195</u>	<u>4,452</u>
4. Research - course development		
Research (Notional)	23,735	-
	<u>115,000</u>	<u>7,500</u>
	<u>138,735</u>	<u>7,500</u>
5. Training programmes		
5.1 Trainmar - Training of trainers	-	14,482
5.2 Training programmes -general	156,842	17,733
	<u>156,842</u>	<u>32,215</u>
7. External services		
7.1 Consultant's fees	12,068	8,915
7.2 Consultant's expenses	-	1,968
7.3 Women & Fisheries network	5,242	-
	<u>17,310</u>	<u>10,883</u>
Total	<u><u>380,336</u></u>	<u><u>104,079</u></u>

International Ocean Institute

Expenditure - IOI Malta (Operational Centre)

Year ended 31st December, 1994

SCHEDULE V

Code		1994 US \$	1993 US \$
1.	Establishment - personnel		
1.1	Salaries (Notional)	<u>10,000</u>	<u>10,000</u>
2.	Establishment - material		
2.1	Rent (Notional)	<u>1,500</u>	<u>1,500</u>
2.2	Water and electricity (Notional)	<u>500</u>	<u>500</u>
		<u>2,000</u>	<u>2,000</u>
5.	Training programmes		
5A	Coastal Zone Management	<u>70,224</u>	<u>-</u>
	Total	<u><u>82,224</u></u>	<u><u>12,000</u></u>

International Ocean Institute

Expenditure - IOI Costa Rica

Year ended 31st December, 1994

SCHEDULE VI

Code	1994 US \$	1993 US \$
1. Establishment - personnel		
1.1 Salaries (Notional)	<u>35,000</u>	<u>19,500</u>
2. Establishment - material (Notional)	<u>4,500</u>	<u>9,500</u>
Total	<u><u>39,500</u></u>	<u><u>29,000</u></u>

International Ocean Institute**Expenditure - IOI Senegal, Africa**

Year ended 31st December, 1994

SCHEDULE VII

Code	1994 US \$	1993 US \$
1. Establishment - personnel		
1.1 Salaries (Notional)	<u>35,000</u>	<u>17,500</u>
2. Establishment - material (Notional)	<u>4,500</u>	<u>2,250</u>
5. Training programmes (Notional)	<u>25,000</u>	<u>-</u>
Total	<u><u>64,500</u></u>	<u><u>19,750</u></u>

Pacem in Maribus XXIII

Pacem in Maribus XXIII is to be held in Costa Rica. The proposed Theme of PIM XXIII is:

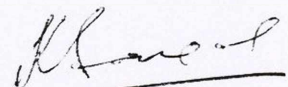
Ocean Governance and the Law of the Sea:
Potential Contributions to the Implementation
of the Secretary-General's "Agenda for Peace".

An organising committee for PIM XXIII has been set up including representatives of UNA, Earth Council, Peace University, Government of Costa Rica and IOI Costa Rica.

The proposed programme is at Annex I and a background note prepared by the Chairman is at Annex II.

In the case of PIM XXII the Executive Committee had set a ceiling of US\$ 50,000 for external travel (to be met by IOI). All local costs are being met by the PIM XXIII committee. A similar ceiling seems to be necessary for PIM XXIII.

The Executive Committee may discuss the matter further.



Dr. Krishan Saigal
Executive Director

PACEM IN MARIBUS XXIII, COSTA RICA, DECEMBER 3 - 7

Provisional Agenda

SUNDAY AFTERNOON: INAUGURATION.

Speakers: President of the Republic; Former President Oscar Arias;; Chancellor, University; Chancellor, Peace University; Maurice Strong or Executive Director, Earth Council; President, Governing Board, IOI; Director-General, UNESCO; President, Independent World Commission for the Oceans;

MONDAY, DECEMBER 4

A.M. *Military uses of the oceans: Current situation Survey, analysis; projection.*

Paper commissioned from SIPRI.

Naval disarmament and arms control: current status.

Paper commissioned from Admiral Frederick Crickard, Canada

Treaty Banning Nuclear Weapons and Weapons of Mass Destruction from the Seabed, A reexamination of the situation, in light of the entering into force of the Law of the Sea Convention, the end of the cold war, and technological developments. E.M. Borgese

P.M. *Reservation [exclusively] for Peaceful Purposes: Current interpretation*

Paper commissioned from Boleslaw A. Boczek

TUESDAY, DECEMBER 5

A.M. *The Agenda for Peace: Economic Security. Potential contributions of the Law of the Sea. Paper to be commissioned*

The Agenda for Peace: Environmental Security: Potential contributions of the Law of the Sea. Paper requested from Alicia Barcena

The Agenda for Peace: Military Security. Paper commissioned from Erskine Childers

P.M.. Three working groups:

Working Group A: Economic Security. Case study: Africa

Working Group B: Environmental Security: South Pacific (Raratonga)

Working Group C: Military Security. Case study: Mexico (Tlatelolco); Caribbean, South Atlantic (Universidad Nacional)

WEDNESDAY, DECEMBER 6

A.M. Working Groups, continued

P.M. Visit to the Peace University

Drafting committee

THURSDAY, DECEMBER 7

A.M.. Presentation of Reports of Working Groups. Adoption of Conclusions and Recommendations. Closing of Conference.



Dalhousie University

International Ocean
Institute



BACKGROUND PAPER

Elisabeth Mann Borgese

INTRODUCTION

The theme of *Pacem in Maribus XXIII*, to be celebrated in Costa Rica on December 3-6, 1995, is

*Ocean Governance and the Law of the Sea;
Potential Contributions to the Implementation
of the Secretary-General's "Agenda for Peace."*

Although the Law of the Sea is not mentioned in the "Agenda for Peace," it is the thesis of this paper that these contributions could be quite considerable, and that they have institutional implications for the restructuring of the United Nations.

The importance of the oceans, the Law of the Sea and ocean governance in this broader context is often underrated and frequently neglected. Considering that the oceans cover three-fourth of our planet, that a very large part of the global economy is ocean dependent, that the oceans are a determinant factor of the world's climate, and of international security, such an omission can have serious consequences.

The first part of this paper will summarize the main features of the Agenda for Peace; the second will show the interactions between the agenda for Peace and the nascent system of ocean governance and seek ways in which they can reinforce each other.

I. Summary of the Agenda for Peace.

The Agenda for Peace consists of a number of interactive elements or phases:

Preventive Diplomacy;

Peacemaking;

- . Peace-keeping; and
- . Post-conflict peace-building.

Cooperation with regional arrangements and organizations is instrumental in the implementation of all phases. A special chapter is devoted to the Safety of personnel; another to financing. Some general principles are emphasized in the conclusive chapter, entitled, as the Report as a whole, "An Agenda for Peace."

On February 21, 1995, the Security Council was presented a Supplement, to bring developments surrounding the Agenda up to date.

Preventive Diplomacy, defined in the Agendas "action to prevent disputes from arising between parties, to prevent existing disputes from escalating into conflicts and to limit the spread of the latter when they occur," should rely on "Measures to build confidence, such as a systematic exchange of military missions, the formation of regional or subregional risk reduction centres, arrangements for the free flow of information, including the monitoring of regional arms agreements. The Secretary General asks all regional organizations "to consider what further confidence-building measures might be applied in their areas and to inform the United Nations of the results..."

A second element of Preventive Diplomacy is Fact finding. "Given the economic and social roots of many potential conflicts, the information needed by the United Nations now must encompass economic and social trends as well as political developments that may lead to dangerous tensions."

Thirdly, Preventive Diplomacy must rely on "Early Warning, concerning environmental threats, the risk of nuclear accident, natural disaster, mass movements of populations, the threat of famine and the spread of disease." Information must be synthesized with political indicators to assess whether a threat to peace exists and to analyse what action might be taken to alleviate the danger.

Regional arrangements and organisations have an important role in early warning. The Secretary-General asks regional organisations that have not yet sought observer status at the United Nations "to do so and to be linked, through appropriate arrangements, with the security mechanisms of this Organization."

Fourthly, Preventive Diplomacy may resort to Preventive Deployment -- on both sides or one side of a potential conflict, with due respect for the principle of national sovereignty and with the consent of the party or parties concerned.

Finally, Preventive Diplomacy may try to build on the establishment of Demilitarized Zones. "In the past, demilitarized zones have been established by agreement of the parties at the conclusion of a conflict. In addition to the deployment of United Nations personnel in such zones as part of peace-keeping operations, consideration should now be given to the usefulness of such zones as a form of preventive deployment, on both sides of a border, with the agreement of the two parties, as a means of separating potential belligerents, or on one side of the line, at the request of one party, for the purpose of removing any pretext for attack." Demilitarized zones would serve "as symbols of the international community's concern that conflict be prevented."

The next phase, *Peacemaking*, may be continuous, or even simultaneous, with the previous one. It relies on methods for the peaceful settlement of international disputes. In this context, the Report mentions the Manila Declaration of 1982 on the Peaceful Settlement of International Disputes and the 1988 Declaration on the Prevention and Removal of Disputes and Situations Which May Threaten International Peace and Security and on the Role of the United Nations in this Field. A major role, of course, should be assigned to the International Court of Justice. "The docket of the International Court of Justice has grown fuller, but it remains an under-used resource for the peaceful adjudication of disputes. Greater reliance on the Court would be an important contribution to the United Nations peacemaking. In this connection, I call attention to the power of the Security Council under Articles 36 and 37 of the Charter to recommend to Member States the submission of a dispute to the International Court of Justice, arbitration or other dispute settlement mechanism. I recommend that the Secretary-General be authorized, pursuant to article 96, paragraph 2, of the Charter, to take advantage of the advisory competence of the Court and that other United Nations organs that already enjoy such authorization turn to the Court more frequently

for advisory opinions." The Secretary-General recommends the following steps to reinforce the role of the ICJ:

- (a) All Member States should accept the general jurisdiction of the ICJ under Article 36 of its Statute, without any reservation, before the end of the United Nations Decade of International Law in the year 2000. In instances where domestic structures prevent this, States should agree bilaterally or multilaterally to a comprehensive list of matters they are willing to submit to the Court and should withdraw their reservation to its jurisdiction in the dispute settlement clause of multilateral treaties;
- (b) When submission of a dispute to the full Court is not practical, the Chambers jurisdiction should be used;
- (c) States should support the Trust Fund established to assist countries unable to afford the cost involved in bringing a dispute to the Court, and such countries should take full advantage of the Fund in order to resolve their disputes.

Other sections of the Peacemaking Chapter deal with Personnel, Sanctions and Special Economic Problems, the Use of Military Force, and Peace-Enforcement Units, all overlapping with the sections of the following Chapter, devoted to *Peace-keeping*, with its sections on "Increasing Demands," "New Departures in Peace-keeping," "Personnel," and "Logistics."

The "Personnel" section stresses that "increasingly, peace-keeping requires that civilian political officers, human rights monitors, electoral officials, refugee and humanitarian aid specialists and police play as central a role as the military.

on "Logistics" the Report requests " Member States in a position to do so should make air-and sea-lift capacity available to the United Nations free of cost or at lower than commercial rates, as was the practice until recently."

Post-conflict peace-building may take the form of "concrete cooperative projects which link two or more countries in a mutually beneficial undertaking that can not only contribute to economic and social development but also enhance the confidence that is so fundamental to peace." The Secretary-General had in mind, "for example, projects that bring States together to develop agriculture, improve transportation or

utilize resources such as water or electricity that they need to share, or joint programmes through which barriers between nations are brought down by means of freer travel, cultural exchanges and mutually beneficial youth and educational projects." Reducing hostile perceptions through educational exchanges and curriculum reform may be essential to forestall a re-emergence of cultural and national tensions..." Support for the transformation of deficient national structures and capabilities, and for the strengthening of new democratic institutions is also recommended.

The importance of cooperation with regional arrangements and organizations is stressed throughout. The Report points out that "The Charter deliberately provides no precise definition of regional arrangements and agencies thus allowing useful flexibility for undertakings by a group of States to deal with a matter appropriate for regional action which also could contribute to the maintenance of international peace and security. Such associations or entities could include treaty-based organizations, whether created before or after the founding of the United Nations, regional organizations for mutual security and defence, organizations 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." It is clear, however, the Report states, "that regional arrangements or agencies in many cases possess a potential that should be utilized in serving the functions covered in this report: Preventive diplomacy, peace-keeping, peacemaking and post-conflict peace-building. 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 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."

Finally, one might cite some important recognitions contained in the concluding chapter, "An Agenda for Peace. "The social stability needed for productive growth," the Report states, "is nurtured by conditions in which people can readily express their will. For this, strong domestic institution of participation are essential. Promoting such

institutions means promoting the empowerment of the unorganized, the poor, the marginalized. To this end, the focus of the United Nations should be on the "field," the locations where economic, social, and political decisions take effect."

Second, and reflecting the general recognition that the international community no longer consists exclusively of States, but includes a variety and increasing number of non-State actors, the Report reminds us that "Peace in the largest sense cannot be accomplished by the United Nations system or by Governments alone. Non-governmental organizations, academic institutions, parliamentarians, business and professional communities, the media and the public at large must all be involved."

A call for innovative approaches is implicit in the final recognition that "We must be guided not by precedents alone, however wise these may be, but by the needs of the future and by the shape and content that we wish to give it."

The most important aspects of this Report perhaps are

(a) the recognition of the changed concept of "security" with its economic and environmental dimensions (although environmental considerations are mentioned only once, in the context of "Early Warning Systems). Different dimensions may prevail during different phases of the process: Conflict Prevention -- "preventive diplomacy" and "Peacemaking" will put more emphasis on removing the causes of conflict, which will have to be sought in the economic or environmental sphere; "peace-keeping" will rely more on the military, although social and humanitarian aspects will be also important; "peace building," again, will require action in the social/economic and environmental spheres.

(b) Equally significant -- and related to the "comprehensive" concept of "security" -- in the "Agenda for Peace" is the flexibly decentralised nature of peace-keeping and peace building, under the authority of the Secretary General, but, as the case may be, in cooperation with regional arrangements. The Agenda for Peace corroborates the current understanding of the "permeability of boundaries," whether between global, regional, and national responsibilities or between disciplines and departments (economic development, environmental conservation, military security).

The daily acts of violence and terrorism we are witnessing both in developing and developed countries dramatically demonstrate the changed nature of the problem of "security." What we are living (or dying) through, today, is in fact nothing less than World War III: not a war fought between nations or superpowers, but waged by a combination of poverty and despair, fanaticism and the insanity of deranged minds. That this is nothing less than war -- World War III -- has been recognized by President Clinton when he declared that the Oklahoma bombing was "an attack on the United States. It is also recognised, e.g., by the legislative reform in 1990 in France which makes those killed or wounded in terrorist attacks officially victims of war which affords victims of terrorism specialized treatment in military hospitals for wounds that often are similar to those suffered on a battlefield. Victims of terrorism in France also have access to veterans benefits, and the state becomes responsible for the children of people killed in terrorist acts. As the Secretary-General put it (Address to the 25th Vienna Seminar on 2 March, 1995), "Most of today's conflicts take place within states. They are fought not only by armies but also by irregular forces. Civilians are the main victims. Humanitarian emergencies are common place. State institutions often have collapsed."

Two main questions arise in conjunction with the *Agenda's* implementation:

(a) In the unbalanced world in which we live since the end of the Cold War, there is always the danger that the Security Council becomes a tool of the foreign policy of the one remaining superpower and its allies. Concepts like "preventive diplomacy" may become instruments of intervention in the internal affairs of "hostile" States. This, at least, is the perception of some countries, especially developing countries.

(b) The second question arises from the fact, that, since the end of the Cold War, the focus of conflict has shifted from the political/military to the economic/technological plane. As one author put it (Silviu Brucan, personal communication), "...for the time being, it is the world market that is the main battlefield; success in the world power game is now measured with the yardstick of

market share rather than that of territorial conquest or the number of bombs and rockets..."

While the *Agenda* is evidently aware of the political/economic interaction, some authors feel it does not do full justice to the gravity of the implications of this shift.

Both questions point to the conclusion that the *Agenda* can be successfully implemented only in a more balanced international system, including a restructured Security Council in a restructured United Nations.

II. *Potential Contributions of Ocean Governance and the Law of the Sea*

It is as a matter of fact quite remarkable that, in the entire Report, there is no mention of the Law of the Sea.

At all levels, and in all dimensions, Law of the Sea developments can make major contributions -- as emphasised already in the Preamble to the United Nations Convention on the Law of the Sea, "Prompted by the desire to settle, in a spirit of mutual understanding and cooperation, all issues relating to the law of the sea and aware of the historic significance of this Convention as an important contribution to the maintenance of peace, justice and progress for all peoples of the world." The Preamble also expresses the belief "that the codification and progressive development of the law of the sea achieved in this Convention *will contribute to the strengthening of peace, security, co-operation and friendly relations among all nations...*"

A. *The Agenda for Peace: Economic Security*

Considering the size of the marine-related economy, it is amazing that it is simply ignored even in the best and most thoughtful discussions of Governance in the 21st century. Three aspects will be dealt with in this paper.

1. The largest industries in the world today are tourism and trade. The growth rate of tourism is phenomenal. In Europe alone, tourism is expected to grow by 38 percent over the next ten years, reaching a total value of \$2.26 trillion by the year 2005 (World Travel and Tourism Council, as reported by the *Herald Tribune*, April 6, 1995. Employment in the industry is expected to rise to 21 million people, up from

the current work force of 19.4 million. Globally, the number of tourists reached 481,536,000 in 1992 and has surpassed the half-billion mark since then; tourist receipts amounted about 2 trillion dollars in 1992 and have gone up since. Considering the importance of cruise ships, of sport fishing, sailing, surfing, swimming and sunbathing, eco-tourism and the supporting industries of these activities, one might assume that at least one-third of this tourism is ocean-dependent, although the exact figure is hard to ascertain from available statistics. In the Mediterranean countries, the number of tourists is expected to rise to 300 million a year during that period. The figures for world trade are even more staggering. Of the total value of 3.78 trillion dollars in 1992, about 70 percent is ship-borne, and therefore ocean-dependent. The figures, in terms of contribution to GNP, may have to be revised in the light of contemporary innovative economic theories and environmental accounting, but they are nevertheless significant.

2. Relatively less important, but still important enough, is the contribution to development of living and nonliving resources. Tables 1 and 2 give the most recent statistics on the production of living and nonliving resources. It should be added that the Convention's emphasis on the satisfaction of the nutritional needs of coastal States, reinforced by Chapter 17 of Agenda 21, could make a significant contribution to the food security, particularly of poorer countries. It will also be noted that over 15 percent of the world's fisheries now is produced by aquaculture, including mariculture and that this production is growing at the rate of 6 percent per annum. This development, of course, is predicated on effective coastal management, including the regulation of competing uses of marine and coastal space as well as of water quality: all reinforced by Chapter 17 of Agenda 21.

Table 1
Marine Fisheries - Annual Catch, 1989 -91
Yield and Estimated Potential

All figures in million metric tons

	Marine Fish		Cephalopods & Crustaceans		Total	
	Annual Catch	Potential	Annual Catch	Potential	Annual Catch	Potential
Atlantic Ocean	18.3	25.5-33.3	1.9	2.7-3.9	20.2	28.2-37.2
Pacific Ocean	45.0	31.0-45.1	3.3	3.1-4.4	48.3	34.1-49.5
Indian Ocean	5.4	4.7-7.1	0.6	0.6-0.9	6.0	5.3-8.0
Mediterranean & Black Sea	1.2	1.1-1.4	0.2	0.2	1.4	1.2-1.6
Antarctic	0.1	NA	0.3	NA	0.4	NA
Arctic	0.0	NA	0.0	NA	0.0	NA
World	69.9	62.3-86.9	6.2	6.5-9.3	76.1	68.8-96.2

Source: World Resources 1994-95, Oxford University Press, 1994.

As far as nonliving resources are concerned, the marine sector is presently under-utilised. This is due to structural changes in contemporary industries which are far less resource intensive than their predecessors in past phases of the industrial revolution. Recycling and the availability of synthetics, on the one hand, miniaturisation on the other, as well as the shift to the "service economy," have left land-based mineral resources under-used and have made it uneconomical to invest in new, marine-based industries. It is nevertheless quite possible that competing land-

uses, environmental considerations, as well as proximity to ship-borne transport and trade, will encourage a shift from land-based to ocean-based mineral production during the next century. It should also be noted that any future growth of the hydrocarbon industry, particularly in view of the economic growth of developing countries, whether in the energy or the petrochemical sector, will come from the offshore, where most of the proven reserves are located. Taking into account environmental constraints, the production of offshore gas and, next century, the generation of energy from waves, tides, currents, winds, temperature and salinity differentials, may considerably reduce the import bills of coastal and island developing countries and contribute to their economic security.

Table 2
Coastal Resources -- Offshore Oil and Gas

	Annual Production				Proven Reserves	
	Oil (million tons)	Gas (million cubic metres)	Oil (million tons)	Gas (million cubic metres)	Oil (billion tons)	Gas (trillion cubic Metres)
	1982	1992	1982	1992	1992	1992
Africa	63.8	117.7	6.1	2.1	3.5	4.0
Asia	229.4	309.3	19.5	73.7	18.8	6.8
Oceania	17.8	25.0	7.4	20.0	0.3	0.9
North & Central America	143.6	128.4	156.5	20.6	6.7	3.7
South America	61.2	73.4	1.1	13.2	1.7	1.0
Europe	132.8	181.3	87.3	17.2	5.2	5.0
USSR (former)	8.8	30.9	14.7	10.4	0.3	-
World	657.4	866.0	292.8	57.2	36.5	21.4

Source: World Resources, 1994.

Many of the living and nonliving resources of the oceans, as well as the ocean environment as a whole, are *shared resources*, which, as the Report points out, may be a source of conflict. Joint management regimes, whether bilateral or multilateral, in "joint development zones" or "management zones," as they emerge ever more frequently, especially in cases of boundary conflicts and overlapping jurisdictional claims, are a contribution to the Agenda for Peace. They could also be developed as

"demilitarized zones" as proposed in the Agenda for Peace (Preventive Diplomacy chapter).¹

Table 3
Coastal Resources - Shipping
1988-90

Million Metric Tons

	Average Annual Volume of Goods Loaded & Unloaded 1988-90		
	Crude Petroleum	Petroleum Products	Dry Cargo
Africa	382.5	44.3	285.7
Asia	947.2	206.5	1,392.6
Oceania	14.4	12.0	286.6
North and Central America	370.4	151.2	800.7
South America	111.6	41.0	302.1
Europe	562.0	296.8	1,302.5
USSR (former)	69.9	51.2	123.0
World	2,458.0	903.0	4,493.2

3. The third, and perhaps most important contribution of ocean development to the economic security of States, is education and the development of human resources. The awareness, maturing during the 'eighties, that the benefits to be

¹ There have been numerous political efforts at conflict avoidance and peace-building, through promoting a negotiated joint development zone in the Spratly Islands. Yet the conflicting situation continues (the latest being between the Philippines and China, February/March 1995). A joint development zone, or joint management zone holds the best promise for a solution of the problem.

derived from the Law of the Sea Convention, including the acquisition of vast, resource-rich ocean spaces in the EEZ and the continental shelf, can only be realized by skilled human resources and scientific and technological capacity, have given a significant impulse to training and education. Many programmes are interdisciplinary, including considerations of the Law of the Sea and emergent forms of ocean governance as well as information technology and the other high technologies involved in ocean management and development. The development of human resources constitutes a vitally important contribution to economic security.

B. *The Agenda for Peace: Environmental security*

The potential contribution of the Law of the Sea Convention to environmental security cannot be overrated. As we have stressed in past PIM conferences, Part XII of the Convention contains the only existing, comprehensive, binding international environmental law, covering pollution from all sources, whether land-based, oceanic or atmospheric. It also provides a comprehensive, binding system for the peaceful settlement of environmental issues, as well as enforcement mechanisms, dividing enforcement responsibilities between port states, coastal states and flag states. The Regional Seas Programmes, emanating from the Stockholm Conference on the Human Environment, relied heavily on the universal law emerging in the nascent Part XI of the Law of the Sea Convention and would be unthinkable without it; if it was UNEP's most successful undertaking this was because it could build within the solid framework of that Convention. Other sectors of environmental programmes did not enjoy this advantage. Agenda 21 is a non-enforceable "soft law" instrument -- with the exception of Chapter 17, dealing with the seas and oceans, which interprets, fleshes out, develops and advances the Convention, which, in turn provides a legal framework, enforcement mechanisms, and a dispute settlement system, thus moving it from "soft law" in the direction of conventional international law. Implementing Chapter 17 of Agenda 21 means implementing the Law of the Sea Convention. Implementing the Law of the Sea Convention means implementing Chapter 17.

At the same time. Agenda 21, covering all economic/environmental activities, whether at sea, on land, or in the atmosphere, now links the Law of the Sea and ocean governance to the rest of the global system which it is bound to affect, for, if part of a system is changed, the whole system changes.

The changes required in the Regional Seas Programme, to bring them forward "from Stockholm to post-Rio," from a sectoral approach to environmental protection to an integrated approach enhancing both economic development and the conservation of the environment, both social and natural, have been dealt with by the International Ocean Institute on previous occasions (*Ocean Governance and the United Nations*, Halifax: Centre for Foreign Policy Studies, 1995; "Revising the Barcelona Convention," paper presented at the ICCOPS, Genoa, April, 1995). Here only three aspects will be singled out, which could have a direct impact on environmental security.

The first would be the establishment, within the framework of the Regional Seas Programmes, of *Regional Commissions for Sustainable Development*. It is clear that a revised, broadened mandate, covering development as well as environment, will require a stronger institutional framework and, in particular, the establishment of an *executive body*, to supervise the implementation of programmes and take decisions between the bi-annual Meetings of States Parties, which, we suggested, should be broadened into some sort of regional "ocean assembly," where not only Governments but the nongovernmental sector, science, industry, and regional organisations such as regional economic commissions and development banks should be represented. We have proposed to conceive the executive body, to be elected by the regional "ocean assembly," as a *Regional Commission for Sustainable Development and Comprehensive Security*. In the Mediterranean, a proposal (by the Delegation of Malta) for the establishment of a Mediterranean Commission for Sustainable Development is already on the table of the States parties to the Barcelona Convention. In the institutionally flexible context of the Regional Seas Programmes, and on the basis of the recognition that "sustainable development," integrating development and environment concerns and predicated on peace, and "comprehensive security," including military, economic and environmental security," are, in the final analysis,

identical goals, the mandate of the Regional Commissions should be broad enough to encompass both. The establishment of such Regional Commissions, within the existing framework of the Regional Seas Programmes, would constitute a significant contribution to the Secretary-Generals Agenda for Peace.

The second contribution to environmental security could be the denuclearization of regional seas, as pioneered by the Treaties of Tlatelolco and Rarotonga. This would follow from interpreting, and progressively developing, the concept of "Reservation for peaceful purposes which, in the Law of the Sea Convention, is seminal, but undeveloped. Jens Evensen, formerly Judge at the International Court of Justice, advocates this view. In a paper, "The Law of the Sea Regime" (*The Denuclearisation of the Oceans*, R.B. Byers, Ed., London and Sydney: Croom Helm, 1986) Evensen goes as far as to assert that the deployment of cruise missiles violates the provisions contained in the Law of the Sea Convention, including the general principles that the oceans shall be used exclusively for peaceful purposes. He also draws attention to Part IX of the Convention, containing the very succinct provisions concerning enclosed or semi-enclosed seas. "States bordering an enclosed or semi-enclosed sea should cooperate with each other in the exercise of their rights and in the performance of their duties under this Convention." This, he suggests, implies that such states have special rights and obligations to formulate policies with regard to the peaceful development in their enclosed or semi-enclosed seas. "The establishment of zones of peace, nuclear-weapons free zones and other peace-related activities in the area, such as safe havens for home fleets in certain maritime areas, special procedures for the commencement of naval manoeuvres and the like, would be examples." Such initiatives, clearly contributing to the confidence-building measures proposed by the "Agenda for Peace," have been proposed for the Baltic and the Caribbean. "These possibilities should be further explored."

While he admits that the Law of the Sea Convention "does not directly address the denuclearisation of the oceans or related arms limitation issues," he concludes that "the Convention further codifies the principles which underlie the peaceful uses of

ocean space. *As such the Convention could serve as a legal basis for more directly addressing the issue of nuclear weapons at sea.*"

The Declaration on the Indian Ocean as a Zone of Peace, the Treaty of Tlatelolco establishing a Latin American Nuclear-Free Zone (LANFZ), and the Treaty of Rarotonga, with its Protocols Protocol, have been promising beginnings in enhancing both military and environmental security. The Tlatelolco Treaty, however, while at least discouraging if not prohibiting the testing of nuclear weapons system and nuclear weapons training, does not restrict deployment of nuclear ships or vessels carrying nuclear arms. "Naval operations in the zone by parties to the Protocols to the Treaty can include the transit of nuclear weapons in the region. France, the Soviet Union and the United States have stated that their right to unimpeded operation on the high seas, including the waters within the LANFZ, cannot be restricted." (William Arkin et al., In Byers, op.cit.)

It is to be hoped that other regional arrangements will follow these pioneering achievements. The concept of the reservation of the seabed and the high seas for peaceful purposes, established by the Law of the Sea Convention, should provide a legal basis for such a development. *Pacem in Maribus* has repeatedly included in its recommendations that this subject should be studied by bodies such as the International Law Commission, but thus far, there has been no follow-up.

The third contribution arises from the need for joint regional surveillance and enforcement. It was first realised in regional seas containing small, mostly poor developing island States, incapable, individually, to survey vast ocean spaces now under their jurisdiction and responsibility. Jointly, however, they could do what none of them would have been able to do individually. A first comprehensive study on multi-purpose joint regional surveillance and enforcement was undertaken by the Commonwealth Secretariat for the Solomon Islands during the seventies. Among the Pacific Islands, in fact, as well as in the Eastern Caribbean, encouraging progress has been made in the establishment of such systems. They should, in the future, come under the command of the Regional Commissions for Sustainable Development, which

should have a High-Level Segment, attended, for this purpose, by the Ministers of Defence of States Parties. Appropriate linkages should be established between these Regional Commissions and the joint operations of their navies and coastguards for peaceful purposes, and the Secretary General's global security system (Security Council: Joint Staff Committee; standing armed forces, including a naval command).

More recently, the need for regional joint surveillance and enforcement has emerged as the only available alternative to the unilateral expansion of national claims beyond the 200 mile limit of the Exclusive Economic Zone. The Draft Convention on Straddling Stocks and Highly Migratory Stocks is emphasizing regional cooperation for the purpose of surveillance and the enforcement of inevitable fisheries conservation measures in the High Seas. This would be in accordance with the U.N. Convention on the Law of the Sea and a contribution to its further evolution. It also would be a major contribution to the enhancement of environmental and resource security.²

C. *The Agenda for Peace: Military Security*

The same arrangement for regional cooperation of navies, under the aegis of the Ministers of Defence working through the Regional Commission for Sustainable Development and Comprehensive Security, could serve the purpose of U.N. *peace-keeping*, in case 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 *peaceful humanitarian activities* such as search and rescue, disaster relief, or hydrological surveys, mapping and other forms of oceanographic research.

In its Report *Uncommon Opportunities* the International Commission on Peace and Food (London and New Jersey: ZED Books, 1994) elaborated on the peaceful activities of armies and their potential contribution to the Agenda for Peace. "There

²One might mention, in particular, the effective evolution of the South Pacific Fisheries Forum Agency in the regional regulation of access to fisheries in their Exclusive Economic Zones and Continental Shelves, thus avoiding the continuation of conflict with the United States and other Distant-water Fishing Nations.

are significant precedents for the utilization of the military to support the environment and development -- for construction of roads in Ethiopia and Yemen, bridges in Guatemala, as well as harbours, canals, railways and airfields; for afforestation projects and monitoring wildlife in India; for training of mechanics, electricians, and other productive skills; for urban renewal projects and drug enforcement in the United States, harvesting of crops in the USSR, flood rescue operations in Bangladesh, nuclear clean-up at Chernobyl, damage limitation after the vast oil spills and oil fires in Kuwait, humanitarian relief for Kurdish refugees, distribution of food and medicine in Bosnia and a host of other activities."

There is no reason why the same potential should not exist among navies, especially in recognition of the "dual-purpose" character of much of their existing equipment.

In a paper presented at Pacem in Maribus XX (Lisbon, 1992), Joseph P. Morgan gives a list of warships that could usefully be employed for peaceful purposes. "All the amphibious ships have characteristics useful for disaster relief operations," he points out. Some of the amphibious assault ships of the U.S. Navy, for example, "have extensive medical facilities on board, including operating rooms, x-ray rooms, a hospital ward, an isolation ward, laboratories and a pharmacy." The equipment of the two large U.S. Navy hospital ships is even more impressive. "They are equipped with 1,000 patient beds, 12 operating theatres, laboratories, pharmacies, dental, radiation, and optometry departments, and burn care, radiological and physical therapy departments." It is easy to envision, Morgan concludes, "the valuable humanitarian role the ships could play in natural disaster, epidemics and other events requiring medical help.

Auxiliary ships, designed to carry various types of cargo in support of combat vessels, could use their capacity for quick loading and offloading, on land and at sea, for the rapid delivery of essential food, fuel, and other supplies in disaster relief operations.

Anti-submarine warfare technologies and technologies for the exploration of the deep ocean and seabed are closely related; mine warfare ships, with their winches and booms, are suitable for handling large oceanographic sampling devices.

Undoubtedly, arrangements for regional cooperation among such ships could "make sea-lift capacity available to the United Nations" as requested in the *Agenda*.

IV. Agenda for Peace: Peace-making and Peaceful Settlement of Disputes; Peace-building

The peaceful settlement of disputes, in the *Agenda*, is an essential part of *Peacemaking*, and it is indeed surprising that the Law of the Sea Convention is not mentioned in this context, for all the Secretary-General's suggestions are already embodied in that Convention, which sets the precedent in international law for their realisation. He suggests that "All Member States should accept the general jurisdiction of the ICJ...without any reservation." Under the Law of the Sea Convention, all States Parties, while signing, ratifying, or acceding to the Convention accept *eo ipso*, and with a minimum of reservations (boundary disputes, disputes involving the military; disputes already under the jurisdiction of the Security Council, Article 298).

The Secretary-General suggests that "When submission of a dispute to the full Court is not practical, the Chambers jurisdiction should be used." This is provided for in Article 188 of the Law of the Sea Convention.

The Secretary-General recommends that "States should support the Trust Fund established to assist countries unable to afford the cost involved in bringing a dispute to the Court, and such countries should take full advantage of the Fund in order to resolve their disputes." On this one point, the United Nations is ahead of the Law of the Sea! One might suggest that this Fund could also be used to assist countries with the cost involved in bringing them to the International Tribunal for the Law of the Sea.

The dispute settlement system of the Law of the Sea Convention, articulated in Part XV and Annexes V-VIII of the Convention, has indeed been hailed as one of the

highest achievements of the Convention. Its potential contribution to *Peacemaking*, in the terms of the *Agenda*, is quite considerable,³

Finally, the Law of the Sea Convention provides a legal and institutional framework for the kind of "concrete cooperative projects which link two or more countries in a mutually beneficial undertaking that can not only contribute to economic and social development but also enhance the confidence that is so fundamental to peace."

The proper utilisation of the International Sea-bed Authority, at this time when commercial seabed mining has receded into a rather indeterminate future, already includes educational projects, exchange of information on high technologies and cooperative projects among Pioneer Investors in environmental impact assessment and technology development. It is to be hoped that such activities will be more fully developed as the fledgling Seabed Authority moves through its "evolutionary approach." Most deep-sea technologies, as was pointed out, are dual-purpose technologies, serving peaceful as well as military purposes. International cooperation thus has a strong confidence-building dimension.

The regional centres to advance the marine sciences and technologies, whose establishment is mandated in Articles 276 and 277 of the Convention, could serve a similar cultural, economic and confidence-building purpose. Regional cooperation in aquaculture development, shipping, water and energy management, tourism, especially cultural and eco-tourism, marine archeology, should all be covered by the

³ The role of the ICJ and the arbitral tribunals in settling disputes concerning the law of the sea and maritime boundary has been extremely positive. In some cases pending before it, the ICJ had suggested to the parties to negotiate an equitable and durable solution to the conflict, which led to a successful conclusion (e.g., Finland v. Denmark, concerning the height of the bridge over the Great Belt Strait -- discontinued since 10 September 1992; Guinea-Bissau v. Senegal, concerning the maritime boundary in the EEZ: Agreement of 14 October, 1993). As these cases suggest, the objective of conflict-prevention and peace-building should be kept flexible.

enlarged Regional Seas mandate. They all belong into the category of projects described by the Secretary-General as "*peace-building*."

The "participational structures" at the local level, "the locations where economic, social, and political decisions take effect," are pioneered by Agenda 21 and its concepts of "integrated coastal and marine management." This is to bring together local government, nongovernmental organizations, academic institutions, parliamentarians, business and professional communities, the media and the public at large, and involve them in the decision-making process. Democratisation, decentralization, "the empowerment of the unorganized, the poor, the marginalized," are all on the Agenda for Peace as well as on the Agenda 21, the agenda for ocean governance and the progressive development of the Law of the Sea. These linkages ought to be taken into consideration; they ought to be utilized so that each process complements and reinforces the other in the huge effort that is needed to restructure our global order for the next millennium.

Management system of IOI

Management

When IOI decided to extend its activities from the two centres it had - Halifax and Malta - to four new centres in Latin America, Africa, Indian Ocean and Oceania, it gave anxious thought to the management system it should adopt. This became even more urgent with the demand by other areas to set up IOI Centres in their regions - Japan, China, Qatar, etc. On the one hand the globalisation of IOI had its plus side by giving it an extended outreach. The flip side, of course, was the need to manage world-wide operations without losing creativity or bureaucratising IOI.

Administratively, both finance and post-modern organisation theory pointed to a decentralised system held together by an information flow network and a light coordinating headquarters. The traditional organisational design of a pyramidal structure with the headquarters "managing and controlling" the "lower echelons" would obviously not only lead to large overheads and stifle creativity but would also be out of step with the post-modern age which favours horizontal and flexible structures.

There were, however, some pitfalls to be avoided in such a design. One was to prevent the identity of IOI from being merged into that of the collaborating institutes. Another was to see that all the programmes, research etc., have the distinct multidisciplinary and practical policy-oriented approach of IOI with quality not being diluted. Also the accounts, finances etc., had to be maintained in a manner that allowed the presentation of consolidated audited accounts of IOI. It was also necessary to keep administrative and overhead expenses low so that IOI did not price itself out of the market.

Keeping all the above factors in mind, it was decided to:

- decentralise the management system to semi-autonomous operational centres which would be joint ventures between IOI and a collaborating institution (university, oceanographic research centre);
- provide coordination to the system by having representatives of the Centres meet with headquarters once or twice a year to:
 - . establish IOI's strategic policy framework;
 - . jointly scrutinise the IOI work plan;
 - . jointly decide on courses development and research;
 - . establish an E-mail network.

The system has been in operation for approximately two years, a time too short to evaluate it. But some things have already become evident:

- (i) in the decentralised system the Centres have tended to be more creative and committed;
- (ii) different cultures and styles of functioning are being integrated into IOIs research and training;
- (iii) the "experts" base is being widened as more and more people are being utilised both for lecturing in IOI courses and in preparing course material. In fact in Madras almost 25 trainers have been "trained" locally while in Fiji there are about 10.

This matter was discussed at the Director's meeting in Madras on 8 December, 1994. The main recommendations of that meeting were as below:

Policy. The policy of IOI had necessarily to be enunciated by the Governing Board after active interaction between the representatives of the Centres and the Board.

One way could be to have representatives of the Centres on the Planning Council of IOI as the Planning Council was the main advisory organ of the Board. Another method could be for the Board to consult the Centres about the feasibility of policies. This would involve the Centres in the decision-making system of IOI.

Planning. The strategic plan of IOI could be drawn up at the meeting of representatives of the Centres and then submitted to the Board. This plan could, inter alia, examine the interaction of IOI's plan with other areas of co-operative endeavour which the Centres might be engaging in e.g. TRAIN-SEA-COAST. The strategic plan would also help to harmonise the objectives of the co-operating institutions (IIT, UNA, USP, SOA, CRODT etc.) with those of IOI. Since the co-operating institutions were involved in other networks besides the IOI network, IOI's strategic plan would help in harmonising all of their activities.

Information. There was need for the Centres to collect information from their regions and circulate it within the IOI network. Quarterly action reports of all Centres could be circulated within the network. This would not only make everyone aware of what was happening throughout the system but make for co-ordinated and synergistic functioning.

Accounts and Reporting. There was general agreement that the system of accounts and reporting within the network needed to be standardised so as to make for comparability. This would also enable headquarters to monitor activities thereby enabling it to fulfil its obligation to the donors and others."

Directors of IOI Centres. There was general agreement that the Directors of IOI Centres should be faculty members at a fairly high level as that would make for more effective

functioning of the Centres.

Regarding the Planning Council, the Governing Board decided in its thirty-third meeting as follows:

The Board decided that Directors/Vice Chancellors should be members of Planning Council subject to their total membership not exceeding half the membership of the Planning Council.

The Committee may consider the other recommendations and, it is proposed, decide as follows:

- (i) authorise the directors meeting to prepare a strategic plan for IOI;
- (ii) the Directors of IOI Centres should, as far as possible, be senior faculty members of the collaborating institutions.



Dr. Krishan Saigal
Executive Director

Board Membership

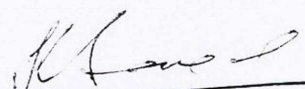
In its Thirty-third Meeting the Governing Board decided that the names with CVs of Ms. Fujiko Hara (Japan), Ms. Anita Coady (USA) and Mr. Nicolas Gelpke (Switzerland) be circulated to all Board Members for approval as replacements for the retired members.

A letter was accordingly circulated to all members of the Board vide letter at Annex 1. Since two more Board Members, Dr. Alexander King and Mr. Jan Pronk had resigned in the meantime, the letter was sent to the remaining 13 members of the Board with the request to reply by May 15, 1995.

The position is as below:

SENT TO	APPROVED	DIS-APPROVED	OTHER
Prof. Elisabeth Mann Borgese	*		
Ms. Alicia Barcena	*		
Prof. Salvino Busuttil	*		
Amb. Christopher Pinto			No reply
Dr. Mario Ruivo			Suggested postponement
Fr. Peter Serracino Inglott	*		
H.E. Mr. Bhagwat Singh			No reply
Mme. Danielle de St. Jorre	*		
Dr. Anton Vratusa	*		
Hon. Dr. Joseph Sinda Warioba			No reply
Amb. Layashi Yaker	*		
Dr. Alexander Yankov			No reply
Mr. Maxwell Bruce	*		

Ms. Fujiko Hara, Ms. Anita Coady and Mr. Nicolas Gelpke may be inducted as members of the Governing Board.



Dr. Krishan Saigal
Executive Director

5 April, 1995

Dear

At its thirty-third meeting, the Governing Board decided as under:

**Retirement of one-fifth of Board Members
and Filling up of Resultant Vacancies**

The Board noted that with the resignation of Mr. Umberto Colombo, two members needed to retire. Dr. Ivan L. Head and Dr. Manmohan Singh were the other two members whose name came up for retirement. The Board decided that:

- (i) x
- (ii) the names of CVs of Ms. Fujiko Hara (Japan), Ms. Anita Coady (Canada) and Mr. Nicolas Gelpke (Switzerland) be circulated to all Board Members for approval as replacements for the retiring members.

I am to circulate the CVs of Ms. Fujiko Hara, Ms. Anita Coady and Mr. Nicolas Gelpke for your approval.

It would be appreciated if you could reply by 15 May, 1995.

With regards,

Yours sincerely,

Dr. Krishan Saigal
Executive Director

Enc.

**Retirement of one-fifth of Board Members
and filling in of resultant vacancies**

Article 5.3 of Articles of Association of IOI reads as follows:

"On staggered terms one-fifth of the members of the Board have to be renewed every year. Members of the Board maybe re-elected for one successive term of five years."

This matter was discussed in the Thirty-first Meeting of the Board which minuted as follows:

"Item 3: Renewal of membership of the Board

3.1 The Board considered the note circulated by the Executive Director, the Articles of Association of IOI and the letter from IOI's legal adviser in Amsterdam. The Board clarified that the position regarding the Board as on the 16 July 1993 was as follows:

Elected Members of the Board

Amb. Layashi Yaker, President of the Board
Dr. Alicia Barcena
Prof. Salvino Busuttil
Prof. Umberto Colombo
Dr. Ivan L. Head
Dr. Alexander King
Dr. Christopher Pinto
Dr. J. P. Pronk
Dr. Mario Ruivo
Amb. K. Bhagwat Singh
Dr. Manmohan Singh
Mme. Danielle de St. Jorre
Dr. Anton Vratusa
Dr. Joseph Sinde Warioba
Dr. Alexander Yankov

Founder

Prof. Elisabeth Mann Borgese, Founder
Member and Honorary Chairman for Life

Ex officio members

Dr. Sidney Holt, Chairman of the Planning Council
Fr. Peter Serracino Inglott, nominee of the Government of
Malta

3.2 The Board further clarified that the Founder and the
ex officio members are:

- a) full members having all rights; and
- b) permanent members of the Board and not subjected

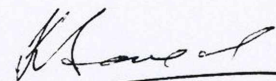
to retirement under one-fifth rotation system.

- 3.3 The Board decided that for the purposes of Clause 4 of article 5 of the Articles of Association, the restriction that "not more than two of the voting members of the Board shall be of the same nationality" shall not apply to the ex officio members or on account of them."

As per the above decision, three of the fifteen elected members have to relinquish office on 16.7.94 and three persons (not excluding the retirees) elected in their place.

It may be pointed out that since the last Board Meeting, Dr. Alexander King and Mr. Jan Pronk have resigned from the Governing Board.

The Committee may take an appropriate decision in the matter.



Dr. Krishan Saigal
Executive Director