

Oceans and the law of the sea

Advance, unedited reporting material,* to be issued as the Report of the Secretary-General on oceans and the law of the sea under item 53 of the preliminary list** of the fifty-eighth session of the United Nations General Assembly

Summary

The present report has been prepared in response to the request of the General Assembly in resolution 57/141, paragraph 73, for the Secretary-General to present to its fifty-eighth session his annual comprehensive report on developments and issues relating to oceans and the law of the sea. It will be presented as a basis for discussion to the fourth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea established by the General Assembly in its resolution 54/33 and renewed for three years by resolution 57/141, in order to facilitate the annual review of developments in ocean affairs. The fourth meeting, as decided by the General Assembly, will focus on the protection of vulnerable marine ecosystems and on safety of navigation, for example, capacity-building for the production of nautical charts. The report contains also information on the status of the United Nations Convention on the Law of the Sea and its implementing Agreements, and declarations and statements made by States under articles 310, 287 and 298 of the Convention. It further elaborates on developments regarding the protection of marine environment and the safety of navigation, in particular in relation to the aftermath of the *Prestige* incident in 2002. Finally, it addresses the establishment of a mechanism for interagency coordination and cooperation. The report identifies two main challenges for the future: to ensure that states fully comply with their obligations under the law of the sea, and that inter-agency cooperation is facilitated and enhanced.

* Due to the page limit, this report contains a mere summary of the most important recent developments and selected parts of contributions by major agencies, programmes and bodies. The full texts of all contributions are posted on DOALOS web site: www.un.org/Depts/los. Furthermore, some traditional subjects have been omitted for lack of space.

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Abbreviations

CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CEB	Chief Executive Board for Coordination
COFI	FAO Committee on Fisheries
FSI	IMO Subcommittee on Flag State Implementation
GEF	Global Environment Facility
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GMA	Global Marine Assessment
GMDSS	Global Maritime Distress and Safety System
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
HELCOM	Baltic Marine Environment Protection Commission (Helsinki Commission)
HLCP	High-Level Committee on Programmes
IAEA	International Atomic Energy Agency
ICCAT	International Commission for the Conservation of Atlantic Tunas
IHO	International Hydrographic Organization
INF Code	International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships
ISM Code	International Safety Management Code
IUCN	The World Conservation Union
IUU fishing	illegal, unreported and unregulated fishing
MCS	Monitoring, Control and Surveillance
MEPC	IMO Marine Environment Protection Committee
MSC	IMO Maritime Safety Committee
NAFO	Northwest Atlantic Fisheries Organization
NEAFC	North-East Atlantic Fisheries Commission
OECD	Organisation for Economic Cooperation and Development
OSPAR	Commission for the Protection of the Marine Environment of the North-East Atlantic
PERSGA	Regional Organization for the Conservation of the Red Sea and the Gulf of Aden
RFMOS	Regional fisheries management organizations
SAR Convention	International Convention on Maritime Search and Rescue
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice (Conference of Parties to Convention on Biological Diversity)
SOLAS	International Convention for the Safety of Life at Sea
STCW Convention 1978	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
STCW-F	1995 International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel
SUA Convention	1988 Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation
UNCED	United Nations Conference on Environment and Development
UNCTAD	United Nations Conference on Trade and Development
UNU	United Nations University
UNIDO	United Nations Industrial Development Organization
VDRs	voyage data recorders
VMS	vessel monitoring system

I. Overview: International Oceans Governance: Developments towards an integrated approach

1. 2002 was a landmark year for the oceans, for several reasons. First, it was the 20th anniversary of the opening for signature of the United Nations Convention on the Law of the Sea (UNCLOS), which was celebrated during a two-day meeting of the General Assembly.¹ Second, it marked a considerable advance in oceans governance, in that developments in various forums fed into each other in a kind of “virtuous circle” of international meetings culminating first in the World Summit on Sustainable Development (WSSD) and then in the General Assembly debates and resolutions that set the course for future cooperation in ocean affairs at all levels.

2. In recent years, the law of the sea and ocean affairs have been somewhat neglected in a common but erroneous belief that everything was settled with the adoption of the Convention in 1982. Doubtless, that was one of the reasons why the oceans were originally not on the agenda for the WSSD. Yet, the persistent efforts of all interested groups, beginning with the conference Oceans and Coasts at Rio+10, persuaded the preparatory meetings for the Johannesburg Conference that not only was UNCLOS not the end of the road, but also many of the commitments of the UNCED at Rio remained unfulfilled.

3. Indeed, although a vast array of instruments relating to the oceans, both binding and non-binding have been adopted since 1982 and 1992, much remains to be done. For all this impressive legislation is not being sufficiently implemented and enforced. The evidence is clear in the continuing depletion of the world’s fish stocks and the increasing degradation of the marine environment, with their disastrous economic and social repercussions. These facts were shockingly brought to the forefront of public and political awareness by the catastrophic consequences of the sinking of the oil tanker *Prestige* off the Spanish coast.

4. A number of recent accidents have made clear not only that certain flag States were not fulfilling their obligations under the UNCLOS, but also that if the international community did not respond in an appropriate manner to ensure implementation of those obligations and to enhance cooperation among States and inter-governmental organizations, then States and regional organizations might take unilateral action that would threaten the integrity of the Convention and its continued viability.

5. On the other hand, there were positive signs of increased awareness of the problems facing the oceans and efforts at international cooperation to resolve them. States realized that in attempting to address the issues, it is first necessary to collect and analyse information concerning the current state of the oceans. Although many groups and organizations have been doing this partially and independently, a truly regular comprehensive and in-depth approach has been lacking. In 2002 concrete steps towards a Global Marine Assessment were taken at a Workshop organized by UNEP, the third meeting of the Consultative Process on Oceans and the Law of the Sea, the WSSD and, finally the General Assembly. DOALOS is coordinating the process on behalf of the Secretary-General.

6. At the same time, in response to a request from a number of NGOs, the Secretary-General through DOALOS is consulting a number of relevant agencies and organizations on the possibility of establishing an inter-agency task force to study the “root causes” of the *Prestige* disaster. In response to a General Assembly request, the Secretary-General is also considering possibilities for the establishment of a new inter-agency mechanism for cooperation and coordination to deal with all aspects of ocean affairs.

7. This brings us back to international oceans governance and the current interaction among various intergovernmental bodies. While the General Assembly exercises a general oversight function with respect to oceans and the law of the sea, in view of the limited time available in its crowded agenda,

three years ago the General Assembly created a new forum for discussion in the Open-ended informal consultative process on oceans and the law of the sea (“Consultative Process”). For a week each spring, the Process meets for a comprehensive exchange on the basis of the annual report of the Secretary-General, but with a particular focus on two issues. The meetings are informal, with participation by representatives from States Parties, non- States Parties, inter-governmental organizations, and non-governmental organizations. In addition to feeding directly into the annual debate and resolution in the General Assembly, the outcomes of the Consultative Process also exercise considerable influence on subsequent meetings in a variety of forums. In 2002, the General Assembly reviewed the usefulness of the Consultative Process and renewed its mandate for a further three years.

8. As noted above, in 2002 different institutions, meetings and actors worked together to reach certain common goals. One of those goals was the inclusion of ocean affairs in the Plan of Implementation of the World Summit on Sustainable Development. In November 2001 the General Assembly recommended that, in view of the forthcoming WSSD, the Consultative Process should discuss the issues of: (a) the protection and preservation of the marine environment; and (b) capacity-building, regional cooperation and coordination, and integrated ocean management.² Shortly thereafter, the deliberations and outcomes of the Global Conference on Oceans and Coasts at Rio+10³ organized jointly by NGOs and the IOC, were presented to the second preparatory meeting for the WSSD. This raised the awareness of the Committee on the importance of the oceans. Although initially oceans issues had been omitted from the Summit agenda, it was now decided to include them.⁴ Next, at the April 2002 meeting of the Consultative Process, delegations decided to forward its Report⁵ to the fourth preparatory meeting for the WSSD.

9. This process of coordination and cooperation amongst all relevant actors led to the inclusion in the WSSD Plan of Implementation of Chapter IV, paras. 30-36 on oceans, seas, islands and coastal areas, as well as Chapter VII on Small Island Developing States.⁶ Together with Chapter 17 of Agenda 21, the WSSD Plan of Implementation now establishes the programme of action for the implementation of the legal framework of principles and rules in UNCLOS. This was evident in the extensive reference to the recommendations of the WSSD in the resolution on oceans and the law of the sea adopted by the General Assembly in December 2002.

10. This is but one example of the successful operation of the current somewhat decentralized system of international oceans governance. Some decentralization is inevitable, as oceans affairs are addressed in many different organizations and forums. As the following pages will demonstrate, there is considerable cooperation among various agencies dealing with aspects of ocean issues, for example, in relation to the rescue of persons at sea. In recent years, progress has been made in oceans governance and integrated management, albeit perhaps too slowly to save depleted fisheries and vulnerable marine ecosystems.

II. The United Nations Convention on the Law of the Sea and its implementing Agreements⁷

A. Status of the Convention and its implementing Agreements

11. Since the issuance of the last report, Armenia, Kiribati, Qatar and Tuvalu deposited their instruments of ratification or accession to UNCLOS and Cuba and Tunisia deposited their instruments of ratification of or accession to the Part XI Agreement, thus increasing the number of Parties to UNCLOS to 142 and to the Agreement to 112. In addition, Ecuador, Morocco and Peru announced their intention to become Parties. The General Assembly reaffirmed its determination to pursue the goal of achieving universal participation, and called upon all States that had not done so to become parties to UNCLOS and to the two Implementing Agreements (resolution 57/141, para. 1). From among 152 coastal States, 27 States (18 per cent) have yet to express their consent to be bound by the Convention. 25 out of 42 landlocked States are not yet parties to the Convention.

12. The 1995 Agreement for the implementation of the provisions of UNCLOS relating to the conservation and management of straddling fish stocks and highly migratory fish stocks (UNFSA) entered into force on 11 December 2001. There are now 34 parties to the Agreement. In consequence, the geographical scope application of this Agreement for those Parties covers substantial areas of the sea in the South Pacific, the North-West and South-West Atlantic, the northern part of the North Pacific Ocean, as well as the Arctic Ocean.

B. Declarations and statements under articles 310, 287 and 298 of UNCLOS

13. In the 2002 debate on oceans and the law of the sea, the European Union once more expressed its concern that some States had made declarations that appear to be reservations excluding or modifying the legal effect of certain provisions of the Convention, noting that such declarations cannot have any legal effect. In resolution 57/141, para. 3, the General Assembly called once again upon States to ensure that any declarations or statements that they have made or make when signing, ratifying or acceding to the Convention are in conformity therewith and to withdraw any of their declarations or statements not in conformity.

14. Article 287 of UNCLOS allows States to choose, by means of a written declaration, one or more specific means for the settlement of disputes concerning the interpretation or application of the Convention. Mexico declared in 2002 that it had chosen, in no order of preference: (i) the International Tribunal for the Law of the Sea established in accordance with annex VI; (ii) the International Court of Justice; and (iii) a special arbitral tribunal constituted in accordance with annex VIII. Mexico also declared that, pursuant to article 298 of the Convention, it did not accept the procedures provided for in part XV, section 2, with respect to the following categories of disputes: (i) disputes relating to sea boundary delimitations, or those involving historic bays or titles, pursuant to paragraph 1 (a) of article 298; (ii) disputes concerning paragraph 1 (b) of article 298.⁸

III. Maritime space

A. The continental shelf beyond 200 nautical miles: the work of the Commission on the Limits of the Continental Shelf

15. *Work of the Commission on the Limits of the Continental Shelf (CLCS).* The eleventh session of the Commission took place from 24 to 28 June 2002.⁹ Two sessions are scheduled to be held in 2003, the twelfth session from 28 April to 2 May 2003, and the thirteenth from 25 to 29 August 2003. If a submission is made at least three months before the August session, it will be followed by a two-week session of the subcommission.

Trust Funds related to submissions to the Commission and to participation of Commission members from developing countries in its sessions.

16. In 2002, seven requests were approved from developing States for reimbursement from the Trust Fund for preparation of submissions to the Commission, for expenses connected with attendance at a training course offered by Southampton Oceanography Centre, based on the outline for a five-day training course designed by the Commission for the delineation of the outer limits of the continental shelf beyond 200 nautical miles and for the preparation of a submission of a coastal State to the Commission (CLCS/24). As of December 2002, the fund contains \$1, 039,972 from contributions of over one million dollars made by Norway in 2000, and a contribution from Ireland at the end of 2002 of 90,000 Euros, to be received in three installments.¹⁰ By resolution 55/7, the General Assembly also created a Trust Fund to defray the cost of participation of the members of the Commission from developing States in the meetings of the Commission. At the end of 2002, Ireland contributed 50,000 Euros to the Fund, and Norway 500,000 Norwegian Kroner.

B. The Area: the work of International Seabed Authority

17. The International Seabed Authority was established by the Convention to organize and control activities directed at natural resources in the seabed area beyond the limits of national jurisdiction (the Area). The Authority held its eighth session at Kingston, Jamaica, in August 2002. Among the most important substantive matters discussed during that session was the first set of annual reports of the seven contractors for exploration for polymetallic nodules, and proposals for regulations for prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts.

18. A one-day seminar, open to all members and observers, was held on the prospects for hydrothermal polymetallic sulphides and cobalt-rich ferromanganese crusts in the Area. Marine geologists and biologists presented their latest findings on the status and characteristics of deep-sea polymetallic sulphides and cobalt-rich ferromanganese crusts, as well as the surrounding marine environment.¹¹ Many of the hydrothermal vent sites targeted by scientific researchers and bioprospectors are also of considerable interest to prospective seabed miners, thus giving rise to a possibility of a conflict between the Authority's responsibilities in respect of the marine environment and activities directed at bioprospecting.

19. With respect to the development of regulations for prospecting and exploration relating to polymetallic sulphides and cobalt-rich ferromanganese crusts, the Council of the Authority noted the need for a flexible approach to these regulations, particularly in view of the lack of scientific knowledge relating to deep sea ecosystems. It was also clear that polymetallic sulphides and cobalt-rich crusts were different from polymetallic nodules as well as distinct from one another. Particular ecological considerations arose with respect to polymetallic sulphides located at active hydrothermal vents. For these reasons members of the Council were in favour of different sets of regulations for the two resources and proposed taking a cautious approach to their elaboration. At the same time, it noted that any regulations must be consistent with the overall scheme contained in the Convention, the Agreement relating to the Implementation of Part XI and the existing regulations relating to polymetallic nodules. From the point of view of potential investors, the most difficult issues would be how to determine the size of the area for exploration so as to make exploration commercially viable while avoiding monopoly situations. The system for the Area also had to be competitive with regimes established for areas within national jurisdiction.

20. In its resolution 57/141, the General Assembly reiterated the importance of the ongoing elaboration by the Authority, pursuant to article 145 of the Convention, of rules, regulations and procedures to ensure the effective protection of the marine environment, the protection and conservation of the natural resources of the Area and the prevention of damage to its flora and fauna from harmful effects that may arise from activities in the Area.¹²

C. Maritime claims and delimitation of maritime zones

1. Conference on Maritime Delimitation in the Caribbean

21. The Conference on Maritime Delimitation in the Caribbean, an important regional effort aimed at facilitating the implementation of UNCLOS in the delimitation of maritime boundaries between States, as well as for securing technical assistance, met at its first session in Mexico City from 6 to 8 May 2002. The first session adopted the Rules of the Conference and opened a Registry of Delimitation Negotiations to allow States to register, by mutual agreement, the delimitation negotiations of one or more of their respective maritime zones. The main purpose of the registration process is to place a delimitation negotiation within the context of the Conference and to allow participating States to use the mechanism for technical and financial assistance established by the Rules. The delimitation negotiations are to be carried out exclusively by and between the States concerned, without the intervention of any third parties and in accordance with the terms agreed to by the States involved. Neither the Plenary nor the Authorities of the Conference, or other Participating States or Observers of the Conference may in any way interfere with these negotiations or make statements with respect to them.

22. In response to the request communicated to the Secretary-General of the United Nations by the Executive Secretary of the Conference, DOALOS, jointly with the United Nations Department of Economic and Social Affairs, established a technical cooperation project and trust fund entitled: Assistance to States Participants in the Conference on Maritime Delimitation in the Caribbean. This project and the trust fund will enable the United Nations Secretariat to provide institutional support and technical assistance to States Participants in the Conference on Maritime Delimitation in the Caribbean, in order to: (a) facilitate their participation in the plenary meetings; (b) assist them in covering costs related to their delimitation negotiations registered in the Registry of the Conference; and (c) ensure that they get wider access to the best qualified expert services within the framework of such negotiations or in preparation for them. Mexico contributed \$ 50,000 to the trust fund to make the project operational. In resolution 57/141, the General Assembly also took note of that trust fund and called upon States and others in a position to do so to contribute to it.

2. Other developments

23. Since the issuance of the last report, charts or lists of geographic coordinates, pursuant to the requirement of due publicity, have been deposited by Madagascar, Netherlands and Norway. DOALOS publishes descriptions of such deposits periodically in its Law of the Sea Information Circular. In 2002, the General Assembly once again encouraged States Parties to the Convention to deposit with the Secretary-General charts and lists of geographical coordinates, as provided for in the Convention.

24. Probably the most important recent event related to national claims was the proclamation by the newly independent Timor-Leste of a 12-nautical-mile territorial sea, 24-nautical-mile contiguous zone, 200-nautical-mile exclusive economic zone, as well as of a continental shelf in the South Pacific. An updated version of the table entitled "Summary of national claims to maritime zones" is available on the web site (www.un.org/Depts/los). It shows that only a few maritime claims are not compatible with the provisions of the 1982 Convention: about nine coastal States¹³ still maintain a territorial sea of more than 12 nautical miles, and only one State claims a contiguous zone of more than 24 nautical miles. On the other hand, 111 coastal States have proclaimed exclusive economic zones. Several States are also preparing submissions to CLCS on the continental shelf beyond 200 nautical miles. Despite extensive research, however, information regarding maritime claims may not always reflect the latest developments, owing to the lack of regular updates from Governments.

25. In order to improve information regarding legislative measures undertaken by States Parties in implementing UNCLOS, DOALOS circulated in February 2002 a questionnaire to all States, both parties and non-parties to the Convention, requesting input on the application of the provisions of UNCLOS. As of February 2003, replies have been received from 22 States Parties and two non-parties. Some of these replies also contained texts of national legislative acts or treaties that have contributed significantly to the development of the collection of national legislation and delimitation treaties, available on the Division's web site. The Division is examining the information received with a view to sharing the results with States as soon as practicable as part of an overall assessment of the implementation of UNCLOS. However, the quality of such assessment depends upon the replies received. In order to produce any meaningful analysis, many additional responses are required.

26. Several agreements and other developments regarding the delimitation of maritime boundaries and related issues have been reported in Africa, Asia, South Pacific, Europe and Latin America.¹⁴

27. During the General Assembly, some delegations referred to the signing by ASEAN countries and China of a Declaration on the Conduct of Parties in the South China Sea during the 8th ASEAN summit, which was considered a step towards a Code of Conduct in the South China Sea as a basis for a durable solution to the

disputes in the area. In January 2002, Iran sent a note to Kuwait protesting the July 2000 Agreement between Saudi Arabia and Kuwait concerning the submerged zone adjacent to the divided zone.

28. In Europe, three States concluded the Agreement between the Government of the Republic of Finland, the Government of the Republic of Estonia and the Government of the Kingdom of Sweden on the Common Maritime Boundary Point in the Baltic Sea of 16 January 2001.

29. In Latin America, a negotiations process under the auspices of the Organization of American States took place to settle the territorial dispute between Guatemala and Belize. Honduras stated that it had advanced discussions with Cuba and preliminary contacts with Mexico on the subject of maritime delimitation, within the framework of the Conference on Maritime Delimitation in the Caribbean. Several communications were received from Honduras and Nicaragua concerning hydrocarbon leases and exploration in both disputed areas in the Caribbean Sea and in the Gulf of Fonseca and Pacific Ocean.

30. In response to the statement by Peru, concerning the 18°21'00" parallel, Chile made a statement on its maritime boundary with Peru, on 15 March 2002, referring to international instruments agreed upon jointly with Ecuador: Declaration on the Maritime Zone or Declaration of Santiago, of 18 August 1952, Agreement on the Special Maritime Boundary Zone, signed at Lima on 4 December 1954, and Additional Clarification, Lima, 4 December 1954, stating that the maritime boundary between Chile and Peru had been clearly established in international agreements concluded in full compliance with international law, and dismissed the statement by Peru "as lacking any basis".

31. In response to the communication by Guyana concerning the Treaty on Delimitation of Marine and Submarine Areas between Trinidad and Tobago and Venezuela of 18 April 1990, Trinidad and Tobago addressed a note to Guyana in which it advised that the Treaty had been negotiated and concluded in accordance with customary international law and UNCLOS. During the General Assembly debate, Trinidad and Tobago announced that it was seeking to complete its maritime boundary negotiations with Barbados and to resume a similar process in respect of the maritime boundary with Grenada. Mexico announced that it had registered, within the framework of the Conference on Maritime Delimitation in the Caribbean, delimitation negotiations with Belize.

D. Access to and from the sea by landlocked developing countries and freedom of transit

32. Serious constraints on the overall socio-economic development of landlocked developing countries, owing to the lack of territorial access to the sea, remoteness and isolation from world markets and high transit costs, and related special needs of landlocked developing countries have been addressed most recently in the report of the Secretary-General entitled "Specific actions related to the particular needs and problems of landlocked developing countries: preparatory process for the International Ministerial Meeting on Transit Transport Cooperation" (A/57/340). The 57th session of the General Assembly accepted the offer of Kazakhstan to host the International Ministerial Conference of Landlocked and Transit Developing Countries and Donor Countries and International Financial and Development Institutions on Transit Transport Cooperation at Almaty in August 2003.

IV. Safety of navigation

33. *Overview of the legal regime in UNCLOS.* UNCLOS balances the right of the flag State to exercise rights of navigation with its duty to ensure that any ships flying its flag are safe for navigation. Article 94 enumerates several measures which the flag State is required to take in order to ensure safety at sea. Ships must be constructed and equipped in conformity with generally accepted international regulations, procedures and practices and be seaworthy. Each ship must be surveyed by a qualified surveyor before registration and at appropriate intervals thereafter. It must have on board such charts,

nautical publications and navigational equipment and instruments as are appropriate for the safe navigation of the ship. With respect to manning, labour conditions and the training of crews, the flag State must ensure that its measures conform to generally accepted international regulations, procedures and practices. The master, officers and crew must be fully conversant with and required to observe the applicable international regulations concerning the safety of life at sea, the prevention of collisions, the prevention, reduction and control of marine pollution, and the maintenance of radio communications.

34. Furthermore, articles 194(3)(b) and 217(2) require flag States to ensure their ships conform to rules protecting and preserving the marine environment. The flag State also has the responsibility to ensure that its ships are not used for illicit purposes and obey any rules on maritime security. Given IMO's global mandate in the field of safety of navigation and the prevention of marine pollution from vessels, and most recently also in the field of maritime security, most of the measures required will have been developed by IMO. Measures relating to labour conditions have been adopted by ILO, and IAEA has developed measures relating to the transport of nuclear material.

35. While the flag State bears primary responsibility for ensuring safety at sea, the coastal State also has been assigned some responsibility under UNCLOS. Coastal States must give appropriate publicity to any danger to navigation of which they have knowledge within their territorial sea (article 24(2)), in archipelagic waters (article 52), in straits used for international navigation (article 44) and within archipelagic sea lanes (article 54). While UNCLOS grants coastal States a discretionary right to establish sea lanes or traffic separation schemes, article 211 does require States to promote the adoption of routing systems designed to minimize the threat of accidents, which might cause pollution of the marine environment.

36. All these aspects of safety of navigation have been regulated over time within the framework of a number of UN organizations, in particular IMO, constituting a comprehensive and substantial body of global rules and regulations. Indeed, many shipping accidents and resulting loss of life and/or pollution are not the result of inadequate regulation at the global level, but are the direct result of ineffective flag State implementation and enforcement. Therefore, the solution to prevention of shipping accidents would appear to lie not in the adoption of more rules, but rather in ensuring that existing rules are effectively enforced. IMO has emphasized that safer shipping demands a safety culture throughout all components of the shipping industry. Full implementation can only be achieved if a pro-active safety-oriented attitude is established among all those involved with the operation of ships.¹⁵

37. However, recent developments demonstrate that some States are no longer willing to leave the responsibility for safe navigation to the flag State alone. An ageing world oil tanker fleet, unsatisfactory ship construction standards, ineffective flag State implementation, the increasing volume of hazardous and dangerous goods being transported by sea, as well as recent oil spills have been cited as some of the reasons why ships should not be able to exercise unconditional rights of navigation and why they should be subjected to more control by the coastal State.

A. Ship construction and equipment

38. The generally accepted international regulations, procedures and practices relating to ship construction, equipment and seaworthiness referred to in articles 94 and 217 of UNCLOS are those contained in IMO instruments, especially the International Convention for the Safety of Life at Sea (SOLAS), the International Convention on Load Lines (LL Convention) and the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78). These are considered to be generally accepted because all

instruments are adopted by consensus by the 162 IMO members, which represent all regions of the world. Moreover, States Parties flag more than 90 per cent of the world's merchant fleet.

39. The time-table for the accelerated progressive phasing-out of single-hull tankers, adopted in April 2001 after the *Erika* disaster in the form of revised regulation 13G of Annex I of MARPOL 73/78, entered into force on 1 September 2002 together with the associated Condition Assessment Scheme (CAS). An electronic database has been set up to contain particulars of the Statements of Compliance for tankers which have undergone a successful survey.¹⁶ The CAS was amended by MEPC 48 to include the Model Survey Plan and Mandatory Requirements for the Safe Conduct of the CAS (resolution MEPC.99(48)).¹⁷ The amendments are expected to enter into force on 1 March 2004.

40. The recent oil spill involving the 26-year old single-hull vessel *Prestige* which was carrying 77,000 metric tons of heavy fuel oil, has raised grave concerns in a number of coastal States and led to calls for further acceleration of the phasing out of single-hull vessels. The European Commission (EC) has launched a number of initiatives in accordance with its "Communication on improving safety at sea in response to the *Prestige* accident" adopted on 3 December 2002 and the Transport Council's conclusions of 6 December 2002. On 20 December 2002, the Commission proposed a new regulation, advancing the calendar for the phasing-out of single-hull tankers to ensure that category 1 tankers will not operate beyond 23 years and 2005 or 28 years of age and 2010 for category 2 and 28 years old, and 2015 for category 3 tankers. The proposed deadline of 2010 for category 2 tankers is the same as that in the United States' Oil Pollution Act of 1990. The Commission further proposed that CAS should apply from 2005 to all oil tankers over 15 years old, not just those in categories 1 and 2.

41. According to the EC, the new regulation would not disrupt oil supply given the current overcapacity in the world tanker fleet and the large number of tankers on order. There would however be an economic impact.¹⁸ The Commission has proposed to the European Parliament and the Council that they adopt the new regulation as soon as possible so that it can enter into force in March 2003. The draft regulation refers to article 211, paragraph 3 of UNCLOS. The Commission has called upon Member States to ensure that IMO adopts similar measures and that an appropriate inspection scheme, equivalent to CAS, is introduced also for double-hull oil tankers beyond 15 years of age. The Commission has also proposed to prohibit the transport of heavy grades of oil in single-hulled tankers bound for or leaving ports of Member States. Spain has already adopted legislation banning such vessels from its ports.

42. The loss of 116 bulk carriers and 618 lives over the past ten years, as well as recent studies on bulk carrier safety have indicated the need for further measures to improve safety.¹⁹ IMO amended Chapter XII of SOLAS in December 2002 to introduce new requirements for the installation of high level alarms and level monitoring systems on all bulk carriers by 1 July 2004, regardless of their date of construction.²⁰ As of 1 July 2002, new ships must meet the requirements of revised Chapter V of SOLAS regarding the installation of navigational systems and equipment, such as the Global Navigation Satellite System (GNSS), the Electronic Chart Display and Information System (ECDIS), the Automatic Identification System (AIS) and the Voyage Data Recorder (VDR). Furthermore, as a result of amendments adopted at the SOLAS Conference in December 2002 ships of less than 50,000 gross tonnage, other than passenger ships and tankers, will be required to fit AIS at the latest by 31 December 2004.

43. *Ship recycling.* Vessels at the end of their useful lives are sold for scrap on the international market. In 2001, 3.4 per cent of the world's fleet was sent for scrap, representing an increase of 25.2 per cent over last year. Most of these were tankers, due to depressed freight revenues and the disposal of some

single-hull tankers. There are few alternatives to ship recycling and it is generally considered the best environmental option for all time-expired tonnage. Demand for ship recycling is expected to rise in the near future as single-hull tankers are progressively being phased-out. In ship recycling, virtually nothing goes to waste; if properly handled, ship recycling is a “green” industry. However, while the principle of ship recycling may be sound, the working practices and environmental standards in the yards often leave much to be desired.

44. Draft Guidelines being developed by IMO recognize that, while ultimate responsibility for conditions in the yards has to lie with the countries in which they are situated, other stakeholders must be encouraged to contribute towards minimising potential problems in the yards. IMO has accepted an important role in ship recycling, in the development of measures to prepare a ship for recycling. It also has coordinated activities with the ILO and the Basel Convention. The IMO guidelines based on the “Industry Code of Practice”, which was developed by an Industry Working Party on Ship Recycling are to be adopted as a resolution by the Assembly in 2003. The guidelines are addressed to all stakeholders in the recycling process, including administrations of ship building and maritime equipment supplying countries, flag, port and recycling states, as well as intergovernmental organizations and commercial entities such as shipowners, ship builders, repairers and recycling yards.

45. A key element of the guidelines will be the introduction of the concept of a “Green Passport” for ships containing an inventory of all materials potentially hazardous to human health or the environment used in the construction of a ship and would accompany the ship throughout its working life. Successive owners of the ship would maintain the accuracy of the Green Passport and incorporate into it all relevant design and equipment changes, with the final owner delivering it, with the vessel, to the recycling yard. ILO and the Basel Convention have also been involved in this initiative together with representatives of the shipping industry and environmental NGOs - an excellent example of interagency and stake-holder cooperation.

B. Training of crew and labour conditions

46. Some 80 per cent of marine casualties are estimated to be due in some part to human error. The importance therefore of adequate training, and appropriate living and working conditions for seafarers cannot be overstated. The instruments that flag States must take into account when legislating for manning, labour conditions and crew training and practices are in SOLAS (manning requirements), ILO instruments (labour standards) and the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (the STCW Convention) (training requirements).

47. IMO has continued to take efforts to ensure that the minimum requirements set out in the 1995 amendments to the 1978 STCW Convention are being implemented. 108 Parties out of 144 current Parties have been confirmed by the MSC to have communicated information demonstrating that they have given full and complete effect to the relevant provisions of the STCW.²¹ This list will be updated every five years. August 1st 2002 marked the end of the six-month grace period beyond the STCW deadline approved by IMO to enable seafarers to obtain the necessary certification. Any seafarers without certificates and documentary evidence attesting compliance with the revised STCW requirements could face major problems during port State control inspections. IMO has noted that major non-conformities with the International Safety Management (ISM) Code could be raised against a ship and the company in cases where seafarers did not hold the necessary certification in accordance with statutory requirements.

48. The total number of seafarers worldwide is estimated at 1,227,000, comprising 404,000 officers and 823,000 ratings, with a comparatively small number of labour-supplying countries.²² According to

a recent report prepared by ILO, substantial variations in living and working conditions continue to exist between vessels operating under different flags and there is discrimination against non-domiciled seafarers. While only 28 per cent of open-register countries, which generally tend to employ non-nationals, had national legislation covering non-national seafarers, labour-supplying countries could not provide legal protection for their seafarers working on foreign-flagged vessels. The ILO concludes that there is a need for regulation at the national and international levels to be reshaped and better enforced in order to safeguard seafarers. In addition, IMO has noted the lack of national regulations to address enforcement of criminal law on board vessels and is collecting information on current State practice and domestic law.²³

49. ILO's report was considered at a tripartite²⁴ Meeting of Experts on Working and Living Conditions of Seafarers on board Ships in International Registers in May 2002. During the discussions, it was pointed out that the requirement for a "genuine link" between the flag State and the ship in article 91 of UNCLOS was fundamental to decent work at sea. Furthermore, flag States failing to provide coverage for non-domiciled seafarers in their national legislation were not discharging their obligations under article 94 of UNCLOS. The experts recognized that consideration should be given to a possible mechanism by which a performance measurement for flag States in respect of ILO instruments might be introduced. In the context of enforcement, they considered that due consideration should be given to the relevant provisions of UNCLOS and the relevant provisions of the ISM Code. The Experts stressed the importance of a number of principles and rights, including that: (1) the flag State has the overall responsibility for ensuring that the rights of seafarers are respected in relation to service on board ships flying its flag; (2) every flag State should have in place the means to enforce decent living and working conditions on ships flying its flag wherever they may be in the world; (3) all States shall have in place the necessary mechanisms for monitoring living and working conditions on ships visiting their ports, in accordance with international instruments in force; and (4) all States should provide easy access to simple and inexpensive procedures enabling all seafarers, regardless of nationality and domicile, to make complaints alleging a breach of national legislation on living and working conditions or employment contracts and/or articles of agreement.²⁵

C. Transport of goods and passengers

50. Most international trade is carried by sea. More than half of the packaged goods and bulk cargoes transported by sea today can be regarded as dangerous, hazardous or harmful to the environment. The cargoes concerned include products which are transported in bulk - such as solid or liquid chemicals and other materials, gases and products for and of the oil refinery industry and wastes.²⁶

1. Regulations governing the transport of dangerous goods

51. The basic feature of all systems of rules to control the transport of dangerous goods has been their grouping on the basis of the hazards presented by the goods during transport. The UN Committee of Experts on the Transport of Dangerous Goods has developed and recommended a nine-class substance identification and classification system based on hazardous properties establishing basic requirements for all transport modes. Requirements governing the transport of dangerous goods by sea are contained in SOLAS, Chapter VII which requires each Contracting Government to issue, or cause to be issued, detailed instructions on safe packing and stowage of dangerous goods, including the precautions necessary in relation to other cargo. More detailed requirements are set out in the International Maritime Dangerous Goods (IMDG) Code, which applies to all classes of hazardous materials, including radioactive material. Several other IMO Codes also deal with the carriage of dangerous goods.²⁷

52. SOLAS Chapter VII was amended on 24 May 2002 by the MSC in order to provide for the mandatory application of the IMDG Code as of 1 January 2004, or on a voluntary basis as from 1 January 2003 (resolution MSC.123(75)). MSC also adopted a new revised text of the Code (2000 edition) incorporating amendments adopted by the UN Committee of Experts on the Transport of Dangerous Goods in December 2000 (resolution MSC.122(75)). Some provisions of the Code will remain recommendatory.²⁸ Paragraph 1.2.2 of the INF Code now provides that the IMDG Code “shall” apply to the carriage of INF cargo. The MSC decided that the revision of SOLAS Chapter VII did not entail any consequential amendments to Annex III of MARPOL 73/78, apart from updating the footnote referencing the Code.

2. Recent developments regarding the transportation of dangerous goods

53. *Radioactive materials.* The shipments of mixed oxide fuel between the United Kingdom and France and Japan continue to be of great concern to the coastal States along the routes currently used for those shipments. Ministers participating in the Fifth International Conference on the Protection of the North Sea (March 2002), called for further efforts at all levels to examine and improve measures and international regulations relevant to the international maritime transport of radioactive materials consistent with international law, recalling the maritime rights and freedoms provided for in UNCLOS. They agreed to consider the issue of maritime transport of radioactive material at a ministerial meeting on the environmental impacts of shipping to be held in 2006 at the latest. During the IMO/UNEP Workshop on Marine Pollution Prevention and Environmental Management in Ports in the Wider Caribbean Region in May 2002, participants recommended that countries in the Wider Caribbean Region should be notified in advance of shipments of radioactive materials through the region.²⁹ At their third Summit meeting in July 2002, the ACP Heads of State and Government expressed their strong objection to the transport of nuclear and other hazardous materials through the waters around ACP States and called for the immediate cessation of such practice in order to prevent any occurrence of accidents that could seriously threaten their sustainable development and the health of their peoples.³⁰

54. In August 2002, the Pacific Island Forum, while noting the reservation of Australia, reiterated its continuing serious concerns over the shipment of radioactive materials through the region; called on shipping States to meet with Forum members as soon as possible and to mandate their representatives, at a high political level, to seriously consider and progress the proposals that Forum members have developed for innovative arrangements and assurances. These proposals include acceptance by shipping States of full responsibility and liability for compensation for any damage which may result directly or indirectly from transport of radioactive materials through the region; the assurance by those States that the highest possible safety standards are met; and the appropriate advance notification and consultation by shipping States with States in the region through which the shipments pass, taking into account security considerations and the legitimate interests of Forum member countries.³¹

55. The 46th session of the IAEA General Conference adopted resolution GC(46)/RES/9 on 20 September 2002, noting concerns about a potential accident or incident during the transport of radioactive materials by sea and about the importance of the protection of people, human health and the environment, as well as protection from actual economic loss, as defined in relevant international instruments, due to an accident or incident. The Conference recalled maritime, river, and air navigation rights and freedoms, as provided for in international law and as reflected in relevant international instruments and recalled the obligation that States have under international law to protect and preserve the marine environment. It urged Member States of IAEA to ensure that their national regulatory documents governing the transport of radioactive materials are in conformity with the 1996 edition of the Agency’s Transport Regulations; and encouraged Member States to avail themselves of the

Transport Safety Appraisal Service with a view to achieving the highest levels of safety during the transport of radioactive materials. The Conference welcomed the practice of some shipping States and operators of providing in a timely manner information and responses to relevant coastal States in advance of shipments for the purposes of addressing concerns regarding safety and security, including emergency preparedness, and invited others to do so in order to improve mutual understanding and confidence regarding shipments of radioactive materials. Noting that the information and responses provided should in no case be contradictory to the measures of physical protection and safety, the Conference emphasized the importance of maintaining dialogue and consultation aimed at improving mutual understanding, confidence-building and enhanced communication in relation to the safe maritime transport of radioactive materials. The Conference expressed the belief that the principle of strict liability should apply in the event of nuclear damage arising from an accident or incident during the maritime transport of radioactive materials. It stressed the importance of having effective liability mechanisms in place to ensure against harm to human health and the environment, as well as actual economic loss due to an accident or incident during the maritime transport of radioactive materials. It stressed the importance of wide adherence to the international nuclear liability regime established by the Vienna Convention on Civil Liability for Nuclear Damage, as amended in 1997, and the related treaties adopted under IAEA auspices. Finally, the IAEA resolution urged Member States to participate in the 2003 International Conference on the Safety of Transport of Radioactive Material with a view to addressing in a comprehensive way and following up all necessary issues contained in the agreed Conference programme. In its resolution 57/141, the General Assembly welcomed the adoption of resolution GC(46)/RES/9. The WSSD in its Plan of Implementation had recalled paragraph 8 of resolution GC(44)/RES/17 of the IAEA General Conference (see A/56/58, para. 136).

56. *Other dangerous goods.* Strong concerns have also recently been voiced regarding the risk posed by the transport of other dangerous cargo, such as heavy fuel oil. In response to the oil spill from the *Prestige*, the European Commission has proposed a new regulation to prohibit the transport of heavy grades of oil in single-hulled tankers bound for or leaving ports of a Member State of the European Union. Some States have already adopted unilateral measures in that regard. Furthermore, the European Transport Council has agreed to reinforce the mechanisms for the control of maritime traffic along the coasts of Member States through the establishment, where appropriate and in accordance with international law, of a preventive distance from the coast for ships known to be substandard. It has invited Member States to adopt measures in compliance with the international law of the sea, which would permit coastal States to control and possibly limit in a non-discriminatory way, the transit of vessels carrying dangerous and polluting goods, within 200 miles of their coastline, and it has invited the Commission to examine measures to limit the presence of single-hull tankers of more than 15 years of age carrying heavy grades of oil within the EEZ of the Member States, or, where appropriate and in accordance with international law, within 200 miles of their coastline. However, it is doubtful whether this proposal is in conformity with the law of the sea. At its meeting in December 2002, the European Council agreed that the conclusions of the Transport Council should be implemented in all their aspects without delay.

57. Some European coastal States have already taken unilateral action against single-hull tankers 15 years or older carrying heavy fuel oils. Spain, France and Portugal have banned such vessels from their EEZs and have taken measures to enforce the ban. Regrettably, this measure is not in conformity with UNCLOS, article 58. Italy has said that it supports the implementation of measures to force unsafe oil tankers out of the waters close to their countries.³² Morocco has informed IMO that the entrance of such vessels to its EEZ is subject to prior notification.³³ During the 76th session of the MSC in December 2002, several delegations cautioned against the taking of unilateral measures, emphasizing that

measures should be discussed and decided within IMO, which is the competent organization to regulate safety, security and environmental protection matters affecting international shipping.³⁴

58. In a letter addressed to the Secretary-General of the United Nations, dated 20 December 2002, the Vice-President of the European Commission stated that many elements of international maritime law and the law of the sea, in its present state, represented the balance of interest as they stood several decades - if not centuries - ago. Many ships now carry large quantities of hazardous cargoes that may cause ecological disaster for coastal States in case of accident. The EC and Member States intended to actively promote the re-examination of international rules concerning the law of the sea within the United Nations, the IMO and other relevant forums, to adapt its provisions to the new requirements of maritime security in the 21st century.³⁵ However, most recently Belgium, France, Ireland, Portugal, Spain and the United Kingdom have proposed the designation of a Western European Particularly Sensitive Sea Area in a submission to the 49th session of the MEPC, 14-18 July 2003 (document MPEC 49/8/1).

59. In its resolution 57/141, the General Assembly noted with deep concern the extremely serious damage of an environmental, social and economic nature brought about by oil spills as a result of recent maritime accidents which have affected several countries; and therefore called upon all States and relevant international organizations to adopt all necessary and appropriate measures in accordance with international law to prevent catastrophes of this kind from occurring in the future.

60. UNCLOS only addresses the carriage of dangerous goods by ships in the territorial sea. Article 22 gives the coastal State the right in its territorial sea to require ships carrying nuclear or other inherently dangerous or noxious substances or materials to confine their passage to such sea lanes, as it may designate, taking into account the recommendations of the competent international organization. Article 23 requires ships carrying nuclear or other inherently dangerous or noxious substances to carry documents and observe special precautionary measures established for such ships by international agreements. Consideration might be given as to whether such precautionary measures have been developed as envisaged in UNCLOS.

61. The transport of dangerous goods is not specifically regulated in the articles dealing with the EEZ. UNCLOS, article 56 gives coastal States jurisdiction with regard to the protection and preservation of the marine environment in the EEZ, while article 58 provides that all States enjoy freedom of navigation. In exercising their rights of navigation States must have due regard to the rights and duties of coastal States and must comply with the laws and regulations adopted by the coastal State in accordance with the provisions of UNCLOS and other rules of international law in so far as they are not incompatible with Part V of UNCLOS. However, article 211, paragraph 6, permits the coastal State to adopt measures, including navigational practices, more stringent than what is provided by the generally accepted international rules and standards for the prevention, reduction and control of pollution of the marine environment from vessels, for a clearly defined area of its EEZ if, because of its oceanographical and ecological conditions, as well as the utilization or the protection of its resources and the particular character of its traffic, it requires special mandatory measures.

3. Transport of passengers and claims

62. A new legal instrument to provide compensation for injuries to and death of ships passengers was adopted at IMO in November 2002 in a Protocol to amend the Athens Convention Relating to the Carriage of Passengers and their Luggage by Sea, 1974. The new instrument will provide for adequate compensation for death and personal injury claims and claims for loss of or damage to luggage and vehicles. As well as raising limits of liability for passenger claims, the Protocol replaces the fault-based

liability system with a strict liability system for shipping related incidents, up to a limit not less than 250,000 SDRs. If the loss exceeds the limit, the carrier is further liable - up to a limit of 400,000 SDR per passenger - unless the carrier proves that the incident occurred without the fault or neglect of the carrier.

D. Routeing and nautical charts

1. Safe routes for navigation

63. Safe routes for navigation are of essential importance for the safety of navigation and the prevention of marine pollution. IMO is recognized as the only international body responsible for establishing and adopting measures on an international level concerning ships' routeing systems for use by all ships, certain categories of ships or ships carrying certain cargoes, under SOLAS Chapter V and the IMO General Provisions on Ships' Routeing (IMO Assembly resolution A.572(14), as amended). SOLAS revised chapter V entered into force on 1 July 2002 with the regulations on ship routeing, ship reporting and vessel traffic services were not revised, only renumbered. Also relevant for safe navigation are Rules 1(d) and 10 of the International Regulations for Preventing Collisions at Sea (COLREG) which define, respectively, the competence of IMO to adopt traffic separation schemes (TSS) and the main technical regulations to be followed in this regard. It is also of crucial importance that routes are safe from criminal activities (see section V).

64. *Archipelagic sea lanes.* Indonesia informed IMO that it had designated some of the archipelagic sea lanes (except the sea lane in the Leti Strait and in part of the Ombai Strait in the maritime area between the Republic of Indonesia and the Democratic Republic of Timor Leste) pursuant to the partial system of archipelagic sea lanes in Indonesian waters adopted by IMO in 1998 by resolution MSC.72(69) by Regulation No. 37, Year 2002, "Rights and Obligations of Foreign Ships and Aircraft Conducting the Rights of Archipelagic Sea Lane Passage", promulgated by the Indonesian Government on 28 June 2002 and effective on 28 December 2002.³⁶ The Regulations provide that the sea lanes which have been excluded can be used for international navigation and might be accommodated for rights of transit passage.

65. *Ship routeing measures.* During 2002, IMO adopted new TSSs in the Red Sea and Off Cape La Nao and Off Cape Palos (Spain) and amended the existing TSSs in the Strait of Bab-el Mandeb, in the Baltic Sea, in the Gulf of Finland, in the Bay of Fundy and Approaches (Canada), off the coast of France, off the west coast of the United States of America and the coast of Canada. It also amended the associated routeing measures.³⁷

66. IMO also adopted three new mandatory no anchoring areas in the Florida Keys, United States of America; a new area to be avoided around the Malpelo Island, Colombia; a 10 n.m. precautionary area around a Floating Production Storage and Offloading Vessel off the coast of Canada; amended areas to be avoided off the coast of Florida and Washington, United States of America, and in the region of the Shetland Islands, United Kingdom; recommended routes off the Mediterranean coast of Egypt; recommended tracks and a precautionary area for the Red Sea and a proposed Recommendation on navigation through the Gulf of Finland (resolution MSC.138(76)). Spain announced at the meeting of the IMO Council, 25 November 2002 that it intended to distance the transit of ships carrying dangerous goods from the current Finisterre traffic separation scheme and other sea lanes and would soon present a proposal to IMO on this issue. HELCOM adopted a Declaration on the Safety of Navigation and Emergency Capacity in the Baltic Sea Area which identified a series of routeing measures, reporting measures and the enhanced use of pilotage to improve navigation in the Baltic Sea and Gulf of Finland.

67. IMO adopted three mandatory ship reporting systems during 2002 for: (1) Greenland Waters (resolution MSC.126(75); (2) Gulf of Finland in the Baltic Sea, and (3) the Adriatic Sea (resolution MSC.139(76)). Amendments were also adopted to the existing mandatory ship reporting system “Off Ushant” (France) by resolution MSC.127(75). The European Parliament and Council established a Community vessel traffic information system in 2002 with a view to enhancing safety and efficiency of maritime traffic, improving the response of authorities to incidents, accidents or potentially dangerous situations at sea, including search and rescue operations, and contributing to a better prevention and detection of pollution by ships.³⁸

2. Capacity-building for the production of nautical charts

68. Hydrographic surveys and nautical charting clearly play a crucial role in enabling the identification of dangers to navigation to which States are required by UNCLOS to give appropriate publicity and in providing information necessary to identify measures required to improve and ensure safe navigation. The enhanced safety of navigation that adequate nautical charts and information provide contributes directly to the protection of vulnerable marine ecosystems through a reduction in ship groundings and maritime accidents. Furthermore, the data collected and the services offered by national Hydrographic Offices have uses beyond safety of navigation and are important components in marine pollution, coastal zone management and sensitive ecosystem identification and monitoring.

69. While paper charts are still being used for navigational purposes, there are significant benefits to electronic navigational charts (ENCs) both in terms of navigational safety and improved operational efficiency. IMO has requested that member governments encourage their National Hydrographic Offices to produce ENCs and provide the associated updating service as soon as possible. The Baltic States decided to ensure that major shipping routes and ports were covered by ENCs by the end of 2002, and that port State control of paper charts was intensified on board ships with a draught of 11 metres or more, oil tankers with a draught of 7 meters or more, chemical tankers and gas carriers irrespective of size and ships carrying a shipment of INF cargo.³⁹

70. The International Hydrographic Organization (IHO) and IMO have emphasized the need for coastal States to discharge their responsibilities with respect to surveying and charting waters under their jurisdiction with a view to improving safety of navigation and the protection of the marine environment. In resolution 53/32, the General Assembly invited States to cooperate in carrying out hydrographic surveys and nautical services for the purpose of ensuring safe navigation as well as to ensure the greatest uniformity in charts and nautical publications and to coordinate their activities so that hydrographic and nautical information is made available on a worldwide scale. In its resolutions 56/12 and 57/141, the Assembly invited IHO, in cooperation with other relevant international organizations and interested Member States, to provide the necessary assistance to States, in particular to developing countries, in order to enhance hydrographic capability to ensure, in particular, the safety of navigation and the protection of the marine environment.

71. Revised Chapter V of SOLAS includes a new regulation 9 on hydrographic services according to which Contracting Governments undertake to arrange for the collection and compilation of hydrographic data and the publication, dissemination and keeping up to date of all nautical information necessary for safe navigation. In particular, Governments must prepare and issue nautical charts, sailing directions, lists of lights, tide tables and other nautical publications to ensure safe navigation. They should also promulgate notices to mariners in order that nautical charts and publications be kept up to date to ensure the greatest possible uniformity in charts and nautical publications and to take into account relevant international resolutions and recommendations.

72. In order to assist full implementation of regulation 9, IHO has prepared a new resolution on provision of hydrographic services to be considered by IMO Assembly at its 23rd session (November-December 2003). The draft revised text of the resolution recommends that Governments take all necessary measures to arrange for or encourage the prompt transmission of new hydrographic information to the IHO or to the hydrographic authorities in those countries which issue charts covering waters off their shores and otherwise ensure the earliest and widest dissemination of hydrographic information. It invites Governments to ensure that hydrographic surveying is carried out, as far as possible, adequate to the requirements of safe navigation and according to the hydrographic survey standards established by the IHO. Governments are also invited to promote, through their national maritime administrations, the use of Electronic Chart Display and Information Systems (ECDIS) together with official ENCs; to cooperate with other Governments having little or no hydrographic capabilities as appropriate in the collection and dissemination of hydrographic data; to promote in consultation with, and with the assistance of, the Organization and the IHO support for a Government which may request technical assistance in hydrographic matters; and to establish Hydrographic Offices, where they do not exist, in consultation with the IHO.⁴⁰

73. Safety of navigation – especially its enhancement through capacity building for the production of nautical charts – is a fundamental goal of the IHO, which seeks to expand the quality and coverage navigational charts and services through: (1) coordination amongst national hydrographic offices; (2) uniformity of nautical charts and documents; (3) adoption of reliable and efficient methods of carrying out and exploiting hydrographic surveys; and (4) development of the sciences in the field of hydrography and the techniques employed in descriptive oceanography.

74. IHO observes that Chapter V of SOLAS has had the greatest impact on the global significance of hydrography. However, both the WSSD and article 76 of UNCLOS also carried an implied requirement for hydrographic surveys using modern techniques, effective management of the information acquired and an application of this information to further safety of navigation and/or the assessment of the marine environment.

75. *Capacity-building.* IHO notes that both paragraphs 30 and 35 of General Assembly resolution 57/141 relate directly to the need to increase the capacity of States to provide an enhanced hydrographic capability to ensure safety of navigation and protection of the marine environment. Capacity building was a high priority, strategic issue of the IHO and there had been notable advances in metrics indicative of increased capacity. Although membership in the IHO is not a prerequisite for assistance, it facilitates assistance through enhanced communication and increased visibility amongst other members. Membership has increased from 70 to 73 in 2002 and the organization has increased over 25 per cent since UNCLOS entered into force in 1994.

76. The most responsive and focused work of the IHO occurs through its Fourteen Regional Hydrographic Commissions, which encompass virtually all navigable seaways and provide a mechanism to bring regional focus to cooperative efforts, capacity-building and increased chart production. Full membership in a Regional Commission was open to IHO Member States in the region, but associate membership was offered to any State with a maritime interest in the region. As an associate member, a developing State with a desire to create or enhance its hydrographic capability is introduced to other members ready and able to assist. The assistance offered is varied. In some instances, Member States will offer to survey, process, produce and maintain the necessary navigation information. Other Member States offer financial and/or technical assistance to the developing State. In most cases, an initial effort includes meetings with developing State government officials to advocate

the necessity and benefits of establishing a hydrographic service and initial liaison with potential funding sources.

77. IHO and/or the IHO Regional Commissions had conducted the following technical visits during 2002: Albania, Bangladesh, Cape Verde, Colombia, Gabon, Ghana, Guatemala, Guinea, Lithuania, Mexico, Nigeria, Mauritania, Panama, Senegal and Sierra Leone. Seven additional countries in West Africa would be visited in 2003.

78. IHO stated that it did not have resources to provide financial assistance to developing States: it seeks to develop partnerships with donor organizations. Notable efforts in this endeavour during 2002 included: the Central American Hydrographic Project- A partnership with IHO, International Maritime Activity (IMA) and the Central American Commission for Maritime Transport (COCATRAM); the MEDA Project – Partnership with IHO, IMA and European Commission providing hydrographic and cartographic equipment and training to countries of the southern and south-eastern Mediterranean; CAMCHARTNET Project – Partnership with IHO, IMA and European Commission providing hydrographic and cartographic equipment and training to countries on the Black Sea; and the Marine Electronic Highway (MEH) – Partnership with IHO, Global Environmental Facility, World Bank and IMO providing safety of navigation enhancements for the Straits of Malacca and Singapore. The MEH is envisioned to be a regional network of marine information technologies linked through ENC-ECDIS.

79. UNEP reports that with the World Bank's support, a full hydrographic survey was taken of the southern Red Sea covering 750 square nautical miles. This was a significant achievement as the area had not been comprehensively surveyed for over a hundred years and was considered a navigational 'high risk' as there were no official traffic separation schemes in place. The hydrographic survey identified for the first time the correct location of rocks and other hazards. The results have been accepted by the United Kingdom Hydrographic Office (UKHO) allowing for the publication of new charts of the southern Red Sea. A proposed vessel traffic separation scheme was presented to IMO in December 2002 and approved at MSC 76. The new charts and routes will make a substantial improvement to navigation safety in the region. Further enhancements and improvements are envisaged by PERGSA through the establishment of lighthouses and an automatic vessel monitoring system.

80. *Training.* IHO explained that education was essential in creating and maintaining a modern hydrographic service. Over 20 of IHO Member States offer more than 30 technical training programs in hydrography conforming to IHO Guidelines. In some instances these programs are offered free of charge while others provide scholarships to those attendees that demonstrate the need. The IHO sponsors hydrographic and cartographic training at the IMA with tuition funded by the EU and Italy. The effectiveness of these training programmes depend upon minimum standards of competency for hydrographic surveyors to be demonstrated by successful graduates, which are set by an advisory board of experts from IHO, International Federation of Surveyors (FIG) and International Cartographic Association (ICA). Curricula of the training programs are audited against these standards to ensure an adequate level of training. In 2002 minimum standards of competency for nautical cartographers were established.

81. *Data and publications.* The IHO has provided recommended standards for the format of digital hydrographic data bases through its publication S-57 "IHO Transfer Standard for Digital Hydrographic Data." In acknowledging the broader use of hydrographic data beyond the production of nautical charts, the IHO began, in 2002, to extend the utility of the S-57 standard for additional oceanographic applications. Several publications of the IHO track the status of hydrographic survey and nautical

cartography. Special Publication 55, "Status of Hydrographic Surveying" was last published in 1998 and is scheduled for revision and updating in 2003. Special Publication 59, "Status of Hydrographic Surveying and Nautical Charting in Antarctica," was last updated in 2001 and will be updated and incorporated in S-55 during 2003. Publication M-11, "Catalogue of International Charts" was last updated in 1997 and is scheduled for revision in 2003.⁴¹ A report on the status of ENC's currently underway will relate chart coverage to major shipping routes with a view to highlighting the regions of the world most deficient in coverage.

82. The IHB, acting as the secretariat of the IHO, cooperates with IMO, IOC, IMA and other organizations. Apart from the memoranda of understanding it has with IMO and IMA, relationships function through terms of references for joint committees including IMO-IHO Harmonization Group on Electronic Chart Display and Information System (ECDIS); Joint IHO-IOC Guiding Committee for the General Bathymetric Chart of the Oceans; Sub-Committee on Undersea Feature Names; Sub-Committee on Digital Bathymetry; IHO-IAG-IOC Advisory Board on the Law of the Sea; and the IEC-IHO Harmonizing Group on Marine Information Objects.

83. *Matters Requiring Further Action.* Although membership in the IHO has increased to 73 States with an additional eight States pending, this is much fewer than the 162 members of IMO, and IHO is actively seeking new members. As a consultative and technical organization, the IHO is well positioned to provide assistance to developing countries wishing to establish a modern hydrographic service. However, outside funding from donor partners is essential.

84. In summary, the IHO has a long history of advocating safety of navigation through the increased quality and coverage of nautical charts and information. It is aggressively pursuing, especially in developing countries, increased capacity to collect and process hydrographic data using modern techniques and the adequate coverage of accurate nautical charts and information. These activities are essential components for the safe and efficient use of the oceans as envisioned in UNCLOS.

E. Implementation and enforcement

1. Flag State implementation and enforcement

85. Today flag States are predominantly countries maintaining open-registers with generally little maritime infrastructure.⁴² While some are keenly aware that operating a ship register entails responsibilities, a minority of flag States show little interest in these responsibilities; and have a performance record that does credit neither to themselves nor to the shipowners who persist in using them.⁴³ Their ships are substandard, that is through their physical condition, their operation or the activities of their crew, they fail to meet basic standards of seaworthiness, violate international rules and standards, and pose a threat to life and/or the environment.

86. As OECD studies demonstrate, maintaining a ship up to international standards is extremely expensive; furthermore, it is not difficult for owners to avoid full liability for damage caused by their vessels. Consequently, there is a positive economic incentive for some owners/operators not to meet international requirements. Even if a flag State eliminates a substandard ship from its register, the owner can easily find another accommodating flag State. Therefore, the current system appears to facilitate, rather than deter the continuous operation of substandard ships. Lack of effective flag State control over ships flying its flag can pose a threat to the safety of navigation and the marine environment, and can lead to overexploitation of living marine resources. In this regard, FAO is planning to convene a meeting of countries operating open-registers in order to inform them about the effects their uncontrolled vessels are having on world fisheries.

87. Furthermore, lack of effective flag State control can leave the shipping industry vulnerable to abuses by criminals involved in smuggling arms, trafficking in drugs, diamonds etc. Because some flag States may be unaware of these criminal activities, greater vigilance and more transparencies are required in ship registration. In order to effectively combat and prevent the misuse of ships for illicit purposes, it is essential that the authorities have the capacity to obtain, on a timely basis, information on the beneficial owner of the ship and on the individual or corporation that has effective control of the ship.⁴⁴ OECD has warned that lack of transparency could enable terrorists to hide behind the industry “corporate veil” and that hard-to-trace corporate and ownership structures permit the elusion or dilution of responsibility for environmental disasters.⁴⁵ OECD has begun the second phase of an investigation into the various complex corporate mechanisms used to conceal ownership with a focus on possible measures to address this issue. The research complements the work of IMO on maritime security.

88. The adoption and implementation of international rules and standards is rendered a meaningless exercise if not supported by effective enforcement. The adoption of double hull standards, while providing a protective layer in the event of an accident, is no substitute for the enforcement of proper standards of management, operation, maintenance and control. The most important factor in achieving safety of navigation is the effective implementation of international rules and standards governing all aspects of navigation and their subsequent enforcement on every ship. It is therefore essential that the efforts to improve safety of navigation focus on enhancing flag State implementation and enforcement. The WSSD recognized this when it urged IMO to consider stronger mechanisms to secure the implementation of IMO instruments by flag States. The following initiatives have recently been launched to assist flag States meet their responsibilities.

89. *Voluntary Audit Scheme.* In June 2002, IMO Council approved in principle the concept of a proposed IMO Model Audit Scheme. The Scheme is designed to help promote maritime safety and environmental protection by assessing how effectively Member States implement and enforce relevant IMO Convention standards, and by providing them with feedback and advice on their current performance. In resolution 57/141, the General Assembly welcomed the decision of IMO to approve in principle the concept of a voluntary Audit Scheme as a means of enhancing the performance of member States. Some States have expressed support for the development of a compulsory model audit scheme,⁴⁶ similar to the safety oversight programme of ICAO, initially conceived as voluntary, but changed after two years to a regular, mandatory, systematic and harmonized safety audit.⁴⁷

90. *Draft Flag State Implementation Code.* During the 10th session of the Sub-Committee on Flag State Implementation several delegations insisted that the role and responsibilities of flag States need to be strengthened, referring to recommendations of the 1998 Ministerial Conference in Vancouver and Decision 7/1 of the Commission on Sustainable Development (A/54/429, para. 183). They proposed to update IMO Assembly resolution A.847(20), to introduce transparent criteria for the proper implementation of IMO instruments by flag States, and to transform the Guidelines into a Flag State Implementation Code, to become mandatory at a later stage. The Code would list the relevant conventions, including UNCLOS, and describe the required administrative infrastructure and processes for implementation and enforcement. The Code would also describe obligations of flag States with respect to registration requirements: they should be able to exercise effective control over their ships before registering them, in particular in cases of transfer of ships between registers. Other parts would address delegation of authority, flag State surveyors, investigations and reporting to IMO.⁴⁸ Although there was general support in principle for these proposals, several delegations insisted that it would not be appropriate to have a single model dictating how individual flag States should proceed with the implementation of the relevant international conventions at the national level. The Sub-Committee requested that a plan detailing how to proceed on this issue be submitted to the MSC and the MEPC.⁴⁹

91. The policy statement on substandard shipping issued by the Maritime Transport Committee of the OECD in 2002, recognizes that while IMO has prime competence for the regulation of shipping engaged in international trade from the maritime safety, efficiency of navigation and prevention and control of marine pollution from the ship's point of view, much can be done by Governments, international organizations and other players in the maritime industry to minimize the incidence of substandard shipping. Actions endorsed by OECD, included: (1) flag States should not accept new vessels on their registers without ensuring that they meet all international requirements; (2) port States should apply sanctions (including detentions) and penalties that are adequate to discourage operators and users of substandard ships; (3) the insurance industry should identify and target providers and users of substandard ships and should consider refraining from providing insurance cover unless the deficiencies which make these ships unsafe are eliminated; (4) OECD members will work with industry to develop the concept of incentives for responsible shipowners and other parties in the industry, in order to encourage them to attain appropriate standards, and to be able to better combat the non-market competition posed by operators and users of substandard ships; and (5) OECD members will work actively, including through IMO, to consider some international means of facilitating proof of negligence, not only for shipowners, but also charterers, cargo interests, classification societies and others, where they have wilfully taken advantage of the existence of substandard shipping.

2. Port State control

92. Effective flag State implementation and enforcement would lead to a reduction in the present reliance on port State control, which initially was only supposed to act as a safety net. For it is the duty of flag States - not port States - to ensure that ships meet internationally agreed safety and pollution prevention standards. In reality, however, increasing reliance is being placed on the port State to exercise the necessary control. The role of the port State will increase when it assumes the new responsibility of ensuring compliance with maritime security regulations by vessels calling at its port. The port State will also often entrusted with inspecting fishing vessels to ensure that they are complying with conservation and management measures.

93. Eight regional agreements on port State control are currently in operation beginning with 1982 Paris Memorandum of Understanding (MOU) on Port State Control, followed by others for: Asia-Pacific, the Black Sea, the Indian Ocean, Latin America, the Mediterranean Sea and West and Central Africa. A regional MOU for the Gulf region is under preparation. Following the *Prestige* accident, Spain and France proposed further improvements to the Paris MOU, including inspections of ships transporting hazardous or dangerous materials and the introduction of European Certificate of Conformity regarding the structure of the vessel for entry into European ports. Furthermore, masters of ships reported to have defects in previous inspections, or with any pending deficiencies would have to notify the authorities 48 hours before entering port.⁵⁰ The European Commission has recently published an indicative black list of 66 ships, representing 13 flags that have been detained on several occasions in European ports for failing to comply with maritime safety rules. It hopes that publishing this information will encourage operators to refrain from chartering substandard ships, and that the owners and flag States in question will immediately apply more stringent maritime standards.⁵¹

F. Assistance in distress situations

1. Rescue of persons in distress

94. The duty to render assistance to any person in distress at sea is clearly established as a principle of maritime law and enshrined in article 98 of UNCLOS, SOLAS, article 10 of the 1989 Salvage Convention, and in the 1979 International Convention on Maritime Search and Rescue. In 2002, several initiatives were launched in response to the incident involving the vessel *Tampa* and pursuant to the call in IMO Assembly resolution A.920(22) for a review of safety measures and procedures for the

treatment of persons rescued at sea. MSC 75 reviewed issues relating to the rescue of persons at sea, requesting the MSC, the Legal Committee and the Facilitation Committee to review, all relevant IMO instruments to identify any existing gaps, inconsistencies, ambiguities, vagueness or other inadequacies concerning the rescue of persons at sea. UNHCR actively participated in discussions at MSC 75 and 76 focused on the meaning of the phrase “delivery to a place of safety” and the advisability of introducing amendments to SAR and SOLAS (and possibly other relevant legal instruments) in order to clarify this term. The IMO Secretary-General brought the issue of persons rescued at sea to the attention of a number of competent United Nations specialized agencies and programmes pointing out the need for a coordinated approach to all attendant aspects at the United Nations inter-agency level, and proposing the establishment of a mechanism to ensure a coordinated response in any future emergency.

95. IMO convened an inter-agency meeting on the Treatment of Persons Rescued at Sea at UNHCR Headquarters in July 2002, with the participation of representatives of UNHCR, the United Nations Office for Drug Control and Crime Prevention, the Office of the High Commissioner for Human Rights (OHCHR), the International Organization for Migration (IOM) and DOALOS, to discuss more effective modes of cooperation in response to emergency situations at sea, such as the *Tampa* incident. The issues at stake were the need for States to respect and ensure respect for the rights and dignity of the persons rescued at sea regardless of their status; their legitimate interest to maintain effective border and immigration controls and to prevent and combat transnational organized crimes such as the smuggling of migrants and trafficking in human beings; the need to meet the immediate humanitarian requirements of rescued persons and stowaways and to ensure that those who seek asylum are protected from immediate danger and are granted prompt access to fair and efficient status determination procedures in full compliance with respect to the principle of non-refoulement; and the need to maintain security and stability in international shipping.

96. The meeting established a focal point system to facilitate a more coordinated response to future emergency cases necessitating action at the inter-agency level and considered the desirability of developing guidelines for: (1) its members to use when the coordinating mechanism group is activated in future emergency cases; and (2) Governments on action they might wish to take in future cases of persons rescued at sea involving asylum seekers and/or refugees.⁵² UNHCR believes that although the inter-agency group had only met on this one occasion, the working level interaction established between the different participating agencies had contributed to ongoing cooperation on issues of common concern. In March 2002, UNHCR held an expert roundtable in Lisbon involving participants from governments, the shipping industry, international organisations, including IMO, OHCHR and DOALOS, non-governmental organizations and academia to discuss the challenges posed by complex rescue scenarios. The expert roundtable, inter alia, emphasized the importance of upholding the integrity of the global search and rescue regime and of international cooperative efforts to adequately address the complex components of rescue scenarios involving asylum-seekers and refugees.⁵³ The outcome of the UNHCR and IMO initiatives were considered at an informal meeting in Sweden in September 2002, by the MSC in December 2002 and by COMSAR in January 2003. Draft amendments to SOLAS and SAR have been prepared for consideration by the MSC in 2003.⁵⁴

97. In its resolution 57/141, the General Assembly welcomed the initiatives by IMO, UNHCR and IOM to address the issue of the treatment of persons rescued at sea. UNHCR has stated that the contribution of the DOALOS, OHCHR and UNODC to these initiatives should have been highlighted in the resolution to illustrate the broad-based approach to inter-agency cooperation.

2. Ships in distress

98. The incidents involving the tanker *Castor* in December 2000 (see A/57/57, paras. 119-120) and the *Prestige* in December 2002 have highlighted the need for clear guidance for actions to be taken by ships' masters, coastal States and flag States when ships need assistance at sea. IMO has therefore given priority attention to the consideration of the problem of places of refuge for disabled vessels and the adoption of measures required to ensure that in the interests of safety of life at sea and environmental protection, coastal States review their contingency arrangements so that such ships are provided with any assistance and facilities required.

99. Following a decision by MSC 75 that the issue should be considered from the operational safety point of view, the Sub-Committee on Safety of Navigation (NAV) prepared two draft Assembly resolutions. The first includes guidelines recommending actions to be taken by ships' masters, coastal States and Flag States when ships need assistance. The second resolution recommends the establishment by coastal States of Maritime Assistance Services (MASs) to be mobilized when required. The guidelines on places of refuge are intended to be used when a ship is in need of assistance but safety of life is not involved. Where safety of life is involved, the provisions of the SAR Convention should be followed. The guidelines recognise that when a ship has suffered an incident, the best way of preventing damage or pollution from its progressive deterioration is to transfer its cargo and bunkers, and to repair the casualty. Such an operation is best carried out in a place of refuge.

100. A new directive adopted by the European Parliament and the Council requires its member States to draw up plans, taking into account the IMO guidelines, to accommodate ships in distress in waters under their jurisdiction. Such plans must contain the necessary arrangements and procedures taking into account operational and environmental constraints to ensure that ships in distress may immediately go to a place of refuge subject to certification by the competent authority. The Commission has been requested to examine the need for and feasibility of measures at the Community level aimed at facilitating the recovery of, or compensation for, costs and damage incurred for the accommodation of ships in distress, including appropriate requirements for insurance or other financial security.

V. Crimes at sea

101. International terrorism, transnational organized crime, illicit drug trafficking are listed among the global threats and challenges of the twenty-first century in respect of which the United Nations has been requested by the General Assembly to study ways and means to promote further, under its lead, a more comprehensive and coherent response.⁵⁵ The terrorist attack on the tanker *Limburg* off the coast of Yemen last year, the continuous increase in smuggling of migrants and illicit traffic in narcotic drugs and psychotropic substances by sea – generally the work of organized criminals – demonstrate that there is a maritime dimension to these global threats and challenges. Action to combat and suppress these and other criminal activities at sea, such as piracy and armed robbery, poses a particular challenge for a global industry like the maritime transport industry. International cooperation and coordination is therefore a vital prerequisite for effective action. It is encouraging to note that an increasing number of regions have identified the need to combat criminal activities at sea among their priorities for regional cooperation and have agreed strengthen exchange of information and personnel, training and enhanced capacity-building and joint research.⁵⁶

A. Prevention and suppression of acts of terrorism against shipping

102. In the past year, the United Nations intensified its work in the fight against terrorism. By resolution 1373 (2001) the Security Council imposed binding obligations on Member States to suppress and prevent terrorism, and established a Counter-Terrorism Committee to monitor implementation of

the resolution. At its 57th session, the General Assembly reaffirmed that international cooperation as well as actions by States to combat terrorism should be conducted in conformity with the principles of the Charter of the United Nations, international law and relevant international conventions.⁵⁷ In the prevention and suppression of acts of terrorism against shipping it is important to maintain a balance between the need to take protective measures to counter the threat to maritime security on the one hand, and the need to respect international law, in particular human rights law, on the other.⁵⁸ A balance must also be sought between tightening security measures and maintaining the efficient flow of international trade.

103. New security measures are already affecting the maritime transport industry; for example, marine insurers have tripled the premiums they charge tankers passing through Yemeni waters.⁵⁹ The United States now requires detailed cargo manifests for the loading of containers bound for its ports, which has led to major changes in the loading of containers in major ports, such as Hong Kong.⁶⁰ The new IMO International Ship and Port Facility Security Code (ISPS Code) will have an even more significant impact on the maritime transport industry.

104. In resolution 57/141, the General Assembly welcomed IMO initiatives to counter threats to maritime security from terrorism and encouraged States to fully to support these endeavours, including the adoption of amendments to SOLAS and the International Maritime Security Code at the Conference of Contracting Parties to SOLAS in December 2002 set to enter into force in July 2004.⁶¹ New measures to strengthen maritime security and prevent and suppress acts of terrorism against shipping have been included in a new chapter XI-2 of SOLAS, in amendments to existing chapters, i.e., chapters V and XI-1, and in a ISPS Code. The purpose of the Code is to provide a standardized, consistent framework for evaluating risk, enabling governments to offset changes in threat with changes in vulnerability for ships and port facilities. Modifications to Chapter V (Safety of Navigation) of SOLAS contain a new timetable for the fitting of Automatic Information Systems (AIS). Ships, other than passenger ships and tankers, of less than 50,000 gross tonnage, will be required to fit AIS at the latest by 31 December 2004.

105. The existing SOLAS Chapter XI (Special measures to enhance maritime safety) has been re-numbered as Chapter XI-1. Its regulation 1/3 has been modified to require ships' identification numbers to be permanently marked in a visible place either on the ship's hull or superstructure and also internally. A new regulation 1/5 requires ships to be issued with a Continuous Synopsis Record (CSR) which is intended to provide an on-board record of the history of the ship. The CSR must be issued by the Administration and contain information such as the names of the ship and the flag State, the date on which the ship was registered with that State, the ship's identification number, the port at which the ship is registered and the name of the registered owner(s) and their registered address. Any changes have to be recorded in the CSR within three months so as to provide updated and current information together with the history of the changes.

106. A new Chapter XI-2 (Special measures to enhance maritime security) has been added after the renumbered Chapter XI-1. Both flag States and coastal States have to conduct security assessments for their ships or port facilities within their territory that serve ships engaged on international voyages, pursuant to which a security plan is then developed. All ships must be provided with a ship security alert system, according to a strict timetable that will see most vessels fitted by 2004 and the remainder by 2006. Ships will have to carry an International Ship Security Certificate indicating that they comply with the requirements of SOLAS chapter XI-2 and part A of the ISPS Code. The ship is subject to port State control inspections but such inspections will not normally extend to examination of the Ship Security Plan itself except in specific circumstances. A coastal State may require a ship intending to

enter its ports to notify in advance whether it complies with the requirements. The amendments to SOLAS and the ISPS represent a significant change in the approach of the international maritime industry to the issue of security in the maritime transport sector. The Conference recognized that this may place a significant additional burden on Contracting Governments and adopted two resolutions addressing the need to provide assistance to States.

107. The General Assembly also urged States to become parties to the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA Convention) and its Protocol, and invited States to participate in the review of those instruments by the Legal Committee of the IMO to strengthen the means of combating such unlawful acts, including terrorist acts, and further urged States to take appropriate measures to ensure the effective implementation of those instruments, in particular through the adoption of legislation aimed at ensuring that there is a proper framework for responses to incidents of armed robbery and terrorist acts at sea. The Legal Committee has begun considering possible amendments to the SUA Convention and its Protocol on the basis of a working paper prepared by a Correspondence Group.

B. Piracy and armed robbery against ships

108. MSC recently noted that although after 11 September 2001 emphasis had been placed on maritime security, the issue of piracy and armed robbery against ships continued to cast a black spot on the image of the shipping industry as a whole. During the first ten months of 2002, there was a 20 per cent increase in the number of reported acts to IMO (315), compared with the figure for the same period in 2001 (263). Twelve ships had been hijacked and eight ships had disappeared. Reports indicate that the areas most affected were the Far East, in particular the South China Sea and the Malacca Strait, the Indian Ocean, the Caribbean, South America (Pacific and Atlantic) and West and East Africa.⁶² In resolution 57/141 the General Assembly urged again all States and relevant international bodies to cooperate to prevent and combat piracy and armed robbery at sea by adopting measures, including those relating to assisting with capacity-building, prevention, reporting and investigating incidents, and bringing the alleged perpetrators to justice, in accordance with international law, and through the adoption of national legislation, as well as through training seafarers, port staff and enforcement personnel, providing enforcement vessels and equipment and guarding against fraudulent ship registration. It again called upon States and private entities concerned to cooperate fully with IMO, including by submitting reports on incidents to the organization and by implementing its guidelines on preventing attacks of piracy and armed robbery.

C. Smuggling of migrants

109. CICP reports that smuggling of migrants continues to pose a major challenge in terms of human rights, crime-control and maritime issues. The International Organization for Migration (IOM) in its contribution explained that an objective to help States and migrants find solutions to the problems and causes of irregular migration, which it views as necessitating a holistic response. Preventative as well as responsive measures are needed. Its objective in countering trafficking is defined as “to curtail migrant trafficking and to protect the rights of migrants caught up in the practice”.

110. More immediate emphasis has been placed by States on increasing enforcement measures. In 2002, Spanish authorities arrested 16,504 boat people on its coasts, 11 per cent fewer than in 2001. The majority were in the Canaries, as opposed to the Strait of Gibraltar, which was the primary route for entering Spain illegally in 2001, before stricter enforcement measures were adopted. The number of repatriations increased by 63.7 per cent in 2002 to 79,467, at a rate of 204 a day.⁶³ It has been estimated that about 4000 people have drowned in the Strait of Gibraltar and in the Atlantic since 1997.⁶⁴

111. Spain, Italy and Greece consider themselves prime targets for migration into the European Union. Around two-thirds of those entering Europe from Asia, Africa and the Middle East do so via the Aegean and the Mediterranean Seas. Recently almost 5000 migrants, mostly from Iraq and Pakistan, arrived within one week. Greece is particularly worried about the potential wave of refugees that would come from Iraq, if there was a war, and has asked other European countries to agree to a “burden-sharing” arrangement.⁶⁵ Ships from five European Nations (Spain, United Kingdom, France, Italy and Portugal) have begun patrolling the Mediterranean in an attempt to combat illegal migration. Enforcement officers will have the power to board any suspect vessel and escort them to the nearest European port if necessary.⁶⁶

112. In resolution 57/141, the General Assembly urged States that had not done so to become parties to the Protocol against the Smuggling of Migrants by Land, Sea and Air and to take appropriate measures to ensure its effective implementation. Noting the increasing problem of unsafe transport at sea generally and particularly in the smuggling of migrants, urged Member States to work together cooperatively and with IMO to strengthen measures to prevent the embarkation of ships involved in the smuggling of migrants. The IMO Interim measures for combating unsafe practices associated with the trafficking or transport of illegal migrants by sea (MSC/Circ.896/Rev.1) recommend that a State should prevent a ship in its port from sailing if it is (1) obviously in conditions which violate fundamental principles of safety at sea, in particular those of the SOLAS Convention; or (2) not properly manned, equipped or licensed for carrying passengers on international voyages, and thereby constitute a serious danger for the lives or the health of the persons on board, including the conditions for embarkation and disembarkation.

VI. Marine Resources, Marine Environment and Sustainable Development

113. “Oceans, seas, islands and coastal areas form an integrated and essential component of the Earth’s ecosystem and are critical for global food security and for sustaining economic prosperity and the well-being of many national economies, particularly in developing countries. Ensuring the sustainable development of the oceans requires effective coordination and cooperation, including at the global and regional levels, between relevant bodies...”⁶⁷

114. On 20 December 2002 the General Assembly adopted the resolution “World Summit on Sustainable Development”⁶⁸ in which it endorsed the Johannesburg Declaration on Sustainable Development and the Johannesburg Plan of Implementation and decided to adopt sustainable development as a key element of the overarching framework for United Nations activities, in particular for achieving internationally agreed development goals, including those in the United Nations Millennium Declaration. The Assembly further called for implementation of the commitments, programmes and time-bound targets adopted at the WSSD, urging Governments and all relevant international and regional organizations, agencies and institutions, as well as major groups, to take timely actions to ensure the effective follow-up and implementation of the Johannesburg outcomes.

115. The General Assembly also adopted resolution 57/262 on “Further implementation of the Programme of Actions for the Sustainable Development of Small islands developing States” (SIDS), in which it decided to convene an international meeting in 2004 pursuant to the recommendation of the WSSD to undertake a comprehensive review of implementation of the Barbados Programme of Action for SIDS. Mauritius offered to host the meeting.

116. In its annual resolution on “Oceans and law of the sea”, the General Assembly welcomed the Johannesburg Plan of Implementation and the commitments set out therein to actions at all levels, within specific periods for certain goals, to ensure the sustainable development of the oceans. The Plan

recommends that the Commission on Sustainable Development (CSD) review and monitor the further implementation of the commitments contained therein. The eleventh session of the CSD will take place from 29 April-9 May 2003 in New York.

A. Conservation and Management of Marine Living Resources

117. The world's marine capture fisheries are currently at a crossroad. Following an evolution over the last 50 years marked by many institutional, legal, technological and biological challenges, generating changing demand, and uncertain political, social and economic environments in the sector, marine fisheries have now to balance conflicting requirements of short-term economic and social benefits in the utilization of fishery resources and the need to ensure the long-term sustainability of such resources. As a result, the international approach to fisheries management has changed dramatically. From production and expansion of fisheries through exploitation of existing and new resources, emphasis is now placed on a conservation-oriented approach, which integrates into fisheries management broad conservation objectives beyond fisheries, including consideration of the effects of fishery activities on the marine ecosystem as a whole. The legal and policy framework for such an approach is embodied in the legally binding agreements as well as the voluntary instruments adopted further to the recommendations contained in the 1992 UNCED Agenda 21, Chapter 17. These include the United Nations Fish Stocks Agreement, the FAO Compliance Agreement, the Code of Conduct for Responsible Fisheries and its related international plans of action, and the Jakarta Mandate on the Conservation and Sustainable Use of Marine and Coastal Biological Diversity. Some of these instruments are in the early phase of implementation, while implementation of others has not yet begun. However, a consensus emerged in the WSSD Plan of Implementation that all the instruments must be implemented in order to ensure sustainable fisheries and promote the conservation and management of the oceans.⁶⁹

1. The United Nations Fish Stocks Agreement

118. In its resolution 57/143, the General Assembly requested the Secretary-General to convene a second round of informal consultations with States that have either ratified or acceded to the United Nations Fish Stocks Agreement (UNFSA), in order to consider the national, subregional, regional and global implementation of the Agreement, and to make any appropriate recommendation to the General Assembly at its fifty-eighth session. This second informal meeting is to be held at the end of July 2003.

119. At their first informal meeting in July 2002, the Parties to UNFSA declared that the most important aspect of implementation of the Agreement was the programme of assistance with multiple components for developing States Parties, in accordance with Part VII of the Agreement. They also indicated that one component of such a programme would be the establishment of a voluntary fund devoted to the implementation of the objectives set forth in articles 25 and 26 of the Agreement.

120. Accordingly, States Parties decided that one of the key issues for the second informal meeting would be consideration of the terms of reference of the voluntary trust fund for the implementation of Part VII of the Agreement. The General Assembly emphasized that the following activities should be considered for early implementation through the fund: (i) facilitating developing States Parties' participation in relevant subregional and regional fisheries management organizations and arrangements; (ii) assisting with travel costs associated with developing States Parties' participation in meetings of relevant global organizations; (iii) supporting ongoing and future negotiations to establish new subregional or regional fisheries management organizations and arrangements in areas without such bodies currently in place, and to strengthen existing subregional and regional fisheries management organizations and arrangements; (iv) building capacity for activities in key areas such as monitoring, control and surveillance, data collection and scientific research; (v) exchanging information and experience in the implementation of the Agreement; and (vi) assisting with human resource

development and technical assistance. Other main topics for the consultations would include application of the precautionary approach and questions of compliance and enforcement.⁷⁰

121. In order to facilitate discussions the Secretary-General was requested to prepare a study on current activities under Part VII of the Agreement, including a survey and analysis of current assistance programmes under way in support of Part VII principles. Furthermore, he was invited to prepare a survey on activities relating to the implementation of the Agreement, on the basis of information provided voluntarily by States Parties and non-States Parties, subregional and regional fisheries management organizations and arrangements, with a view to encouraging through such a mechanism greater exchange of information with regard to implementation of the Agreement.

2. Actions to Combat IUU Fishing Activities

122. Illegal, unreported and unregulated (IUU) fishing is one of the main issues facing fisheries governance. For this reason the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) was adopted by the FAO Committee on Fisheries (COFI) in March 2001, and IUU fishing continues to be addressed in a wide range of national, regional and international forums. The IPOA-IUU has been widely disseminated and states and regional fishery organizations or arrangements (RFMOs) are being urged to take steps to implement the plan. In 2002, FAO published Technical Guideline No. 9 concerning the implementation of the IPOA-IUU to assist Government officials in the elaboration of national plans called for in the IPOA-IUU. A simple language version of the international plan of action entitled “Stopping Illegal Unreported and Unregulated Fishing” was distributed to fishing communities and fishers in order to sensitize them about the issues and significance of IUU fishing.

123. FAO is continuing to assess the linkage between subsidies, fishing capacity and IUU fishing,⁷¹ working with states and RFMOs to strengthen regional and international Monitoring, Control and Surveillance (MCS) networks to report and disseminate information, in real time, about the operations of IUU fishers. It is also monitoring global developments in IUU fishing and is reporting on these developments at United Nations and FAO forums. FAO presented its first progress report on achievements with the implementation of the IPOA-IUU to the 25th Session of COFI (February 2003), together with its report on the implementation of the Code of Conduct. FAO is also planning a meeting of countries that operate open registers or so-called flag of convenience States (FOCs) in 2003 in order to raise awareness in FOC States about the effects their vessels are having on world fisheries.

124. In November 2002, FAO hosted an Expert Consultation to Review Port State Measures to Combat Illegal, Unreported and Unregulated Fishing. The Consultation elaborated a draft memorandum of understanding on port State measures to combat illegal, unreported and unregulated fishing, and recommended that FAO:

- (i) Convene a Technical Consultation addressing principles and guidelines for the establishment of regional Memoranda of Understanding on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing;
- (ii) Elaborate and implement programmes of assistance to facilitate human resource development and institutional strengthening, including legal assistance, in developing countries so as to promote the full and effective implementation of port State measures to combat IUU fishing; and
- (iii) Consider the establishment of a database concerning relevant port State measures.

125. Also in November 2002, Spain, in technical collaboration with FAO and with the assistance of the European Union, convened an International Conference on Illegal, Unreported and Unregulated Fishing to discuss measures to address IUU fishing at the national and global levels. Spain presented its national plan of action to combat illegal, unreported and unregulated fishing.

126. At the United Nations, the *WSSD Plan of Implementation* declared that in order to achieve sustainable fisheries, actions should be taken to develop urgently and implement national and regional plans of action, to put into effect the IPOA-IUU by 2004, and to establish effective monitoring, reporting and enforcement, and control of fishing vessels, including by flag States, to further such IPOA. It also urged the international community to eliminate subsidies that contribute to IUU fishing and over-capacity, while completing the efforts undertaken at the World Trade Organization (WTO) to clarify and improve its disciplines on fisheries subsidies, taking into account the importance of the sector to developing countries.⁷²

127. Furthermore, the General Assembly at its fifty-seventh session adopted several decisions bearing on the global fight waged by the international community against IUU fishing. In resolution 57/141 the General Assembly urged States to take all necessary steps to implement the international plan of action adopted by the FAO Committee on Fisheries to prevent, deter and eliminate IUU fishing, including through relevant subregional and regional fisheries management organizations and arrangements.⁷³ In resolution 57/142 on “Large-scale pelagic drift-net fishing, unauthorized fishing in zones of national jurisdiction and on the high seas/illegal, unreported and unregulated fishing, fisheries by-catch and discards, and other developments,” the Assembly reiterated the recommendations agreed at WSSD. Furthermore, it invited the FAO to continue its cooperative arrangements with United Nations agencies on implementation of the IPOA and to report to the Secretary-General on priorities for cooperation and coordination in this work, and affirmed, the need for the international community to strengthen the international legal framework for intergovernmental cooperation in the management of fish stocks and in combating IUU fishing, in a manner consistent with international law.⁷⁴ It was decided to consolidate all fisheries issues under one sub-item with the title “Sustainable fisheries, including through the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments”. This will enhance the integrated approach in this difficult field.

3. Regional Fisheries Management Organizations

128. Since the early 1990s, the international community has adopted a number of instruments to enhance the legal framework for fisheries management laid down in UNCLOS.⁷⁵ All these instruments deal with contemporary issues such as good governance of fishery resources; excess fleet capacity and overexploitation of resources; by-catch and discards; IUU fishing; monitoring, control, surveillance and enforcement; measures to improve data collection; application of the precautionary approach and the ecosystem approach, as well as the critical role that subregional and regional fishery organizations and arrangements (RFOs) could play in addressing those issues. However, it is well known that regional fisheries bodies have only been variably successful in conserving the resources under their competence, owing, inter alia, to the inadequacies of their mandates to conserve and manage the resources and their inability to enforce their regulatory measures, even vis-à-vis their own members.

129. In view of this situation, in 1997 the FAO-COFI agreed that all FAO RFOs should be reviewed and evaluated by their members to determine measures to be taken to strengthen them. The Committee emphasized that there should be close coordination between FAO and non-FAO regional fishery bodies, and with other organizations dealing with fishery issues.⁷⁶ Consequently, a first meeting of FAO and

non-FAO regional fisheries bodies and arrangements was held in Rome in February 1999 to discuss three main items: major issues affecting the performance of RFOs; a multifaceted approach to fishery status and trends reporting; and regional fishery bodies as vehicles for good fishery governance. It reached conclusions on the importance of the precautionary approach for fisheries management and governance and on involving all stakeholders in developing management measures, as well as the urgency of continuing the adjustment of their mandates, structures and policies in order to respond better to challenges facing world fisheries.⁷⁷ At their second meeting in February 2001, the FAO and non-FAO regional fishery bodies and arrangements discussed some external factors that might impact on their work and fisheries management, such as pollution from land-based activities; cooperation in global trends and status reporting in fisheries; IUU fishing; developments in CITES criteria for listing commercially-exploited aquatic resources; and opportunities and challenges for coordinated activities on ecosystem-based management of fisheries.⁷⁸

4. Other Activities of FAO

(a) Vessel Monitoring Systems (VMS) and Satellite Surveillance

130. In 2002 FAO held a successful Workshop on vessel monitoring systems (VMS) in Senegal for the countries of the Sub-Regional Fisheries Commission (Cape Verde, Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal and Sierra Leone). It plans to conduct a series of similar VMS workshops in West Africa, East Africa, Central America, Near East and Southeast Asia. FAO is also developing model legislation for VMS, which will assist countries to rapidly introduce legislation to support VMS measures. In December 2002, FAO commissioned a study to assess the development of electronic logbooks for catch data with specific reference as to how such logs can be incorporated into VMS. For 2003, FAO is proposing to hold an Expert Consultation on VMS Data Formats and Procedures. The Consultation will aim to ensure compatibility between different systems that are being developed.

131. FAO has noted an increase in use of VMS for MCS of fishing vessels over the last five years: from an estimate of five or six countries using VMS to monitor activities of 2,000 fishing vessels in 1998, there are in 2002 seventy countries using VMS to monitor 20,000 vessels. All countries with substantial fisheries resources have now implemented VMS, and those which do not have VMS at the present time are nearly all developing countries. Another important development is the use of VMS by regional fisheries management organizations (RFMOs) in their regulatory areas to effectively establish a monitoring regime on the high seas. The North East Atlantic Fisheries Commission (NEAFC) and the North Atlantic Fisheries Organization (NAFO) both require all the vessels of their members to report by VMS to their flag State and to the RFMOs when in the regulatory area (i.e. while within the geographical area but outside the 200 nm EEZ limits). The Indian Ocean Tuna Commission (IOTC) has passed a Resolution requiring its members to apply VMS to 10 percent of their vessels over 20 meters from mid -2003. The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and the International Commission for the Conservation of Atlantic Tunas (ICCAT) are considering similar measures.

132. In addition, electronic logbooks are being introduced so that VMS is also capable of reporting catch data in addition to position data. This development introduces the possibility of real time fisheries management with measures being taken immediately. Electronic logbooks are now being used in Australia, Canada, Iceland, USA (North Pacific), and they will be introduced by the European Community (EC) for vessels over 24m in 2004. An important area of complementary development is the use of satellite surveillance to detect the presence of fishing vessels not reporting by VMS. It is already in use in Australia and the EC, Iceland, Canada and Norway have been conducting pilot studies on satellite surveillance (Synthetic Aperture Radar) with the Joint European Research Centre over the past few years. These methods may be introduced to MCS in EC fisheries in 2004.

(b) Fisheries Subsidies

133. In 2002, FAO continued to study the subject of subsidies in fisheries pursuant to the mandate received at the 24th Session of COFI giving FAO the lead role in the promotion of cooperation and coordination amongst intergovernmental organizations of their work on subsidies in fisheries. In July 2002, it hosted the Second *Ad hoc* Meeting of Intergovernmental Organizations on Work Programmes Related to Subsidies in Fisheries (Rome 4-5 July 2002)⁷⁹ in order to provide an occasion to exchange information regarding on-going activities, in order to create synergies and to avoid duplication of work.⁸⁰

134. Moreover, FAO continued monitoring of the economic performance of capture fisheries expanding it to include also a review of subsidies. The results were reported in a technical paper and highlighted in the “State of the World Fisheries and Aquaculture” (SOFIA) 2002.⁸¹ An FAO Expert Consultation held in December 2002,⁸² strongly recommended that FAO support the use of the Guide on Identifying, Assessing and Reporting on Subsidies in the Fishing Industry, which could be published in 2003. The Consultation also suggested that FAO improve guidance on how to assess subsidies that: (i) have both long term and short term effects; (ii) may occur as a consequence of government inactions; and (iii) may be linked to resource pricing. Furthermore, it recommended that FAO undertake analytical work on impacts and provided general advice on how such work can be done. Following a review of the conclusions and recommendations of the Expert Consultation on Identifying, Assessing a Reporting on Subsidies in the Fishing Industry by COFI in February 2003, the Committee agreed that FAO should convene a Technical Consultation on subsidies in the fisheries sector in 2004. It also agreed that this Technical Consultation should be prepared in cooperation with other relevant international organizations and that its work should focus on the impacts of subsidies on the sustainability of fisheries resources, in particular their effects on overcapacity, overfishing and IUU fishing.

(c) Management of Fishing Capacity

135. Since the adoption of the International Plan of Action for the Management of Fishing Capacity (IPOA-Capacity) by COFI in February 1999, the IPOA has been widely disseminated and measures for implementation have been taken by numerous countries and RFMOs. FAO has begun to develop technical documentation related to measurement and assessment of fishing capacity and to policy issues arising in measures that can be taken to manage and eventually reduce such capacity. FAO has also been working with selected RFMOs to assess issues and develop policies for the management of fishing capacity. Because management of fishing capacity is one of the main issues facing fisheries governance and because it has been increasingly addressed over the last decade in a wide range of national and international fora, a sustained effort will have to continue in order to monitor progress made in the implementation of the IPOA-Capacity. FAO will report on such progress at the 25th Session of COFI.

136. Other actions already completed or to be undertaken by FAO include:

- (i) The organization in 2002 and 2003 of a series of case studies on the management of fishing capacity in Latin America;
- (ii) The organization in October 2002 of a Workshop on Monitoring, Assessment and Management of Fishing Capacity in the Adriatic Area of the Mediterranean (through the Adriamed Project in support of the General Fisheries Commission for the Mediterranean);
- (iii) The organization in October 2002 of an Expert Consultation entitled “Catalyzing the Transition away from Overcapacity in Marine Fisheries”.

- (iv) The initiation of a major three-year project on the management of tuna fishing capacity in 2002, being implemented in collaboration with the tuna RFMOs.

(d) Management of Shared (Transboundary and Straddling) Fish Stocks

137. The Government of Norway in cooperation with FAO convened a Norway-FAO Expert Consultation on the Management of Shared Fish Stocks in Bergen, in October 2002,⁸³ with the goal of enhancing the modalities and mechanisms for the management of shared fish stocks and of better understanding the problems involved. The Consultation was held because effective conservation and management of shared fish stocks, under article 63 (1) of UNCLOS, presents an ongoing challenge for States and regional fishery management organizations or arrangements in their efforts to secure long-term sustainable solutions for these stocks. The Expert Consultation drew several important conclusions including:

- (i) the need for cooperative management arrangements to be resilient enough to be able to absorb unpredictable shocks stemming from natural variability, climate change or other unpredictable ecological or economic disruptions;
- (ii) that the sharing of the benefits from the fisheries should not be restricted to allocations of total allowable catch (TACs), or the equivalent, to national fleets;
- (iii) that consideration should also be given to the use of what the Expert Consultation referred to as “negotiation facilitators”, or “side payments”, such as quota trades, or mutual access arrangements. These would allow broadening the scope for bargaining over allocations, assist in achieving compromises when there are differences in the management goals of cooperating States/entities, and enhance the flexibility and resilience of the cooperative arrangements over time; and
- (iv) that problems of implementation and enforcement are far more complex for shared fisheries, than those encountered with non-shared fisheries.

138. With respect to cooperative management for straddling fish stocks, under the UN Fish Stocks Agreement and article 63 (2) of UNCLOS, the Expert Consultation noted two critical issues:

- (i) the issue of new members or participants in regional fisheries management organizations or arrangements; and
- (ii) the issue of what in fact constitutes a “real” interest of a State in a straddling stock fishery.

The Expert Consultation reviewed approaches currently being taken to address the issue of new members or participants.

5. Whaling

139. The International Whaling Commission (IWC) held its 54th Annual Meeting, in Shimonoseki, Japan, in May 2002 to, *inter alia*, consider: Icelandic membership; catch limits for commercial whaling; Revised Management Scheme; sanctuaries; catch limits for aboriginal subsistence whaling; status of whales; scientific permits; whale killing methods and associated welfare issues; environmental research; and small cetaceans.

140. The Commission renewed its 1982 decision, which came into force from the 1985/86 seasons, that catch limits for all commercial whaling would be set to zero. Norway had lodged objections to the ban and had exercised its right to set national catch limits for its coastal whaling operations for minke whales. As in previous years, IWC did not adopt a proposal by Japan for an interim relief allocation of

50 minke whales for its coastal-based community whaling. The Commission also indicated that although it had endorsed a Revised Management Procedure (RMP) for commercial whaling, a number of issues including specification of an inspection and observer system ought to be completed (the Revised Management Scheme) before it would consider establishing catch limits other than zero. Nonetheless, the Commission agreed to new catch limits for several stocks subject to aboriginal subsistence whaling, such as Eastern North Pacific gray whales (taken by those whose “traditional, aboriginal and subsistence needs have been recognized”); West Greenland fin whales (taken by Greenlanders); West Greenland minke whales (taken by Greenlanders); East Greenland minke whales (taken by Greenlanders); and Humpback whales (taken by St Vincent and The Grenadines). Furthermore, despite agreement by the Scientific Committee that the bowhead whale stock was able to sustain harvest, and acknowledgment of the cultural, nutritional and subsistence needs of both Alaskan Eskimos and native peoples of Chukotka, a proposal to continue to include provision for such catches failed to reach the necessary majority. Some of the countries that refused such allocation indicated that they believed that Japan should have also been allocated subsistence whales catch for its coastal whaling communities. In addition, they believed that there was scientific uncertainty about the ability of the bowhead stock to sustain the requested levels.

141. Proposals to establish whale sanctuaries in the South Pacific and the South Atlantic failed to gain the three-quarters majority necessary for their adoption. Similarly, a proposal to change the provision for the Southern Ocean Sanctuary was not adopted. As to the status of whales, the Scientific Committee indicated that despite a long period of protection, several populations of great whales remained highly endangered and numbered 500 or less. These include all bowhead whale stocks apart from the Bering-Chukchi Beaufort Seas stock that numbered over 9,000; gray whales in the western Pacific (by contrast, those in the eastern Pacific numbered over 17,000); all stocks of northern right whales; and various stocks of blue whales. It also indicated that some of these small Arctic bowhead populations had been subjected to direct catches outside IWC regulations, or had been killed by ship strikes or had been bycaught in fishing gear.

142. At a Special Meeting of IWC held in Cambridge, United Kingdom, in October 2002, the Commission accepted an allocation of bowhead whales for aboriginal subsistence whaling to Alaskan Eskimos and native peoples of Chukotka for 2003-2007. Although in Japan the IWC had rejected Iceland’s request to become a Party to the Convention in Cambridge, Iceland was allowed to join with a reservation on the moratorium on commercial whaling. A draft resolution proposed by Japan intended to forward discussions on an interim relief allocation for Japanese coastal whaling and arrive expeditiously at a solution, was once more rejected by the Commission.

6. Marine and Coastal Biodiversity

143. Marine and coastal environments contain diverse habitats supporting an abundance of marine life. Marine biological diversity (biodiversity) in fact is greater in the sea than on land or in freshwater.⁸⁴ Some examples of marine and coastal communities include: mangroves; coral reefs; seagrasses; algae; pelagic or open-ocean communities and deep-sea communities. Marine biodiversity is essential for human life: it produces a third of the oxygen that we breathe, offers a valuable source of protein and moderates global climate. Although the importance and value of marine biodiversity is widely recognized, our knowledge of marine biological diversity is far less extensive than our knowledge of terrestrial biodiversity.

144. UNCLOS recognizes the importance of marine life and provides for its conservation; for example in the articles on conservation of living resources in the EEZ (articles 61-67), in the high seas (articles 116-120), in the Area (article 145) and in the duty to take measures to protect and preserve rare and

fragile ecosystems as well as the habitat of depleted and threatened species and other forms of marine life (article 194(5)). The WSSD Plan of Implementation calls for the maintenance of the productivity and biodiversity of important and vulnerable ecosystems, the implementation of international instruments and programmes such as the CBD Jakarta Mandate, the Ramsar Convention, the International Coral Reef Initiative, and the development and use of diverse approaches and tools. Conventions to protect biodiversity include such as the Convention on Biological Diversity, the Convention on the Conservation of Migratory Species and Wild Animals and the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

Convention on Biological Diversity – Jakarta Mandate

145. In 1998, the 4th Meeting of the Conference of the Parties (COP-4) of the Convention on Biological Diversity (CBD) adopted decision IV/5, containing a multi-year programme of work for the conservation and sustainable use of marine and coastal biological diversity composed of four elements: the implementation of integrated marine and coastal areas (IMCAM), marine and coastal living resources, marine and coastal protected areas (MCPAs), mariculture, and alien species and genotypes. COP-5 adopted further measures in decision V/3, including the incorporation of coral bleaching into the programme of work. In April 2002, COP-6 approved the continued implementation of the specific work plan on coral bleaching and the elaboration and implementation of the work plan on physical degradation and destruction of coral reefs (decision VI/3), requesting continued cooperation with the United Nations Framework Convention on Climate Change, and strengthening of collaboration between the Secretariat and regional seas conventions and action plans.

146. The CBD Secretariat has held two meetings of an Ad Hoc Technical Expert Group on Marine and Coastal Protected Areas to consider the values and effects of marine and coastal protected areas and linkages between marine and coastal protected areas and sustainable use. The Group proposed a framework for sustainable management of marine and coastal biological diversity, including a network of highly protected areas covering areas both inside and outside of national jurisdiction, and recommended further research. In July 2002, the CBD convened a meeting of an Ad Hoc Technical Expert Group on Mariculture in collaboration with the FAO to evaluate the current state of scientific and technological knowledge on the effects of mariculture on marine and coastal biological diversity, and to provide guidance on criteria, methods and techniques to avoid the adverse effects of mariculture on biodiversity, while enhancing any positive effects.

147. The CBD Secretariat, in collaboration with DOALOS, prepared a study of the relationship between the CBD and UNCLOS with regard to the conservation and sustainable use of genetic resources on the deep seabed. The study reviews the provisions of the two conventions as they relate to the conservation and sustainable use of the genetic resources of the deep seabed beyond the limits of national jurisdiction and concludes that whereas the provisions of the two conventions are complementary and mutually-supportive regarding the conservation and sustainable use of marine biodiversity, an important legal lacuna exists with respect to commercially-oriented activities relating to marine genetic resources in deep seabed areas beyond national jurisdiction. This lacuna will need to be addressed by the international community, given the increasing importance of the genetic resources in these areas and the risk of their over-exploitation without due regard to conservation and equity imperatives.

Convention on the Conservation of Migratory Species and Wild Animals

148. The Convention on the Conservation of Migratory Species and Wild Animals (CMS or Bonn Convention) was concluded in 1979 and now has 81 parties. It cooperates with both CITES and the CBD.⁸⁵ At its 7th meeting in September 2002, the Conference of the Parties expanded its scope of

protection of marine migratory species, by adding six species of great whales to Appendix I and Appendix II; the great white shark to both appendices; and the porpoise, six species of dolphins, the dugong, all populations of killer whale not already listed, the South American sea lion and fur seal, and the West African and Amazonian manatee to Appendix II. Parties are required to adopt strict protection measures for Appendix I species, which are in danger of extinction throughout all or a significant proportion of their range. Parties are required to undertake cooperative action at the regional level for Appendix II species (e.g. through regional agreements).

149. COP-7 also adopted Resolution 7.3 on “Oil pollution and migratory species”, inviting Parties to implement a monitoring process in order to assess the cumulative environmental impacts of oil pollution on migratory species. Because by-catch is a major cause of mortality of migratory species, the COP called on Range States Parties to address this problem through regional fisheries management organizations and agreements (Recommendation 7.2). Regional cooperation was encouraged for small cetaceans and sirenians of Central and West Africa, in particular through the establishment of memoranda of understanding on these species and the implementation of collaborative action (Recommendation 7.3) and small cetaceans and dugongs of Southeast Asia (Recommendation 7.4).

150. Agreements to protect marine species adopted under the CMS include: the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS), which held its first meeting of the Parties in February-March 2002, when a Scientific Committee was established; the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS); the 1999 CMS MOU concerning the Conservation Measures for Marine Turtles of the Atlantic Coast of Africa which adopted a conservation plan at its 1st meeting in May 2002; the MOU on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia which held its 1st meeting in January 2003; and the Agreement on the Conservation of Albatrosses and Petrels.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

151. CITES entered into force in July 1975 and now has more than 115 member States. CITES protects biodiversity by banning commercial international trade in an agreed list of endangered species (Annex I) and by regulating and monitoring trade in others that might become endangered (Annex II). At the 12th Session of the Conference of the Parties held in November 2002, landmark decisions were taken to add to Annex II: the Big-headed turtle, the Yellow-headed turtle, the Malaysian giant turtle, the basking and whale sharks, and the entire genus of seahorses and to retain the bottlenose dolphin in Appendix II, with the addition of an annotation of zero export quota for live specimens of Black Sea bottlenose dolphin removed from the wild and traded for primarily commercial purposes. A proposal to transfer most populations of Minke and Bryde’s whales from Appendix I to Appendix II, thus allowing for the resumption of trade, was rejected. A proposal to include the Patagonian and Antarctic toothfish in Appendix II was withdrawn, although the Parties adopted a voluntary resolution to improve international monitoring of harvest and trade of toothfish and agreed to assist the Commission for the Conservation of Antarctic Marine Living Resources in its efforts to eliminate illegal fishing of toothfish. It is the first time that a CITES COP has assumed an active role in dealing with resources regarded as commodities and not just wild life.

The Ramsar Convention on Wetlands

152. *The Convention on Wetlands* signed in Ramsar, Iran, in 1971, provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The definition of wetlands includes areas “with water that is static or flowing, fresh, brackish or salty, including areas of marine water the depth of which at low tide does not exceed six metres”, which

includes most coastal zones around the world. The 8th meeting of the Conference of the Parties held in Valencia in November 2002 adopted the *Principles and Guidelines for incorporating wetland issues into Integrated Coastal Zone Management* (annexed to Resolution VIII.4). The Third Joint Work Plan between the Ramsar and the CBD Conventions, for the 2002-2006 period, was approved by the Ramsar Standing Committee in December 2001 and endorsed by the 6th Conference of the Parties of the Convention on Biological Diversity in 2002.

International Coral Reef Initiative

153. Coral reefs are often called 'rainforests of the sea' because of the remarkable diversity of life they support. As one of the most complex ecosystems on Earth, coral reefs are home to over 4,000 different species of fish, 700 species of coral, and thousands of other plants and animals. Unfortunately, despite the committed efforts of individuals and groups to save these fragile and valuable ecosystems, coral reefs are threatened all over the world.

154. A new report "Status of coral reefs of the World 2002", released on 10 December 2002 highlights evidence that human efforts may stop reef decline, provided they are supported by sufficient political will. The International Coral Reef Initiative (ICRI) was established to implement the recommendations of Chapter 17 of Agenda 21, in order to stop and reverse the global degradation of coral reefs and related ecosystems. The ICRI partnership approach has mobilized governments and other stakeholders in an effort to improve management practices, increase capacity and political support, and share information on the health of these valuable and vulnerable ecosystems. The Coordination and Planning Committee (CPC), the advisory body of the ICRI Secretariat, met in Cancun in June 2002, just after the second Regional Workshop of ICRI for the Tropical Americas: Improving Reef Conditions through Strategic Partnerships. The Workshop reviewed best management practices, in particular in the areas of sustainable tourism, fisheries and local communities in the context of ICRI's Regional Agenda for Action.

155. In recognition of the gravity of threats to coral reefs, the WSSD Plan of Implementation recommended the development of national, regional and international programmes to halt the loss of marine biodiversity, including coral reefs, as well as the implementation of the programme of action developed by ICRI. In resolution 57/141, the General Assembly stressed the importance for States to take measures for the protection and preservation of coral reefs and to support international efforts to this end, in particular the measures outlined in decision VI/3 of the CBD.

B. Protection and Preservation of the Marine Environment

1. Reduction and Control of Pollution from Vessels

156. In resolution 57/141, the GA reiterated its concern at the adverse impacts on the marine environment from ships, including pollution, in particular through the illegal release of oil and other harmful substances, as well as physical impacts on coral. It encouraged States to ratify or to accede to international agreements to prevent, reduce, control and eliminate pollution from, inter alia, ships, anti-fouling systems on ships, as well as to agreements providing for compensation for damage resulting from marine pollution. The WSSD had also invited States to become parties to and implement IMO conventions and protocols and other relevant instruments relating to the enhancement of maritime safety and protection of the marine environment from marine pollution and environmental damage caused by ships, including the use of toxic anti-fouling systems and urged IMO to consider stronger mechanisms to secure the implementation of IMO instruments by flag States.

(a) Harmful Aquatic Organisms in Ballast Water

157. Thousands of marine species are carried daily in ships' ballast water, on voyages that may transport them far away to new environments. While many do not survive, those that do can establish themselves and multiply into pest proportions, with resulting severe impacts for marine biodiversity and often at a significant cost to the community. UNCLOS Article 196 requires States to take all measures necessary to prevent, reduce and control pollution of the marine environment resulting from the intentional or accidental introductions of species, alien or new, to a particular part of the marine environment. Both WSSD and the General Assembly in its resolution 57/141 called upon States to accelerate the development of measures to address the problem of invasive alien species in ballast water and urged IMO to finalize the International Convention on the Control and Management of Ships' Ballast Water and Sediments.

158. IMO is taking three measures to address the problem of invasive species in ballast water: (1) design suggestions for ballast water and sediment management options in new ships; (2) the development of an international convention on the control and management of ships' ballast water and sediments; and (3) the GEF/UNDP/IMO GloBallast Programme, which is partly aimed at helping Member States to prepare for the implementation of the convention when it enters into force. Work on the draft convention is to be finalized this year in order to enable its adoption at a Diplomatic Conference on Ballast Water Management in early 2004. The most recent draft text⁸⁶ consists of a preamble, 22 articles and several regulations, based on a two-tier approach, with mandatory requirements applicable in all areas and special requirements applicable only in certain areas. Outstanding issues include the choice of one or more ballast water treatment standards and whether the exemptions are compatible with relevant UNCLOS articles. The success of the Convention depends upon the development of ballast water treatment techniques that are safe for the ship and crew, environmentally acceptable, practical, cost effective and biologically effective.

(b) Reception Facilities

159. Only a small number of official reports on the alleged lack of adequate reception facilities for waste (such as oily waste or garbage) are received each year, despite evidence from industry organizations, that the provision of adequate reception facilities in many ports is apparently lacking. IMO Circular MEPC/Circ.349 recommends that reports on alleged inadequacies of port reception facilities be forwarded to the flag State and the port State and that the flag State notify IMO.

160. UNEP, IMO and the Basel Convention have agreed to strengthen cooperation at the regional level in order to develop and implement a plan of action to address marine litter and debris, port reception facilities and waste management at the local government level.⁸⁷ At the IMO/UNEP Workshop on Marine Pollution Prevention and Environmental Management in Ports in the Wider Caribbean Region in May 2002, the participants recommended the establishment of port reception facilities to receive ship generated waste in the region without delay, and to give effect to the Special Area designation of the Region under Annex V. Problems to be overcome included transportation of wastes, building and operation of landfills, and construction and operation of treatment facilities. Assistance was requested for the design of facilities and process requirements.⁸⁸ GEF funds a project on Ship-Generated Waste Management in the Caribbean.

(c) Regional Initiatives to Prevent, Reduce and Control Pollution from Vessels

161. At the same IMO/UNEP Workshop, participants recommended an international approach for the regulation of waste waters and solid wastes from cruise ships; standards for the management of sewage and other wastes generated on board cruise ships and the implementation of those standards (e.g.,

monitoring of wastes discharges). The introduction of an “environmental tax” on tourists on board cruise ships was suggested as a means of funding programmes to enhance coastal water quality, with the Organization of the Eastern Caribbean States (OECS) GEF/OECS Solid and Ship-Generated Waste Management Project.⁸⁹

162. HELCOM notes that the accident involving the *Baltic Carrier* in March 2001, resulting in the discharge of 2,700 tonnes of heavy fuel oil to the Baltic Sea, highlighted the increased risk associated with dense traffic in the Baltic Sea which was expected to increase by 40 per cent in the future. The North Sea States at the Fifth International Conference on the Protection of the North Sea, March 2002, agreed on the need for greater cooperation between North Sea States and at the European Union level to enforce the internationally agreed rules and standards for the prevention, reduction and control of pollution from ships, as well as the need to increase detection of illegal discharges and to improve the investigation and prosecution of offenders. They agreed to create a network of investigators and prosecutors to improve the understanding of cooperation in the different stages of the enforcement process.

163. The sinking of the oil tanker *Prestige* off the coast of Spain, resulted in severe oil pollution of the coasts of Spain, Portugal and France. The European Commission has proposed new legislation in early 2003 introducing penal sanctions against any party (i.e., not only the shipowner, but also the owner of the cargo, the classification society or any other person concerned) causing a pollution incident through grossly negligent behaviour, as well as specific measures dealing with the issue of operational (deliberate) discharges from ships, including provisions on the gathering of evidence and the prosecution of offenders. It also stated that it had indicated its concerns with the international legal restrictions relating to coastal States’ jurisdiction over ship-source pollution. The Commission has called for further analysis of various measures which could achieve better possibilities for States to protect their coasts and coastal waters against ships which represent environmental hazards.

(d) Emergency Response

164. UNCLOS requires States to take measures for dealing with emergencies and to establish contingency plans for responding to pollution incidents. UNEP reported on the progress made together with IMO and several Regional Seas Conventions and Action Plans in strengthening their collaborative approach to issues of oil spill preparedness and response, in particular in the establishment of regional systems for cooperation in preparedness for and response to oil spills and in the implementation of regional training courses on response to oil spills. A joint IMO/UNEP Forum on regional arrangements in emergency response to marine pollution was held from 30 September to 2 October 2002. The proposed objectives of the Forum were: (a) exchange of experiences and information; (b) general overview of priorities and major achievements; (c) identification and discussion of issues of common concern to the different regions; (d) recommendations for future inter-regional cooperation; and (e) identification of areas for possible harmonization of procedures and collaboration.

165. Parties to the Convention for the Protection of the Mediterranean Sea against Pollution adopted a new “Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea” on 25 January 2002. Collaboration between the Mediterranean Action Plan and the Northwest Pacific Action Plan has been very active in the field of oil spill preparedness and response. The final draft of a Regional Oil Spill Contingency Plan for the Northwest Pacific has been completed and will be submitted for approval to the next Intergovernmental Meeting.

166. Recent developments in other regions include the convening, jointly with IMO, of two meetings of National Experts on the Protocol Concerning Cooperation in Combating Marine Pollution in Cases of Emergency in the Eastern African Region (Emergency Protocol) during 2001 and 2002. GEF reported that a project for the Western Indian Ocean Small Island Developing States, through the World Bank, contributed to their capacity to address oil spills and enhanced their activities under the Emergency Protocol. GEF also funds an Oil Pollution Management Project for the Southwest Mediterranean Sea. IMO has funded, in close cooperation with PERGSA, the preparation of a Regional Action Plan to cover the development of national systems and regional and sub-regional mechanisms to prepare for and respond to major oil spills in the Red Sea and Gulf of Aden. While some initial funding through the IMO Integrated Technical Cooperation Programme will allow this Plan to be started, IMO will work with PERGSA to find donors who will support the full implementation of the Action Plan.

2. Transboundary Movement of Hazardous Wastes

167. At their 6th Meeting in December 2002, the Conference of Parties to the Basel Convention on the Control of the Transboundary Movement of Hazardous Wastes and their Disposal (Basel Convention) agreed to establish a mechanism to assist parties to implement and comply with the provisions of the Convention (decision VI/12).⁹⁰ A Committee composed of 15 experts will assist parties to implement the Convention in a ‘simple, flexible, non-binding’ and confidential fashion. The Committee can examine cases submitted by a party that concludes that “in spite of its best efforts, it was unable to fully implement or comply with its obligations under the Convention”; a party that is affected by the non-compliance of another party; or by the Secretariat if it deems that a party has difficulties complying with the Convention. Unless the party agrees otherwise, the information will be considered in a closed meeting. The Committee will work through cooperation among the interested parties, consultation with other bodies of the convention, the assistance of outside expertise and consultation with the Secretariat in determining the root causes of the problem. It may provide a party with advice, non-binding recommendations and information relating to the establishment and/or strengthening of its regulatory regime; facilitation of assistance, in particular access to financial and technical support; elaboration of voluntary compliance action plans; and any follow-up arrangements. The Committee may also review general issues of compliance and implementation of the Convention and may recommend that the COP take additional measures regarding specific cases.

168. The COP also adopted a “Strategic Plan for the Implementation of the Basel Convention (to 2010)” (decision VI/1). It agreed to enlarge the scope of the Technical Cooperation Trust Fund and adopted guidelines on emergency assistance, compensation, and the development of capacity-building, transfer of technology and the development of measures to prevent accidents and damage to the environment caused by the transboundary movement of wastes and their disposal (decision VI/11). In decision VI/15 entitled “Basel Protocol on Liability and Compensation”, Parties to the Basel Convention are called upon to become a Party to the Protocol at the earliest opportunity.

169. By decision VI/24, COP-6 adopted Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of Ships.⁹¹ The Guidelines note that various materials historically used in the construction and operation of ships will become hazardous wastes, for example: asbestos, PCBs and substrates derived from the normal operation of ships, such as oil residues and products containing heavy metals released during the extraction phase of the dismantling process. The Guidelines include principles for the environmentally sound management of ship dismantling, good practice in environmental control procedures at ship-dismantling facilities, good practice in design, construction and operation of ship-dismantling facilities and how to achieve protection of the environment and human health. Measures to minimize hazardous materials aboard a ship before it is sent to a recycling facility are not addressed in the Guidelines, since IMO is dealing with this issue.

ILO is addressing health and safety issues relating to ship recycling. UNEP reports discussions between the Regional Seas Unit and the Secretariat of the Basel Convention regarding residue reception facilities for the recycling of ships.

170. IMO, DOALOS and the Secretariat of the LC were requested by the Technical and Legal Working Groups of the Basel Convention to provide information on the applicable legal regime in MARPOL 73/78, UNCLOS and the London Convention regarding ship dismantling and on relevant activities. Views were also requested on a number of questions, including when does a ship destined for dismantling cease to be a ship and become a waste; what criteria can be used to determine the point at which a ship becomes a waste and especially the intention to dispose of the ship; and which State has the responsibility to ensure compliance with the relevant international conventions during the voyage of the ship to the dismantling facility. The Legal Working Group of the Basel Convention at its fifth session, May 2002, considered the submissions received from IMO and DOALOS⁹² and decided to request the Parties, Signatories and others to provide their views on the same questions by 31 December 2002. Views on the legal aspects are to be submitted to COP-7.

C. Protection of Vulnerable Marine Ecosystems

171. As the oceans become progressively degraded, one of the most urgent issues is how to best protect the most sensitive and vulnerable areas of the sea. In order to discuss the protection of vulnerable marine ecosystems, it would appear necessary first, to define the terms; second, to identify examples of the most vulnerable marine ecosystems; third, to list the most important threats; fourth, to consider the binding and non-binding instruments applicable to those threats; and finally, to enquire what more can be done.

1. Definition

172. A marine ecosystem may be defined as the sum total of marine organisms living in a particular sea area, the interactions between these organisms, and the physical environment in which they interact. A vulnerable marine ecosystem could be defined as one that is particularly susceptible to disruption, to damage or even to destruction due to its physical characteristics, the activities and interactions of the organisms therein and the impacts they suffer from human activities and the surrounding environment. While some ecosystems may be fairly resilient and recover quickly from external shocks, others may be fragile and collapse at either slight or repeated stress.

173. UNCLOS adopts a fairly broad approach in dealing with ecosystems requiring special protection. While States are under a duty to protect the marine environment and conserve marine life generally, special measures may be needed to protect certain types of ecosystems. In article 194, paragraph 5, UNCLOS requires States to take the measures necessary to protect and preserve rare or fragile ecosystems, as well as the habitat of depleted, threatened or endangered species and other forms of marine life. For the purposes of this Report, the phrase “vulnerable marine ecosystems” will be used to encompass all such types of ecosystems.

174. The “Guidelines for the identification and designation of particularly sensitive sea areas” developed by IMO, describe “vulnerable marine areas” as areas that require special protection because of their high susceptibility to degradation by natural events or human activities. For example, biotic communities associated with coastal habitats may have a low tolerance to changes in environmental conditions, or may exist close to the limits of their tolerance. Such ecosystems may suffer natural stresses such as meteorological events or prolonged emersion; anthropogenic stresses such as pollution, excessive reduction in salinity, increase in turbidity from watershed mismanagement; or a combination of the two. The intensity and combination of exposure to such stresses determines whether there is total

partial or no recovery for the ecosystem. Oceanographic or meteorological factors also determine or increase the vulnerability of an area, for example by causing the concentration or retention of harmful substances in the waters or in the sediment of the area, or by otherwise exposing the area to harmful substances.⁹³ Ecosystems already subject to environmental stresses due to natural phenomena or human activities may need to be afforded special protection from further stress arising from all activities.

175. In the IMO Guidelines “uniqueness or rarity” and “critical habitats” are criteria for the identification of particular sensitive areas. Unique or rare ecosystems are defined as habitats of rare, threatened or endangered species that occur only in one area or ecosystems that occur in few locations or have been depleted across their range. Critical habitats include sea areas that may be critical habitats for fish stocks or rare or endangered marine species. These include regions of ocean space characterized by distinct bathymetry, hydrography, productivity, and trophically dependent populations, which function as critical habitats to certain fish species and other marine species that breed, rest, shelter, or feed in such areas. In fact ecological impacts caused by fisheries operations coupled with general environmental degradation, such as eutrophication of coastal waters, toxic pollution, or global warming are likely to have adverse effects on these ecosystems that may affect their productivity and ultimately their ecological balance.

2. Examples of Vulnerable Marine Ecosystems

176. In its Report “A Sea of Troubles” GESAMP identified a number of vulnerable areas and systems: coral reefs, wetlands, seagrass beds, costal lagoons, mangroves, shorelines, watersheds, estuaries, small islands, continental shelves and semi-enclosed seas.⁹⁴ Other examples include: habitats of endangered species; spawning and nursery areas; feeding grounds; seamounts; hydrothermal vents and polar regions. Since vulnerability depends on the specific physical as well as ecological characteristics of an area, ecosystems that are not generally considered vulnerable may be considered as such in specific locations. The following is a non-exhaustive list of particular ecosystems generally considered to be vulnerable.

177. *Mangroves* are among the most important ecosystems of coastal areas. Mangroves are woody plants that grow at the interface between land and sea in tropical and sub-tropical latitudes.⁹⁵ In addition to their role in the protection of coastlines from erosion, storm damage, and wave action, they possess a natural ability to host rich assemblages of marine species, including valuable fish species and marine mammals. More importantly, mangroves may play a special role as nursery for juvenile fish and refuge for the early stages of adult fish that occur in other habitats, such as coral reefs or seagrass beds. Such a density of juvenile fish in mangrove waters has been attributed mainly to three underlying causes: (i) abundance of appropriate food for juvenile fish in mangroves estuaries; (ii) minimization in the risk of predation by large fish due to the reduced visibility in turbid mangrove waters; and (iii) adequacy of the structural complexity of mangroves to provide excellent shelter and protection for juveniles.⁹⁶

178. *Seagrasses* are closely associated with mangrove habitats in many parts of the world. Although seagrass beds often occur in close proximity to mangroves, the two habitats may not be closely coupled. Seagrass also help supports fish populations by serving as food and critical habitat for fish. In addition, a number of fish species may use seagrass habitat as a nursery area.⁹⁷

179. *Warm water coral reefs* are tropical shallow water ecosystems that flourish best at temperatures between 25 degree C and 29 degree C, and therefore tend mainly to be restricted to marine areas between the latitudes 30 degree N and 30 degree S. They rank among the most biologically productive and diverse of all natural ecosystems, supporting sometimes as many as 3,000 species. The great number of holes and crevices in a reef provide abundant shelters and important nurseries for fish. In

addition, the standing crop of fish populations on reefs may reach 5 to 15 times the size of crops of productive North Atlantic fishing grounds and are able to provide 5,000 kg per fishermen per year. The high productivity of coral reef ecosystems is believed to result principally from their flowing water, efficient biological recycling, and high retention of nutrients.⁹⁸

180. *Seamounts* are defined generally as isolated elevations in areas under national jurisdiction or on the high seas, which do not rise above the sea surface. Existing assessments show that they have high levels of endemic species, together with certain other high seas underwater features, such as deep-sea ridges and plateaus. Of 921 species of fish and benthic macrofauna collected on 24 seamounts in the Tasman and south Coral Seas, between 16 and 36 per cent were new to science and many, if not most, were potentially endemic to the individual seamounts or seamount clusters on which they were collected. Information currently available indicates that the total number of species endemic to deep-sea seamounts may range from tens of thousands or more, thus potentially making these ecosystems the most prolific and diverse on the planet.⁹⁹

181. *Hydrothermal vents* are created at seafloor spreading centres, where cold water penetrates into the seafloor through fissures. After the water becomes superheated near the roof of shallow magmatic chambers beneath the ridge axis and enriched with metal ions and other substances leached from surrounding rock, it is expelled in highly localized sites known as hydrothermal vents. The plumes of mineral-laden water are known as 'smokers' and the minerals may precipitate out to form large chimneys. In addition to venting via chimney structures, heated water may also appear as diffuse flow around the vent field. The sulphide in the vent fluid is the primary substance supporting the unique vent ecosystem, through chemosynthesis. Hydrothermal vents are found on active spreading ridges, in subduction zones, fracture zones, back-arc basins and on seamounts. The fauna of hydrothermal vents is vastly different from the surrounding deep-sea benthos. Primary production at vents is reliant upon microbes having the ability to use the reduced inorganic compounds in vent fluids to synthesize organic matter. Hydrothermal vents may be considered as isolated 'biological' islands. Around 90% of the species described to-date from vents are endemic.

182. *Polar regions*. As recognized by UNCLOS, ice-covered areas are characterized by particularly severe climatic conditions creating unique environmental problems. Due to the extremely low temperatures, and the presence of ice cover for most of the year, pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance.¹⁰⁰ Both the Arctic and the Antarctic ecosystems are particularly vulnerable to changes in environmental conditions or to resource exploitation, as it is difficult to remove contaminants or for damaged organisms to regenerate. The Arctic is a marine area dominated by a deep, ice-covered central ocean with surrounding shallow coastal seas. The shelf seas, ice edges and polynyas - open-water areas in areas of sea ice - are seasonally some of the most biologically productive ecosystems in the world. Unfortunately, atmospheric transport of contaminants from thousands of miles distance have led to high levels of toxic chemicals in wildlife and even human beings. The circulation and subsequent melting of ice on shelf areas allows contaminants to be redistributed to deep ocean sediments and other shelf seas. In contrast, the Antarctic consists of a frozen land mass surrounded by the Southern Ocean, which represents 10% of the world's sea area. Relatively little of this area is permanently covered by ice. Instead vast areas are subject to a strongly seasonal ice cover which forms in winter and melts the following spring. This seasonal ice zone includes all of the areas of continental shelf and slope around the Antarctic continent. Biological diversity in the Antarctic ecosystem is low.

183. *Vulnerable Marine Ecosystems and Fisheries Conservation* While international fisheries governance has focused its attention on reducing fishing efforts, improving compliance with and

enforcement of conservation and management measures established by regional fishery bodies, through the adoption of legally binding or voluntary instruments, sufficient attention has yet to be given by the international community to the protection of vulnerable marine ecosystems from adverse impact of fishing and non-fishing activities, as important steps towards contributing to fisheries conservation within an ecosystem-based management of marine capture fisheries. Such steps may include initiatives to reduce land-based sources of marine pollution, and may involve, in addition to the application of fishery regulatory measures, such as temporary closed areas and closed seasons, the establishment, inter alia, of: (a) flexible exclusion zones to protect juvenile fish; (b) reserved areas for small-scale fisheries; (c) marine protected areas to preserve critical habitats, and ultimately a global moratorium on commercial fishing around high seas seamounts.

184. For the purpose of fisheries conservation, vulnerable marine ecosystems could be identified as particular regions of ocean space characterized by distinct bathymetry, hydrography, productivity, and trophically dependent populations, which function as critical habitats to certain fish species and other marine species that breed, rest, shelter, or feed in such areas. Ecological impacts caused by fisheries operations coupled with general environmental degradation, such as eutrophication of coastal waters, toxic pollution, or global warming are likely to have adverse effects on these ecosystems and may affect, in some circumstances, their capacity to support sustainable fisheries. These ecosystems encompass mangroves, reefs and high seas seamounts.

3. Threats to Vulnerable Marine Ecosystems

185. Many competing uses of coastal zones and ocean areas, such as land-based activities, fishing, mariculture, shipping activities and the exploration and exploitation of minerals, as well as natural phenomena, may directly impact vulnerable marine ecosystems. The nature and intensity of pressures vary from place to place, as does the vulnerability of different ecosystems. Yet it is evident that the nearer one gets to land the greater the damage is to the sea, its life and resources. The crises are deepest where the waters are shallow. It is here that pollution is at its worst, habitats are most readily destroyed, and much of fisheries depletion takes place. Alteration and destruction of habitats and ecosystems is widespread. Rivers, lakes, estuaries and coastal waters are the hardest hit – and wetlands, mangroves, seagrass beds and coral reefs are particularly vulnerable. According to GESAMP, at least half of the world's mangrove forests have been lost over the last century and 70 per cent of coral reefs are threatened.¹⁰¹ In many places fisheries are affected, as fishing spawning and nursery grounds are degraded. The open oceans suffer some contamination and ecological damage, but compared to the coastal areas they are still in a relatively healthy state.¹⁰²

(a) Land-based Activities

186. Land-based activities are responsible for 80 per cent of the pollution of the oceans which affect the most productive areas of the marine environment. Pollution resulting from sewage, agricultural and industrial chemicals, and industrial organic wastes have caused very serious, pervasive and continuous degradation of coastal ecosystems. Furthermore, coastal development has ruined increasingly large stretches of the world's coasts, and reduced the extent of natural ecosystems. For example, large areas of lagoons, estuaries and mangroves have been destroyed to create ports or real estate or agricultural land in land-scarce regions. Coastal zone damage is particularly acute in developing tropical countries where both natural and economic conditions contribute to high vulnerability of these areas. The growth in population and migration in coastal cities and regions are leading to increases in municipal and industrial discharges and landfill, mangrove clearing, coral mining and other construction-related damages.¹⁰³

187. In some developing countries, siltation of coastal areas is becoming severe as a result of inland deforestation, the construction of lumber roads and land clearing. Intensified agriculture is also contributing to an increase of amounts of pesticides and herbicides to coastal waters. Moreover, intensive forms of aquaculture have become themselves a source of pollution. In shrimp farming, the clearing of mangroves, the extensive harvesting of wild larvae and the indiscriminate use of antibiotics to control diseases are negatively affecting important commercial fish stocks.¹⁰⁴ In addition, deforestation, soil erosion and the diversion of water courses increases sedimentation rates along the coast and adversely affect shorelines and habitats. Wetlands, deltaic habitats and bottom dwelling communities (e.g. coral reefs, seagrass beds) can be significantly affected by changes in sediment flows.

188. Land-based sources of pollution originate from: (i) sewage loaded with inadequately treated domestic wastewater; (ii) physical alterations and destruction of habitats resulting from the increase of can lead to eutrophication and changes in species diversity, excessive algal growth, dissolved oxygen reductions and increased prevalence of toxic algal blooms; (iii) persistent organic pollutants associated with industrial processes, product use and applications, waste disposal, leaks and combustion of fuels and waste materials; (iv) radioactive substances resulting from the production of energy, reprocessing of spent fuel, military operations, nuclear testing, medical applications and other operations associated with the management of radioactive wastes and the processing of natural materials by industrial processes; (v) heavy metals from various industrial point sources; (vi) sediment mobilization resulting from construction activities, forestry operations, agricultural practices, mining practices, hydrological modifications, dredging activities and coastal erosion; (vii) litter entering the marine and coastal environment from poorly managed or illegal waste dumps adjacent to rivers and coastal waters, windblown litter from coastal communities, resin pellets used as feedstock and dumping of garbage into the coastal environment; (viii) oils – hydrocarbons from operational and accidental discharges and emissions from exploration, exploitation, refining and storage facilities, urban, industrial and agricultural run-off and inappropriate disposal of used lubricating oils.

189. The health of mangroves ecosystems is being adversely affected by stress induced by natural causes (e.g., prolonged dry periods, changes in the frequency and duration of tidal flooding or in salinity) and anthropogenic disruptions associated with human activities, particularly those related to land-based sources of pollution, including metal pollution, organic pollution and oil pollution, as well as pond culture and wide-scale mangrove destruction. This damage to mangroves directly impacts on fishery resources and the lives of those who depend on them.¹⁰⁵

190. Similarly, coral reefs are also facing stress from both natural and human-induced causes. Aside from coral bleaching due to climate change, dredging, sewage discharges, and thermal pollution from release of power plant cooling water have destroyed coral reefs in various parts of the world. Chemical pollutants originating offsite have a number of effects on coral reefs ecosystems: killing mature plants and animals; interfering with physiological, particularly reproductive processes; aborting larval development; making areas unsuitable for recruitment or settlement of new individual; and smothering or changing the texture of the habitat.¹⁰⁶ Fishing with explosives and coral mining to meet the demand for lime in some countries have also created wastelands of once productive reefs.¹⁰⁷

(b) Over-exploitation of fish stocks and destructive fishing practices

191. Overfishing removes vast amounts of biomass from the middle of the food chain and destructive fishing methods add to the crisis. Intensive forms of aquaculture have become a source of pollution. In shrimp farming, the clearing of mangroves, the extensive harvesting of wild larvae and the indiscriminate use of antibiotics to control diseases are negatively affecting important commercial fish

stocks.¹⁰⁸ In addition, certain fish practices used by small-scale and artisanal fishers fishing on tropical reefs are having severe environmental effects. These include the use of dynamite and poisons as well as techniques in which fish are driven into nets by swimmers pounding the coral reefs. Such fishing techniques can cause direct physical damage to the reef substratum. Local populations are forced to resort to those highly destructive techniques when faced by increasing scarce resources and lack of alternative opportunities for employment.¹⁰⁹

192. As to seamounts, the fauna and flora of such ecosystems and other underwater features, particularly those that are not migratory, are also threatened by human activities. Bottom-trawl fishing is considered to be the greatest danger to seamount ecosystems due to fishing gear impacts on fish habitat structure. Trawls are non-selective gears which can take considerable by-catch, and their interactions with the sea bottom may lead to irreversible modifications to bottom ecosystems. The expertise, technology and markets are improving for these fisheries and, given the current trend characterized by an increasing demand and a restricted supply for fisheries products worldwide, the scale of fishing on seamounts and other deep-sea areas is likely to grow in coming years, at the expense of unique and endemic species inhabiting these areas.¹¹⁰

(c) Sea-based activities

193. Shipping activity can also constitute an environmental hazard to the marine environment in general and consequently even more so to vulnerable ecosystems. Environmental hazards associated with shipping may include operational discharges; accidental or intentional pollution; and physical damage to marine habitats or organisms as well as the introduction of alien species. In the course of routine operations and accidents, ships may release a wide variety of substances either directly to the marine environment or indirectly through the atmosphere. Such pollutants include oil and oily mixture, noxious liquid substances, sewage, garbage, noxious solid substances, anti-fouling paints, foreign organisms and noise. Many of these substances can adversely affect the marine environment and the living resources of the sea. Pollutants may also damage the environment as a consequence of shipping accidents. Moreover, ships may cause harm to marine organisms and their habitats through physical impact.¹¹¹

194. Other sea-based activities which can have an adverse impact on marine ecosystems are exploration and exploitation of non-living marine resources, such as oil and gas, or dumping activities at sea. Deep-sea trenches have been proposed as suitable sites for waste disposal, e.g., mining tailings, dredge spoils and excess industrial CO₂ owing to their isolation and supposed ability to retain waste materials. However, there are unknown risks associated with waste disposal as trenches are tectonically active. The main direct threat to trench fauna is through poisoning by toxic chemicals from waste disposal. There would be limited flushing from the trench and microbial activity may be a relatively low level, especially when faced with new substances.¹¹²

(d) Marine scientific research

195. Hydrothermal vents are potentially threatened by human activities including marine scientific research.¹¹³ Impacts from marine scientific research at hydrothermal vents may lead to habitat loss and organism mortality as a result of¹¹⁴ (a) removing chimneys and rocks for geological investigations or chemical sampling (b) environmental manipulations such as drilling (c) clearing fauna, e.g. for experimental studies on recolonization or collecting fauna for biodiversity or population studies (d) transplanting fauna between locations (e) placement of instrument packages that may disturb fauna and change water flows (f) observation e.g. deleterious effects of light on photosensitive organisms and (g) the use of manned submersibles and remotely operated vehicles that can damage the fauna by landing on them or causing damage by the use of thrusters.

(e) Global climate change

196. Evidence is emerging that rapid climate change caused by global warming has affected vulnerable ecosystems and marine biodiversity, including coral bleaching and the loss of other fragile habitats. Experiments¹¹⁵ reveal that practically all marine animals living in some of the coldest part of the world are extraordinarily sensitive to very small increase in ambient temperature. Warming has altered habitats and ecosystems and forced marine species around the world to move into new ranges. Reports indicate that species such as salmon, reef fish and other species are moving toward the poles in response to warming sea temperatures.¹¹⁶ A predicted rise in sea temperature of just 2 to 3 Celsius over the next 100 years would entail for the ocean around the Antarctic a loss of a number of valuable marine wildlife.¹¹⁷ Low-lying countries including SIDS and their atolls are particularly threatened by a rise in sea-levels.

4. Legal and policy framework for the protection of vulnerable marine ecosystems

(a) Global instruments (binding or recommendatory)

Instruments providing for the protection of particular species and /or specific areas

197. *UNCLOS* provides a global framework for the protection and preservation of marine environment. Article 192 of *UNCLOS* establishes a general obligation for States to protect and preserve the marine environment. Article 194, para.5 calls upon States to “protect and preserve rare and fragile ecosystems as well as habitat of depleted, threatened or endangered species and other forms of marine life”. These ecosystems may be threatened by pollution from: (i) land-based sources (article 207); seabed activities subject to national jurisdiction and in the Seabed Area (articles 208 and 209); dumping (article 210); vessels (article 211); and atmosphere (article 212). In addition, article 234 of *UNCLOS* which provides for the rights of coastal States to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone (EEZ).

198. Furthermore, *UNCLOS* requires States to conserve and manage marine living resources within areas under national jurisdiction and beyond and to protect and preserve the marine environment. Under article 62(4) of *UNCLOS*, in the EEZ, the coastal State may inter alia, regulate seasons and areas of fishing, the types, sizes and amount of gear, and the types, sizes and number of fishing vessels that may be used; and fix the age and size of fish and other species that may be caught and take any other measures necessary for conservation, including moratoria and closed seasons. On the high seas, *UNCLOS* requires States to cooperate with each other in the conservation and management of living resources including in relation to straddling fish stocks and highly migratory fish stocks. Conservation measures must be designed on the best scientific evidence available, to maintain or restore populations of harvested species at levels, which can produce the maximum sustainable yield, and to maintain and restore populations of associated or dependent species. With respect to the protection and preservation of the marine environment in the Area, article 145 of the Convention requires the Authority to establish rules, regulations and procedures to ensure the effective protection of the marine environment, the protection and conservation of the natural resources of the Area and the prevention of damage to its flora and fauna from harmful effects that may arise from activities in the Area.

199. *Agenda 21, Chapter 17 of the 1992 United Nations Conference on Environment and Development (UNCED)* elaborates upon the provisions of *UNCLOS*, updates them, and sets out a plan of action for their implementation. It reiterates the need to protect and preserve vulnerable marine ecosystems. With respect to areas under national jurisdiction, Agenda 21 recommends to coastal States the conservation and restoration of altered critical habitats and the adoption of measures aimed at maintaining biological diversity and productivity of marine species and habitats, including inventories of endangered species

and critical coastal and marine habitats.¹¹⁸ It requests international shipping to ensure respect of areas designated by coastal States, within their EEZs, consistent with international law, in order to protect and preserve rare or fragile ecosystems, such as coral reefs and mangroves. On the high seas, UNCED requires States to preserve marine habitats and other ecologically sensitive areas.

200. *The 1995 UN Fish Stocks Agreement* although primarily concerned with the conservation and management of straddling fish stocks and highly migratory fish stocks, provides for the protection of species belonging to the same ecosystem as the target stocks. It requires that fishing States minimize pollution, waste and adverse impacts of fishing on associated or dependent species, in particular endangered species, through the development and use of selective, environmentally safe and cost-effective gear and techniques. States must apply widely the precautionary approach, and develop data collection and research programmes to assess the impact of fishing on non-target and associated or dependent species and their environment. They must also adopt plans to ensure the conservation of such species and to protect habitats of special concern.

201. Similarly, the *FAO 1995 Code of Conduct for Responsible Fisheries* establishes as one of its general principles the protection and rehabilitation of all critical fisheries habitats in marine and fresh water ecosystems, such as wetlands, mangroves, reefs, lagoons, nursery and spawning grounds. In this connection, it stresses that particular effort should be made to protect such habitats from destruction, degradation, pollution and other significant impacts resulting from human activities that threaten the health and viability of fishery resources. It invites States and subregional and regional fisheries management organizations and arrangements, within their respective competences, to ensure, that fishery resources and habitats critical to the well-being of such resources, which have been adversely affected by fishing or other human activities, are restored.

202. From the broader perspective of protecting all biodiversity, the *1992 Convention on Biological Diversity* (CBD) requires that for in-situ conservation, Contracting Parties rehabilitate and restore degraded ecosystems and promote the recovery of threatened species through the development and implementation of plans and other management strategies, as part of their obligations under the Convention. They are required to adopt measures for the protection of threatened species, and to support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced. Parties are required to regulate or manage biological resources important for the conservation of biological diversity to ensure their conservation and sustainable use; and to rehabilitate and restore degraded ecosystems and promote the recovery of threatened species through the development and implementation of plans or other management strategies. They must establish a system of protected areas or areas where special measures must be taken to conserve biological diversity.

203. *The International Convention for the Regulation of Whaling, 1946* provides international regulations for the effective conservation and management of whales. The International Whaling Commission can establish “open and closed waters” and designate sanctuary areas. Commercial, but not scientific whaling is prohibited in a sanctuary.

204. *The Convention on Migratory Species (CMS)* requires its Parties to take individually or in cooperation appropriate and necessary steps to conserve migratory species and their habitats (for details see section A. 6 above).

205. *CITES* prevents and controls trade in endangered species of wild fauna and flora when commercial demand threatens its overexploitation or extinction, as explained in section VI.A.6 above.

206. *The Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities* (GPA) adopted in 1995 aims at preventing the degradation of the marine environment from land-based activities by assisting States in taking actions individually or jointly within their respective policies, priorities and resources, which will lead to the prevention, reduction, control and/or elimination of the degradation of the marine environment, as well as to its recovery from the impacts of land-based activities. Marine areas considered as vulnerable include: critical habitats, including coral reefs, wetlands, seagrass beds, coastal lagoons and mangrove forests; habitats of endangered species; ecosystem components, including spawning areas, nursery areas, feeding grounds and adult areas; shorelines; coastal watersheds; and estuaries.

207. *The Plan of Implementation of the World Summit on Sustainable Development* adopted in September 2002, states that in order to promote the conservation and management of oceans, actions are needed at all levels, to maintain the productivity and biodiversity of important and vulnerable marine and coastal areas, including in areas within and beyond national jurisdiction. It recommends the implementation of the work programme arising from the Jakarta Mandate on the Conservation and Sustainable Use of Marine and Coastal Biodiversity; the use of the ecosystem approach; the elimination of destructive fishing practices; time/area closures for the protection of nursery grounds and periods; proper coastal land use and watershed planning; the integration of marine and coastal areas management into key sectors; the establishment of marine protected areas consistent with international law and based on scientific information; the development of national, regional and international programmes for halting the loss of marine biodiversity, including in coral reefs and wetlands; and the implementation of the programme of action called for by the International Coral Reef Initiative for wetland ecosystems in coastal zones, including coral reefs, mangroves, seaweed beds and tidal mud flats.¹¹⁹

208. *The Convention on Wetlands of International Importance Especially as Waterfowl Habitat, 1971 (Ramsar Convention)* requires a State Party to designate at least one wetland “within its territory” for inclusion in the “List of Wetlands of International Importance”.

209. *The Convention Concerning the Protection of the World Cultural and Natural Heritage UNESCO, 1972 (World Heritage Convention)* provides for the establishment of a “World Heritage List” and a “List of World Heritage in Danger” in order to protect cultural and natural heritage. A number of marine areas have been designated on these lists.

Instruments providing for the identification of areas where special protective measures apply

210. *UNCLOS* does not specify in article 194(5) what protective measures should be taken to meet the requirements of the article. It recognizes the need for special protective measures in certain marine areas in only three different contexts: conservation of living marine resources; exploitation of resources in the Area; and prevention, reduction and control of pollution from vessels.

211. *Prevention, reduction and control of pollution from vessels.* In article 211, paragraph 6, *UNCLOS* permits coastal States to take special measures, adopted by IMO, to protect a defined area of the EEZ which, because of its oceanographical and ecological conditions, as well as the utilization or the protection of their resources and the particular character of its traffic, requires special mandatory measures more stringent than those offered by the generally accepted international rules and standards for the prevention, reduction and control of pollution of the marine environment from vessels. The coastal State can also adopt for the same area additional national laws and regulations relating to discharges and navigational practices, provided they are agreed to by the competent international

organization. In the territorial sea, the coastal State may adopt any measure to protect an area from pollution, so long as it is in conformity with the Convention, it does not have the practical effect of hampering innocent passage and does not apply to the design, construction, manning or equipment of foreign ships (articles 21, 22, 23).

212. *MARPOL 73/78* provides for the designation of “special areas” where the discharge of oil, noxious liquid substances and garbage (the substances listed in Annexes I, II and V of *MARPOL 73/78*) is controlled more strictly than in the generally applicable international standards. A “special area” is defined as “a sea area where for recognised technical reasons in relation to its oceanographical and ecological conditions and to the particular character of its traffic, the adoption of special mandatory methods for the prevention of sea pollution by oil, noxious liquid substances, or garbage, as applicable, is required.” Annex VI of *MARPOL 73/78* uses the concept of special emissions areas called “sulphur oxide emissions control areas”. Under the IMO Guidelines for the Designation of Special Areas under *MARPOL 73/78* vulnerable marine and coastal ecosystems could qualify for increased protection in recognition of their ecological conditions, either as: (i) areas of high natural productivity, (ii) spawning, breeding and nursery areas for important marine species and areas representing migratory routers for seabirds and marine mammals; (iii) rare or fragile ecosystems ; or (iv) critical habitats of marine resources.

213. *SOLAS and ships’ routeing and reporting*. Ship routeing and reporting systems are available under *SOLAS* and IMO’s General Provisions on Ships’ Routeing to protect environmentally sensitive areas and marine species. Routeing measures include the establishment of areas to be avoided, or no-anchoring areas to protect, e.g., coral reefs. A mandatory ship reporting system can be adopted by IMO to protect sensitive areas or species in the territorial sea or the EEZ.

214. *IMO Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas (PSSAs) 2001* (IMO Assembly resolution A.927(22)) provide for an area to be designated as a PSSA: the area needs special protection through action by IMO, it has significance for recognized ecological, socio-economic, or scientific reasons and it may be vulnerable to damage by international shipping activities”. Candidate areas must meet at least one of three criteria: (1) ecological; (2) social, cultural and economic; or (3) scientific and educational; and should be at risk from international shipping activities. Included among ecological criteria are the following: uniqueness or rarity, critical habit, dependency, diversity, productivity, spawning or breeding grounds and vulnerability. A determination as to whether an area is at risk from shipping activities involves a consideration of vessel traffic characteristics (types of maritime activities and vessels, volume of traffic and harmful substances carried) and natural factors (hydrographical, meteorological and oceanographic). Protective measures available through IMO include: (1) designation as a Special Area and/or as a SOx Emission Control Area under *MARPOL* special discharge restrictions on ships operating in a PSSA; (2) ships’ routeing and reporting systems near or in the area; and (3) other measures, such as compulsory pilotage schemes or vessel traffic management systems, aiming at protecting specific sea areas against environmental damage from ships.

(b) Regional instruments

UNEP Regional Seas Programme

215. Most regions covered by the UNEP Regional Seas Programme have adopted a framework convention on the protection of the marine environment, which includes an article providing for the establishment of specially protected areas. For example, both the Convention for the Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African

Region, 1981, and the Convention for the Protection and Development of Natural Resources and Environment of the South Pacific Region, 1986, require their Parties to take all appropriate measures, jointly or individually, including the establishment of “Specially Protected Areas” to protect and preserve rare and fragile ecosystems as well as the habitat of depleted, threatened or endangered species or other marine life. In addition, some regional seas conventions contain specific Protocols concerning specially protected areas.¹²⁰

Other regions

216. *The Protocol on Environmental Protection to the Antarctic Treaty, 1991*, prohibits in its Annex IV practically all forms of pollution from ships in the entire Treaty area. Annex II provides special protection to species of native mammals, birds and plants designated “Specially Protected Species” under Appendix A to Annex II. Annex V provides for the establishment of “Antarctic Specially Protected Areas” and “Antarctic Specially Managed Areas”. The former may be established in any part of the Antarctic Treaty Area, including the marine environment to protect outstanding environmental, scientific, historic, aesthetic, or wilderness values or scientific research.

217. *The Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992*, provides for the designation of Protected Areas if an area meets the criteria set out in HELCOM Recommendation 15/5, also taking into account the interests of fisheries and aquaculture. The criteria include areas with habitats of endemic, rare or threatened species and communities of fauna and flora; habitats of migratory species; nursery and spawning areas; and rare or unique or representative geological or geomorphological structure process.

218. *The Convention for the Protection of the Marine Environment of the North-East Atlantic, 1992*, provides in its Annex V for the development of protective and conservation measures related to specific areas, making use of the precautionary approach and other concepts such as, best environmental practice, best available techniques and clean technology. Parties are required to take the necessary measures to restore, where practicable, marine areas which have been adversely affected. OSPAR is to develop means, consistent with international law, for instituting protective, conservation, restorative or precautionary measures related to specific areas or sites or related to specific species or habitats.

5. Management Approaches and Tools to Protect Vulnerable Marine and Coastal Ecosystems

(a) Integrated Management Approaches and Land-based Activities

219. The most effective approach to ensure the protection of vulnerable ecosystems is the adoption of an integrated, multidisciplinary, and multisectoral coastal and ocean management at the national level, as recommended in Chapter 17 of Agenda 21 and by the Plan of Implementation of the WSSD, as well as by the Consultative Process. An ecosystem based management also needs to be adopted, in order to provide a more holistic approach to manage marine ecosystems as a whole rather than specific individual elements within them, and to allow a longer-term sustainable strategy.

220. The need for a cross-sectoral, holistic management has been identified as a basic principle for protection of the marine environment from land-based activities. States are encouraged to develop a National Programme of Action (NPA) as a flexible management and policy framework designed to fit into countries specific developmental policies, programmes and plans for the protection of the marine environment, including the protection of vulnerable marine ecosystems. An NPA should include a two-dimensional framework for actions supported by administrative and management structures necessary for its implementation. The first dimension recommends management actions aimed at: (i) identifying and assessing the nature and severity of problems in relation to the affected or vulnerable ecosystems; (ii) establishing priorities; (iii) setting management objectives for priority problems; (iv) identifying,

evaluating and selecting strategies and measures; (v) developing criteria for evaluating the effectiveness of strategies and measures; and (vi) ensuring necessary programme support element. The second dimension recommends specific actions related to specific pollutant source categories, such as sewage, persistent organic pollutants, radioactive substances, heavy metals, oils, nutrients, sediment mobilization, litter, and physical alterations and destruction of habitats.¹²¹

221. Because of the transboundary effects of marine pollution, cooperation among States in the same region are essential to protect fragile ecosystems. Thus, States are encouraged to develop regional programmes of action for the protection of the marine environment from land-based activities. The UNEP Regional Seas Programme and other regional seas programmes and organizations provide an integrated framework to identify regional priorities and develop regional programmes of action. The important role of regional seas programmes was acknowledged by the *First Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities* (Montreal, November 2001).¹²²

(b) Protection of Vulnerable Ecosystems from Fishing- induced Stress

222. The impact of fishing on the marine environment is a global issue of concern, particularly in relation to fragile marine and coastal ecosystems. Various gears and fishing methods have attracted attention for their potential impact on the environment, especially habitat damage. Gear and techniques have been modified to reduce possible impacts, including improvement of the selective performance of trawl gear to eliminate the by-catch of fish in shrimp fisheries.¹²³ Trawling has caused severe damage to coral reefs, although little is known about its long-term effects on such ecosystems. As an application of precautionary approach, Norway introduced in 1999 non-trawling areas where the risk of damage to deep-water coral reefs was high. In addition, the impact of trawling on the bottom habitat is being investigated in many countries.¹²⁴ A global project to reduce the environmental impact from tropical shrimp trawling, focusing on 12 countries over the period 2002 to 2007, has been jointly approved by GEF and UNEP, for execution by FAO in 2002.

223. Pursuant to article 62 (4) of UNCLOS coastal States must conserve marine living resources within their EEZ using measures such as: regulating seasons and areas of fishing, the types, sizes and amount of gear, and the types, sizes and number of fishing vessels that may be used; and fixing the age and size of fish and other species that may be caught. Some coastal States have established marine protected areas (MPAs) as a tool for managing fragile marine ecosystems.

(c) Establishment of Marine Protected Areas

224. An MPA may be generally identified as a geographically defined area, which is designed and managed to achieve specific conservation objectives. The FAO defines MPA as “a protected marine intertidal or subtidal area, within territorial waters, EEZs or in the high seas, set aside by law or other effective means, together with its overlying water and associated flora, fauna, historical and cultural features. It provides degrees of preservation and protection for important marine biodiversity and resources; a particular habitat (e.g. a mangrove or a reef) or species, or sub-population (e.g. spawners or juveniles) depending on the degree of use permitted. The use of MPAs (for scientific, educational, recreational, extractive and other purposes including fishing) is strictly regulated and could be prohibited.”¹²⁵ The *IUCN Guidelines for Marine Protected Areas* defines MPAs as “any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment”.¹²⁶ Marine protected areas (MPAs) are tools designed to reduce the pressure of human activities on coastal/marine ecosystems and resources by managing multiple human uses in a defined geographic area. They can help conserving biodiversity by protecting habitats, and they

increase productivity by providing safe havens for species under threat. They may also be used for long-term environmental monitoring studies and control sites for studying management techniques.¹²⁷

225. The CBD Ad Hoc Technical Expert Group on Marine and Coastal Protected Areas (MCPAs) recognized many benefits of MCPAs relating to both conservation and sustainable use of biological diversity, including protecting ecosystem structure, functioning and beauty; allowing recovery from past damage; improving fishery yields; and providing social and economic benefits to local communities and nations. MCPAs provide the best available strategy to make integrated marine and coastal area management regimes effective according to the report of the Expert Group.¹²⁸

226. According to the experts, MPAs have the potential to conserve entire ecosystems that are unique, particularly rich in species, or representative of biogeographical units. They could help maintain ecosystem productivity; safeguarding essential ecological processes by controlling activities that disrupt them or that physically damage the environment. MPAs can also contribute to the replenishment of threatened marine resources through creation of “No-Fish Zones”, such as “No-Take Zones” or sanctuaries. In this respect, they can safeguard breeding sanctuaries from which individuals can disperse to stock exploited areas. Other MPA protections may be necessary to safeguard recognized nursery areas for juvenile fish.¹²⁹

227. Of these MPAs, marine reserves are the most documented in scientific and marine management literature and they have been established along many different coastlines around the world. Fully protected marine reserves are areas in which no extractive use of any resource, or any habitat destruction is allowed. Others, with less comprehensive levels of protection from extraction, such as seasonal closures, bans on taking reproductive individuals, and catch limits are common in marine habitats.¹³⁰ Study of more than one hundred reserves shows that reserves usually augment population numbers and individual size of overexploited species. In general terms, they are believed to provide protection from major consequences of overfishing in three ways. First, they protect individual species of commercial or recreational importance from harvest inside marine reserve boundaries. Second, they reduce habitat damage caused by fishing practices that alter biological structures, such as oyster reefs, necessary to maintain marine ecosystems. Third, they protect from ecosystem overfishing, in which removal of ecologically pivotal species throws an ecosystem out of balance and alters its diversity and productivity.¹³¹ Over the last 30 years, marine reserves have been established along coral reefs, temperate shores, estuaries, mangroves and many other habitats.¹³² Marine reserves are particularly effective in situations where biological habitats are severely disrupted by overfishing and where local populations of fish species rely on these habitats. Small reserves can function as important conservation tools and benefit local fisheries if they are intend to protect critical habitats, such as nursery grounds or spawning aggregations. To broadly enhance regional ecosystems, reserves need to be implemented densely enough to substantially contribute to species diversity and recruitment outside their borders.¹³³ Sufficient monitoring and enforcement are also essential to the effectiveness of these MPAs.¹³⁴

(d) Ecosystem approach to fisheries management

228. On the high seas, many regional fisheries management organizations and arrangements (RFMOs) have become aware of the importance of critical habitats to the long-term sustainability of the fishery resources under their management. A number of RFMOs have adopted an ecosystem approach to fisheries management, and have recognized that an important part of an ecosystem approach to fisheries management is to protect fish habitats from fishing activity that has the potential to make such habitats less suitable. To protect them, there may be need to impose area-time restrictions on fishing, or prohibitions of fishing activity from areas identified as essential fish habitats.

229. Newly established RFMOs such as the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, the South East Atlantic Fisheries Commission (SEAFO) and the South West Indian Ocean Commission have included in their respective conventions the principles of an ecosystem-based fisheries management (EBFM), including the obligation to ensure that fishery practices and management measures take due account of the need to minimize harmful impacts on living marine resources as a whole. These conventions call also for the application of the precautionary approach in fisheries management.¹³⁵ In addition, CCAMLR, which has been a pioneer in the implementation of EBFM, approved at its last annual meeting in 2002 four Management Plans for Antarctic Specially Protected Areas (ASPAs) with marine components, following the entry into force on 24 May 2002 of Annex V of the Protocol on the Environmental Protection under the Antarctic Treaty. Three of those sites had already been afforded protection as Sites of Special Scientific Interest (SSSIs) under the Treaty.¹³⁶

230. In order to protect high seas marine living resources, some NGOs have recently suggested that the General Assembly adopt a resolution imposing a global moratorium on fishing around high seas seamounts to prevent the further loss of biodiversity in deep sea areas pending the negotiation of a regime for the conservation of these fragile ecosystems. They consider such preventative action in conformity with concerns raised by marine scientists and the application of the precautionary approach to fisheries.¹³⁷ The suggestion is inspired by the global moratorium on all large-scale pelagic high seas drift-net fishing established by the General Assembly in its resolution 46/215 of 20 December 1991. In order to address this issue, FAO has already initiated work for developing sustainable fisheries on deep-sea resources. In this connection, FAO in cooperation with the Governments of Australia and New Zealand will hold an International Conference on the Governance and Management of Deep Sea Fisheries, in Queenstown, New Zealand, from 1 to 4 December 2003.

231. In addition, FAO indicates that, as a follow-up on the issues raised in the 2001 Declaration of the Reykjavik Conference on Responsible Fisheries in the Marine Ecosystem, it has initiated actions aimed at protecting vulnerable ecosystems, including: (i) the convening of an Expert Consultation on Ecosystem-based Fisheries Management in Reykjavik, Iceland, from 16-19 September 2002 at which preliminary guidelines were developed for an ecosystem approach to fisheries management (EAF) focusing on fisheries management; (ii) the sponsoring and participation of FAO Fisheries Department in a Working Group on "Ecosystem Indicators for Fisheries Management" of the Scientific Committee for Oceanic Research of UNESCO, the work results of which would be complementing work already done by FAO and might contribute to future updates of the FAO preliminary guidelines on EAF; (iii) the launching of a new project in October 2002, called "The Scientific basis for ecosystem-based management in the Lesser Antilles including interactions with marine mammals and other top predators", aimed at facilitating the implementation of EAF within the participating countries and subregion in order to ensure the maintenance of the integrity of the pelagic ecosystem, marine resources and fish production, through sustainable and responsible fisheries conduct¹³⁸

(e) Protection of Coral Reefs

232. In 1999, the International Coral Reef Initiative (ICRI) recognized the need for coordination in research and management efforts across all relevant institutions to carry out its urgent recommendations to save the world's reefs. It established the International Coral Reef Action Network (ICRAN) to halt and reverse the decline of the health of the world's coral reefs. ICRAN is an innovative and dynamic global partnership of many of the world's leading coral reef science and conservation organizations. It draws on partners' investments in reef monitoring and management to create strategically linked actions across local, national and global scales. ICRAN is the first partnership to respond to conservation needs

at the global scale by recognizing both traditional and scientific perspectives of coral reef dynamics and respective social dependency.

233. The guide “Good Practices for the Protection and Management of coral reefs”¹³⁹ recognizes that " Good practice " may take the form of practical activities on the ground, measures that promote social participation, instruments of an economic, legal or institutional nature, or innovative and effective techniques that contribute significantly to coral reef protection and management and to sustainable development in adjacent coastal areas. Examples of good practice provided in the Guide include: resource management (fisheries management, protection of fish stocks, community-based management); integrated coastal zone management; protected marine areas; tourism and protected marine areas (planning, development and tourist activities); controlling pollution and environmental degradation (erosion and sedimentation control in catchment basins, control of industrial and urban pollution, prevention of beach erosion and restoration of coral reefs); restocking and restoration of coral reefs (restocking of coral reef populations, restoration and rehabilitation of degraded coral reefs through coral transplants).

234. The Global Environment Facility (GEF) finances actions in the context of sustainable development, including in the context of degradation of international waters. Its international waters focal area assists recipient nations to address concerns of transboundary water-bodies. From 1991 to 2002, 32 GEF international waters projects were approved to address the protection of vulnerable marine ecosystems.

6. Initiatives at the Regional Level¹⁴⁰

235. Chapter 17 of Agenda 21 stated that small island developing states are a special case both for environment and development, and that SIDS are ecologically fragile and vulnerable. The Barbados programme of action states that many Small Island Developing States are entirely or predominantly coastal entities. It further states that due to the small size, isolation and fragility of island eco-systems, their renowned biological diversity is among the most threatened in the world. Their geographic isolation has resulted in their habitation by comparatively large number of unique species of flora and fauna. More recently, the Johannesburg Declaration from the WSSD reaffirmed its commitment to continue to pay special attention to the developmental needs of Small Island Developing States.

236. The General Assembly has also recognized the vulnerability of SIDS. Resolution A/C.2/57/L.66, on promoting an integrated management approach to the Caribbean sea area in the context of sustainable development, recognizes the Caribbean Sea as having a unique biodiversity and highly fragile ecosystem and calls upon the United Nations system and the international community to assist Caribbean countries and their regional organizations in their efforts to ensure the protection of the Caribbean Sea from degradation as a result of pollution from ships, in particular, through the illegal release of oil and other harmful substances; from illegal dumping or accidental release of hazardous waste, including radioactive materials, nuclear waste and dangerous chemicals, in violation of relevant international rules and standards; as well as pollution from land based activities. Furthermore, it call on States, taking into consideration the Convention on Biological Diversity, to develop national, regional and international programmes for halting the loss of marine biodiversity in the Caribbean Sea, in particular fragile ecosystems such as coral reefs.

237. The establishment of the Caribbean Regional Fisheries Mechanism is a recent example of a regional attempt to sustainably manage the region’s fisheries resources. Furthermore, the Protocol Concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (SPAW) ventures beyond

protection and management by providing for the restoration and improvement of the state of ecosystems. Other developments in the Caribbean Region include the International Coral Reef Initiative Regional Workshop for the Tropical Americas, which was held in Mexico in June 2002. Marine Protected Areas was one of the main themes addressed in the workshop.

7. Further measures

238. As this survey of existing instruments demonstrates, there already exists a broad range of rules, measures and management tools to protect vulnerable marine ecosystems. One gap is the lack of the regime for the protection of hydrothermal vents in the Area. However, a recent report by DOALOS and CBD addresses this issue. One might also envisage a new code of conduct for scientists to elaborate upon the general principles set out in article 240 of UNCLOS. Most important, however, is the implementation of existing rules and programmes. States wishing to protect vulnerable marine ecosystems should become parties to the relevant conventions and should apply them and the relevant action plans and programmes to vulnerable ecosystems within their jurisdiction and to their nationals and ships flying their flag in areas beyond the limits of national jurisdiction. Finally, they should ensure that these measures are effectively enforced under their national law.

VII. International Cooperation and Coordination

A. United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea

239. At its 57th session, the General Assembly considered whether the Consultative Process should be continued in accordance with paragraph 4 of General Assembly resolution 54/33 of 24 November 1999. After reviewing the work of the Consultative Process over the past three years and noting its contribution to strengthening its annual debate on oceans and the law of the sea, the General Assembly decided to continue the Consultative Process for an additional three years. Substantive secretariat support will continue to be provided by DOALOS and the Division for Sustainable Development of the Department of Economic and Social Affairs.

240. The Fourth Meeting of the Consultative Process will be held at United Nations Headquarters in New York from 2 to 6 June 2003 with discussions focused around the following areas: (a) protecting vulnerable marine ecosystems; and safety of navigation; for example, capacity-building for the production of nautical charts; as well as issues discussed at previous meetings. In February 2003, the President of the General Assembly appointed H.E. Mr. Felipe Paolillo (Uruguay) and Mr. Philip Burgess (Australia) as co-chairpersons of the Fourth Meeting.

B. General Mechanism for Inter-Agency Cooperation on Oceans and the Law of the Sea

241. In 2001, the Secretary-General decided to abolish the Sub-committee on Oceans and Coastal Areas (SOCA), which had been a mechanism for inter-agency cooperation on sustainable development for the oceans established after the UNCED. SOCA was replaced by a policy of using ad hoc inter-agency task forces to work on particular issues for limited periods of time. Concerned that inter-agency cooperation would decrease in the absence of a general forum for cooperation, in 2002, first at the Consultative Process and then at the General Assembly in Resolution 57/141, member States called for the creation of a new general mechanism for inter-agency cooperation and coordination that would be effective, regular and transparent. At the time of writing the High-Level Committee on Programmes (HLCP) is actively involved in consultations with all UN bodies concerning the possibility of establishing such a mechanism.

242. Since SOCA was abolished because it was not effective, recreating a similar entity would probably not be helpful. It would be preferable to use an existing structure within the United Nations, such as the

Chief Executive Board for Coordination (CEB) and the HLCP for the general oversight of interagency cooperation, without interfering in substantive operations. Any mechanism should be regular, effective, flexible and transparent.

C. Specific issues

1. The Prestige Task Force

243. In the wake of the *Prestige* disaster, the World Wide Fund for Nature (WWF), Greenpeace International, and the International Transport Workers Federation wrote to the Secretary-General, expressing concern about the environmental and social consequences of the oil spill and requesting that he form a “task force” of relevant international bodies to examine the root causes of the problem. In their view, these causes related to the failure of certain flag states, in particular open registries, to fulfil their obligations under UNCLOS. In addition, they called for the revision of the 1986 United Nations Convention on the Conditions for the Registration of Ships, in order to strengthen the requirement for a “genuine link” between flag states and the ships that they register. In response, DOALOS, on behalf of the Secretary-General, is engaged in consultations with other international bodies within and outside the UN system to ascertain their views on the establishment of such a task force.

2. Global Marine Assessment

244. The process of establishing a global marine assessment (GMA) was initiated by the UNEP Governing Council (GC) at its 21st session in February 2001, when UNEP GC Decision 21/13 was adopted concerning a “Global Assessment of the State of the Marine Environment”. In September 2001, UNEP convened an informal consultative meeting in Reykjavik at which participants agreed that a global assessment of the marine environment (GMA) was both desirable and urgently needed. It recommended that the GMA process should be aimed at policy-makers; be based on a scientific assessment of the global marine environment and assessment of socio-economic implications; and should provide policy-makers with guidance and assistance on actions required to mitigate environmental impacts and changes. It was strongly recommended that the assessment build upon existing assessments and suggested that a reformed GESAMP, provided with adequate funding, might be the best option for a coordination mechanism fulfilling four main criteria: cost effectiveness; credibility; sustainability; and ability to address policy issues.¹⁴¹

245. A technical workshop, to further elaborate the key objectives and define the practical framework for developing a GMA process was hosted by the German government in Bremen in March 2002. It confirmed that the main goals were to provide on a regular, timely and scientific basis the necessary assessments of the state and trends of all aspects of marine ecosystems. The coordination mechanism should ensure legitimacy, credibility, saliency, cost-effectiveness, efficiency and sustainability. The expected outputs of the GMA should be subject to a transparent peer review and reported in a ‘two-tier’ format, consisting of a scientific/technical report and a policy-oriented report based on the same information.¹⁴²

246. In April 2002, the Consultative Process reiterated these conclusions.¹⁴³ Next, the WSSD Plan of Implementation called for the establishment by 2004 of a regular process under the United Nations for global reporting and assessment of the state of the marine environment. Finally, in resolution A/57/141 the General Assembly endorsed the recommendation of the WSSD, requesting the Secretary-General to consult all interested parties, to prepare proposals on modalities for the global assessment, and to submit such proposals to the 58 session of the General Assembly for its consideration and decision.

Conclusions

247. It has become increasingly evident that the adoption of UNCLOS twenty years ago was just the beginning of the road towards the resolution of ocean-related issues. Indeed, since that time, problems have increased. This is despite the impressive array of legislation adopted in all fields under the auspices of the substantial number of organizations dealing with ocean-related matters. In 2002, developments in ocean-affairs since 1982 and 1992 were reassessed at the WSSD and the conclusion was that further action was urgently required. The main problems today are the over-exploitation of fisheries and destructive fishing practices; the degradation of the marine environment; and the increase in ship-related accidents and crimes.

248. In order to remedy this situation, it would appear necessary for all States:

- To ratify or accede to UNCLOS and its implementing agreements;
- To ratify or accede to the many other agreements giving substance and details to the basic principles of the Convention;
- To implement these agreements in their national laws and administrative structures; and
- To actively apply and enforce these laws and regulations.

249. At the root of far too many of these problems is the unwillingness or lack of capacity of certain States, especially flag States, to fulfil their international legal obligations. It is essential to reinforce the control of flag States over their vessels. Indeed, it might now be time to engage in defining the crucial term “genuine link” to ensure that States do not register any vessels unless they have a truly effective means of enforcing upon them all the relevant international rules and standards.

250. In addition to ineffective implementation and compliance, a second striking theme in the report is the call for enhanced cooperation among international organizations involved in law of the sea issues. As the international community grows increasingly interdependent, as developments in ocean affairs continue to expand in number and in complexity, and as problems proliferate, so cooperation and coordination among States, organizations and other actors will become more important. Hence, in order to strengthen inter-agency cooperation on an ever-expanding range of issues, a mechanism has been envisaged to enhance and facilitate inter-agency cooperation and coordination. The mechanism should:

- Discharge two main functions: first, the review of ongoing ocean-related work in each agency, fund and programme, in order to identify issues where cooperation is required and to eliminate duplication; second, to prepare coordinated responses to emerging challenges or urgent issues;
- Work within the United Nations established structures, ie, the Chief Executive Board for Coordination (CEB) and the High-Level Committee on Programmes (HLCP), which could exercise oversight without interfering with substantive cooperation;
- Be flexible and transparent.

251. The challenge for the future, therefore, is twofold: to ensure that states fully comply with their obligations under the law of the sea, and that inter-agency cooperation is facilitated and enhanced.

¹¹ The Division for Ocean Affairs and the Law of the Sea is preparing a special publication on the commemoration to be issued in

2003.

² A/RES/56/12, para. 48.

³ For details see A/57/57, paras. 497-511

⁴ For details see A/57/57, paras. 502-508.

⁵ A/57/80, para.26.

⁶ For details see A/57/57/Add.1, paras. 75-85.

⁷ The thirteenth Meeting of States Parties to UNCLOS will be held from 9 to 13 June 2003 at United Nations Headquarters. Information regarding the thirteenth Meeting will be included in the addendum to the present report.

⁸ Full texts of declarations upon ratification, accession or formal confirmation are available at the web site of the Division for Ocean Affairs and the Law of the Sea of the United Nations Office of Legal Affairs (www.un.org/Depts/los) as well as that of the Treaty Section of the United Nations (www.un.org/Depts/Treaty).

⁹ More detailed information regarding this session can be found in the addendum to the Report of the Secretary-General (A/57/57, Add.1, paras. 22-56), as well in the Statement of the Chairman of the Commission on the Limits of the Continental Shelf on the progress of work in the Commission, at the eleventh session (CLCS/34). Additional information regarding the work of the Commission can also be found in the recent annual reports of the Secretary-General (A/57/57, paras. 53-77; A/56/58; paras. 52-82 and Add. 1, paras. 19, 30-49; A/55/61, paras. 25-29; A/54/429, paras. 55-69; A/53/456, paras. 55-69; and A/52/487, paras. 43-53), as well as in the report of the twelfth Meeting of States Parties (SPLOS/91, paras. 95-101).

¹⁰ For information regarding the establishment and purposes of the Fund, as well as how developing States may apply for a grant therefrom, see A/57/57, Add.1, paras. 46-50.

¹¹ The papers presented at the seminar have been published by the Authority as a technical study.

¹² See Report of the Secretary-General of the International Seabed Authority under article 166, paragraph 4, of the United Nations Convention on the Law of the Sea, document ISBA/8/A/5 and Add.1.

¹³ Estimate varies depending on the interpretation of national constitutional provisions and/or relevant legislation.

¹⁴ The following agreements have been concluded in Africa: Agreement on the Delimitation of the Maritime Border between the Gabonese Republic and the Democratic Republic of São Tomé and Príncipe, 26 April 2001; Treaty between the Federal Republic of Nigeria and the Democratic Republic of São Tomé and Príncipe on the Joint Development of Petroleum and other Resources, in respect of Areas of the Exclusive Economic Zone of the Two States of 21 February 2001; Agreement between the Government of the United Republic of Tanzania and the Government of the Republic of Seychelles on the Delimitation of the Maritime Boundary of the Exclusive Economic Zone and the Continental Shelf of 23 January 2002. It has been reported that Nigeria and Equatorial Guinea signed on 3 April 2002 a treaty on joint exploration of crude oil, especially at the Zafiro-Ekanga Oil Field located at the maritime boundary of both countries. On 4 June 2002 Angola and Namibia signed an accord on the delimitation of the maritime border between the two countries. In Asia and South Pacific, the following agreements have been concluded: Muscat Agreement on the Delimitation of the Maritime Boundary between the Sultanate of Oman and the Islamic Republic of Pakistan of 12 June 2000; and International Boundary Treaty between the Republic of Yemen and the Kingdom of Saudi Arabia of 12 June 2000.

¹⁵ Message from the Secretary-General of IMO on World Maritime Day 2002.

¹⁶ MEPC 48/21, paras. 12.2.1-12.2.2.

¹⁷ Ibid., annex 3.

¹⁸ On 1 January 2002, the world fleet amounted to 825.7 million dwt; a 2.1 per cent increase over 2001. New-building deliveries represented 45.2 mdwt, while scrapped or lost vessels tonnage reached 27.9 mdwt; representing a net increase of 17.3 mdwt. Tankers' average age shrank from 13.9 years to 13.2 years but the proportion of tankers of more than 15 years of age is still high at 42.7 per cent.

¹⁹ ICS Annual Review 2001/2002.

²⁰ The amendments to chapters II and XII of SOLAS were adopted by resolution MSC.133(76). For the text see report of the MSC on its 76th session, MSC 76/23, annex 2.

²¹ For a list of confirmed Parties, see IMO Circular MSC/Circ.1066.

²² The Baltic and International Maritime Council/International Shipping Federation manpower update: *The world demand for and supply of seafarers*, Institute for Employment Research (University of Warwick, 2000).

²³ See IMO document LEG 85/10 and the report of the IMO Legal Committee on its 85th session, document LEG 85/11, paras. 144-156.

²⁴ Seafarers, shipowners and Government representatives participated in the meeting.

²⁵ Final report of the Meeting of Experts on Working and Living Conditions of Seafarers on board Ships in International Registers. ILO document MEWLC/2002/8 available on the website of ILO at www.ilo.org/public/english/dialogue/sector/sectors/mariti/shipping-iloact.htm.

²⁶ See Focus on IMO - IMO and Dangerous Goods at Sea (1996).

²⁷ : The International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code),²⁷ the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code), the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), the Code

for Safe Practice for Solid Bulk Cargoes (BC Code), and the Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-level Radioactive Waste in Flasks on Board Ships (INF Code). SOLAS Chapter VII now provides for the mandatory application of all Codes, except the BCH Code. The latter is mandatory under MARPOL 73/78, together with the IBC Code.

- ²⁸ For the text of the resolutions see the report of the 75th session of the MSC, MSC 75/24/Add.1 (annexes 2 and 12). The text of the revised IMDG Code is contained in documents DSC 5/13/Add.1
- ²⁹ See IMO document LC/SG 25/11, annex 4.
- ³⁰ See “Nadi Declaration” adopted at the 3rd Summit of ACP Heads of State and Government, Nadi, Fiji Islands, 18 and 19 July 2002 in document ACP/28/029/02 [Final], available at www.acp.fiji.gov.fj/Nadi_Declaration.pdf.
- ³¹ Thirty-third Pacific Islands Forum Communique, UN document A/57/331, annex.
- ³² RNE Radio 1, Madrid, 28 November 2002.
- ³³ Report on the 76th session of the MSC, document MSC 76/23, para. 1.27.
- ³⁴ See generally *ibid.*, paras. 1.13-1.28.
- ³⁵ See also Press Package, dated 8 January 2003, issued by the European Commission Directorate General for Energy and Transport.
- ³⁶ Document MSC 76/23, para. 11.41.
- ³⁷ For details and a complete listing of adopted TSSs, see reports of the 75th and 76th sessions of the MSC, documents MSC 75/24, annex 6 and MSC 76/23, annex 10.
- ³⁸ Directive 2002/59/EC of 27 June 2002.
- ³⁹ Declaration on the Safety of Navigation and Emergency Capacity in the Baltic Sea Area, adopted on 10 September 2001.
- ⁴⁰ See IMO document MSC 77/23/5.
- ⁴¹ Publications M-1 “Basic Documents of the IHO”, M-2 “National Maritime Policies and Hydrographic Services”, P-7 “Annual Report for 2001 – Part 1”, S-47 “Training Courses in Hydrography and Nautical Cartography”, S-57 “IHO Transfer Standard for Digital Hydrographic Data”, M-5 “Standards for Hydrographic Surveyors” and M-8 “Standards for Nautical Cartographers.”
- ⁴² Greece has the largest fleet, owning 19.6% of tonnage followed by Japan, Norway, the United States of America and China. Major open-registry countries – such as Panama, Liberia, the Bahamas, Malta and Cyprus - increased the tonnage of vessels flying their flag by 2.6 per cent to a 48.7 per cent world share.
- ⁴³ ICS Annual Review 2001/2002.
- ⁴⁴ See submission to the IMO Legal Committee by the International Confederation of Free Trade Unions (ICFTU), document LEG 84/13/5.
- ⁴⁵ Joint Declaration emanating from the Franco-Spanish summit, Malaga, 26 November 2002.
- ⁴⁶ The European Union Council of Transport expressed their support for a compulsory audit at their meeting in December 2002.
- ⁴⁷ For further information on the ICAO oversight programme, see document C 89/13/Add.1.
- ⁴⁸ Submission by Canada, Denmark, Finland, the Netherlands, New Zealand, Portugal and Spain. IMO document FSI 10/12/1.
- ⁴⁹ Report of the Sub-Committee on Flag State Implementation at its 10th session, April 2002. Document FSI 10/17, paras. 12.4-12.8.
- ⁵⁰ Joint Declaration. Franco-Spanish Summit, Malaga 26 November 2002. See also Statement by Spain to the General Assembly at its 58th session during its consideration of agenda item “Oceans and the law of the sea”.
- ⁵¹ European Commission Press Release IP/02/1791, 3 December 2002.
- ⁵² Report-Record of decisions on the United Nations Inter-Agency Meeting on the Treatment of Persons Rescued at Sea, Geneva, 2 and 3 July 2002, IMO document MSC 76/22/8.
- ⁵³ For the summary of discussions from the Expert Roundtable, see IMO document MSC 76/22/8, annex.
- ⁵⁴ For the text of the draft amendments, see document FAL 30/9/Add.2.
- ⁵⁵ General Assembly resolution A/57/..... “Responding to global threats and challenges” (A/57/L.6/Rev.1 and Add.1).
- ⁵⁶ For example, see Joint Declaration of the 6th ASEAN-China Summit, Cambodia, 4 November 2002, on website of ASEAN.
- ⁵⁷ General Assembly resolution A/57/.... on “Measures to eliminate international terrorism” (A/C.6/57/L.22).
- ⁵⁸ General Assembly resolution A/57/ on “Protecting human rights and fundamental freedoms while countering terrorism” (A/C.3/57/L.61).
- ⁵⁹ *The New York Times*, 19 October 2002.
- ⁶⁰ *The New York Times*, 26 January 2003.
- ⁶¹ IMO documents SOLAS/CONF.5/ 32 and SOLAS/CONF.5/34.
- ⁶² Report of the MSC on its 76th session, document MSC 76/23, para. 16.6.
- ⁶³ Extracted from a report by a Spanish newspaper on ABC website, Madrid, 4 January 2003.
- ⁶⁴ *BBC News*, 28 January 2003.
- ⁶⁵ *BBC News*, 13 January 2003.
- ⁶⁶ *BBC News*, 28 January 2003.
- ⁶⁷ Report of the World Summit on Sustainable Development, A/CONF.199/20*, para. 30.

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- ⁶⁸ Document A/57/253.
- ⁶⁹ Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August-4 September 2002, Annex, Plan of Implementation of the World Summit on Sustainable Development, A/CONF.199/20, paras. 31 (b), (c), (d) and paras. 32 (b).
- ⁷⁰ General Assembly resolution A/RES/57/143, para.15.
- ⁷¹ Contribution of FAO to the Report of the Secretary-General to the fourth meeting of ICP and the fifty-eighth session of the General Assembly, January 2003.
- ⁷² Report of the World Summit on Sustainable Development, Annex: Plan of Implementation of the World Summit on Sustainable Development (A/CONF.199/20), para.31(d) and (f).
- ⁷³ A/RES/57/141, para.54.
- ⁷⁴ A/RES/57/142, paras. 16 - 17.
- ⁷⁵ Such instruments include the 1992 UNCED Declaration and Agenda 21; the 1993 FAO Compliance Agreement; the 1995 UN Fish Stocks Agreement; the 1995 Code of Conduct for Responsible Fisheries and related IPOAs; the 1995 Rome Consensus on World Fisheries; the 1995 Kyoto Declaration and Plan of Action on the Sustainable Contribution of Fisheries to Food Security; and the 2001 Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem.
- ⁷⁶ Report of the Twenty-second Session of COFI, Rome, 17-20 March 1997, FAO Fisheries Report No.562 (FIPL/R562 (En)), paras.31and 32.
- ⁷⁷ Report of the Meeting of FAO and non-FAO Regional Fishery Bodies or Arrangements, Rome, Italy, 11-12 February 1999, FAO Fisheries Report No.597 (FIPL/R597).
- ⁷⁸ Report of the Meeting of FAO and non-FAO Regional Fishery Bodies or Arrangements, Rome, Italy, 20-21 February 2001, FAO Fisheries Report No.645 (FIPL/R645).
- ⁷⁹ The following intergovernmental organizations attended: APEC, ASEAN, CARICOM, FAO, OECD, SADC, WTO and UNEP.
- ⁸⁰ Report of the Second *Ad hoc* Meeting of Intergovernmental Organizations on Work Programmes Related to Subsidies in Fisheries (Rome, 4-5 July 2002).
- ⁸¹ The State of World Fisheries and Aquaculture (SOFIA 2002; Part Three). In press.
- ⁸² The Report of the Expert Consultation will be made available soon to member States.
- ⁸³ FAO. Report of the Norway-FAO Expert Consultation on the Management of Shared Fish Stocks. Bergen, Norway, 7-10 October 2002. FAO Fisheries Report. No. 695. Rome, FAO. 2002. 34p. The report will be published in the five FAO official languages.
- ⁸⁴ Source: UN Atlas of the Oceans
- ⁸⁵ Guide to the Convention on the Conservation of Migratory Species and Wild Animals, January 2002, <http://www.unep-wcmc.org/cms/>
- ⁸⁶ See text prepared during the 48th session of the MEPC (7-11 October 2002) in IMO document MEPC 48/21, annex 2.
- ⁸⁷ IMO/UNEP joint forum on regional arrangements for cooperation in combating marine pollution incidents, 2002.
- ⁸⁸ LC/SG 25/11, annex 4.
- ⁸⁹ Document LC/SG 25/11, annex 4.
- ⁹⁰ Report of the Conference of the Parties to the Basel Convention. Document UNEP/CHW.6/..., annex.
- ⁹¹ The text of the Guidelines is annexed to document UNEP/CHW.6/23.
- ⁹² The submissions by IMO and DOALOS are annexed to document UNEP/CHW/LWG/5/4.
- ⁹³ IMO, 15 January 2002, A22/Res.927
- ⁹⁴ GESAMP, 2001, A Sea of Troubles, GESAMP Reports and Studies No. 70
- ⁹⁵ K. Kathiresan and B.L. Bingham, "Biology of Mangroves and Mangrove Ecosystems", *Advances in Marine Biology*, Vol. 40 (2001), p.5.
- ⁹⁶ *Ibid.*, p.54.
- ⁹⁷ *Ibid.*, pp.36-37.
- ⁹⁸ R.V. Salm, J. R. Clark and E. Siirila, "Marine and Coastal Protected Areas: A Guide for Planners and Managers", *International Union for the Conservation of Nature and Natural Resources* (IUCN), 2000, pp.161-164.
- ⁹⁹ M. Gianni, "Protecting the Biodiversity of seamount Ecosystems in the Deep Sea – The Case for a Global Agreement for Marine Reserves on the High Seas", *A discussion paper for the IUCN/WWF High Sea Marine Protected Areas Workshop*, 15-17 January 2003, Malaga, Spain, p.2.
- ¹⁰⁰ UNLOS, article 234
- ¹⁰¹ GESAMP, op. cit.
- ¹⁰² GESAMP, "A Sea of Troubles". Reports and Studies No. 70.
- ¹⁰³ FAO, "Marine Fisheries and the Law of the Sea: A Decade of Change", *Special chapter (revised) of The State of Food and Agriculture 1992, FAO Fisheries Circular No. 853 (FIDI/C853)*, FAO Fisheries Department, FAO, Rome, 1993, p.30.
- ¹⁰⁴ *Ibid.*
- ¹⁰⁵ K. Kathiresan and B.L. Bingham, "Biology of Mangroves and Mangrove Ecosystems", pp. 58-74.
- ¹⁰⁶ R.V. Salm, J. R. Clark and E. Siirila, "Marine and Coastal Protected Areas: A Guide for Planners and Managers", op. cit., pp.166-193.

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- ¹⁰⁷ Ibid.
- ¹⁰⁸ FAO, op. cit.
- ¹⁰⁹ Ibid.
- ¹¹⁰ M. Gianni, "Protecting the Biodiversity of seamount Ecosystems in the Deep Sea – The Case for a Global Agreement for Marine Reserves on the High Seas", op. cit., p.2.
- ¹¹¹ IMO Resolution A.927 (22), Annex 2, paras. 2.1 and 2.2.
- ¹¹² The status of natural resources on the high seas. WWF/IUCN (2001), Gland, Switzerland.
- ¹¹³ Putting Marine Scientific Research on a Sustainable Footing at Hydrothermal vents, Lyle Glowka – Marine Policy
- ¹¹⁴ See Report from an INTERRIDGE Workshop, Institute of Ocean Sciences, Sydney (Victoria), B.C., Canada from 28-30 September 2000
- ¹¹⁵ The New Zealand Herald dated 31/12/2002
- ¹¹⁶ Earth Island Journal, 1999, Mathews-Amos A & Bernston EA.
- ¹¹⁷ The New Zealand Herald.
- ¹¹⁸ The United Nations Conference on Environment and Development, Agenda 21, paras. 17.6 (h) and 17.7.
- ¹¹⁹ Report of the World Summit on Sustainable Development, Annex: Plan of Implementation of the World Summit on Sustainable Development (A/CONF.199/20), para.32 (a).
- ¹²⁰ *The Protocol Concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region, 1985* requires its Parties to take all appropriate measures to, inter alia, protect and preserve rare or fragile ecosystems as well as rare, depleted, threatened or endangered species and their habitats and to establish protected areas in areas under their jurisdiction where necessary along with taking all appropriate measures to protect such areas.
- The Protocol for the Conservation and Management of Protected Marine and Coastal Areas of the Southeast Pacific, 1989* authorises the establishment of parks, reserves and sanctuaries to protect and preserve fragile or unique cultural and natural resources and ecosystems with a particular emphasis on flora and fauna threatened by depletion or extinction. It prohibits any activity liable to have adverse effects on the ecosystem, flora, fauna or habitat.
- The Protocol Concerning Specially Protected Areas and Wildlife in the Wider Caribbean Region, 1990* provides for the establishment of Protected Areas in order to conserve, maintain and restore, inter alia, habitats and associated ecosystems critical to the survival and recovery of endangered, threatened or endemic species of flora and fauna.
- The Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean 1995*, is applicable to all marine waters of the Mediterranean, irrespective of their legal status, as well as to the seabed and its subsoil, as well as such terrestrial coastal areas as are designated by each party, including wetlands. It provides for the establishment of "Specially Protected Areas" and "Specially Protected Areas of Mediterranean Importance" (SPAMIs) in the marine and coastal zones in order to promote cooperation in the management and conservation of natural areas, as well as in the protection of threatened species and their habitats.
- ¹²¹ Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, <http://www.gpa.unep.org>
- ¹²² Report of the First Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, Montreal, Canada, 26-30 November 2001, Montreal Declaration on the Protection of the Marine Environment from Land-based Activities, UNEP/GPA/IGR.1/9, Annex I, para. 9 (a) and (c).
- ¹²³ "The State of the World Fisheries and Aquaculture, 2000," *FAO Fisheries Department*, FAO, Rome, 2000, pp. 13-15.
- ¹²⁴ Ibid.
- ¹²⁵ FAO Fisheries Department - Glossary, <http://www.fao.org/fi/glossary>.
- ¹²⁶ Kelleher, G., "Guidelines for Marine Protected Areas", IUCN, Gland, Switzerland and Cambridge, UK (1999), page xi-xii.
- ¹²⁷ L.A. Kimball, "International Ocean Governance – Using International Law and Organizations to Manage Marine Resources Sustainably", IUCN, Gland, Switzerland and Cambridge, UK, 2001.
- ¹²⁸ UNEP/CBD/SBSTTA/8/9/Add.1.
- ¹²⁹ R.V. Salm, J. R. Clark and E. Siirila, "Marine and Coastal Protected Areas: A Guide for Planners and Managers", op. cit., pp. 23-24, and 29.
- ¹³⁰ Ibid.
- ¹³¹ Ibid., Abstract.
- ¹³² Stephen R. Palumbi, "Marine Reserves, A Tool for Ecosystem Management and Conservation", Prepared for the Pew Oceans Commission, Stanford University, Stanford, California, 2002, p. 2.
- ¹³³ Ibid., p.34.
- ¹³⁴ Ibid., p.35.
- ¹³⁵ Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific, Article 5 (c) to (f); Convention on the Conservation and Management of Fishery Resources in the South East Atlantic Ocean, Article 3 (b) to (f); Agreement for the Establishment of a South West Indian Ocean Commission, Article 6(1) (2) and (4).
- ¹³⁶ XXI st Meeting of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), Hobart Tasmania,

Australia, 21 October - 1 November 2002.

¹³⁷ M. Gianni, “Protecting the Biodiversity of seamount Ecosystems in the Deep Sea – The Case for a Global Agreement for Marine Reserves on the High Seas”, op. cit., p.1-7

¹³⁸ Contribution of FAO to the Report of the Secretary-General, op.cit.

¹³⁹ “Good Practices for the Protection and Management of coral reefs” was produced for the ICRI by the CEDRE with the support of French Ministry of Spatial Planning and the Environment.

¹⁴⁰ As space does not permit a full exposition of regional initiatives, only one example of small island developing states in the Caribbean is given. Other examples may be found in document A/57/57.

¹⁴¹ Proceedings of the first feasibility study for establishing a regular process for the assessment of the state of the marine environment, Reykjavik, Iceland, 12-14 September 2001

¹⁴² Proceedings of the technical workshop for establishing a regular process for the global assessment of the marine environment, Bremen (Germany), 18-20 March 2002

¹⁴³ See third meeting of the Consultative process, “Summary of discussions, Panels A and B” available in English at http://www.un.org/Depts/los/consultative_process/consultative_process.htm .