REGIONAL SEAS

UNITED NATIONS ENVIRONMENT PROGRAMME

Legal aspects of protecting and managing the marine and coastal environment of the East African region

UNEP Regional Seas Reports and Studies No. 38

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PREFACE

The Regional Seas Programme was inititated by UNEP in 1974. Since then the Governing Council of UNEP has repeatedly endorsed a regional approach to the control of marine pollution and the management of marine and coastal resources and has requested the development of regional action plans.

The Regional Seas Programme at present includes eleven regions 1/ and has over 120 coastal States participating in it. It is conceived as an action-oriented programme having concern not only for the consequences but also for the causes of environmental degradation and encompassing a comprehensive approach to controlling environmental problems through the management of marine and coastal areas. Each regional action plan is formulated according to the needs of the region as perceived by the Governments concerned. It is designed to link assessment of the quality of the marine environment and the causes of its deterioration with activities for the management and development of the marine and coastal environment. The action plans promote the parallel development of regional legal agreements and of action-oriented programme activities. 2/

Decision 8/13(C) of the eighth session of the Governing Council of UNEP called for the development of an action plan for the protection and management of the marine and coastal environment of the East African region. As a first activity in the region, UNEP organized in October and November 1981 a joint UNEP/UN/UNIDO/FAO/UNESCO/WHO/IMCO/IUCN exploratory mission which visited the region.

The findings of the mission were used to prepare the following six sectoral reports:

- UN/UNESCO/UNEP: Marine and Coastal Area Development in the East African Region. UNEP Regional Seas Reports and Studies No. 6. UNEP 1982;

- UNIDO/UNEP: Industrial Sources of Marine and Coastal Pollution in the East African Region. UNEP Regional Seas Reports and Studies No. 7. UNEP 1982;

- FAO/UNEP: Marine Pollution in the East African Region. UNEP Regional Seas Reports and Studies No. 8. UNEP 1982;

- WHO/UNEP: Public Health Problems in the Coastal Zone of the East African Region. UNEP Regional Seas Reports and Studies No. 9. UNEP 1982;

1/ Mediterranean Region, Kuwait Action Plan Region, West and Central African Region, Wider Caribbean Region, East Asian Seas Region, South-East Pacific Region, South Pacific Region, Red Sea and Gulf of Aden Region, East African Region, South-West Atlantic Region and South Asian Seas Region.

2/ UNEP: Achievements and planned development of UNEP's Regional Seas Programme and comparable programmes sponsored by other bodies. UNEP Regional Seas Reports and Studies No. 1. UNEP 1982.

- IMO/UNEP: Oil Pollution Control in the East African Region. UNEP Regional Seas Reports and Studies No. 10. UNEP 1982; and

- IUCN/UNEP: Conservation of Coastal and Marine Ecosystems and Living Resources of the East African Region. UNEP Regional Seas Reports and Studies No. 11. UNEP 1982.

The six sectoral reports prepared on the basis of the mission's findings were used by the UNEP secretariat in preparing a summary overview entitled:

- UNEP: Environmental Problems of the East African Region. UNEP Regional Seas Reports and Studies No. 12. UNEP 1982.

The overview and the six sectoral reports were submitted to the UNEP Workshop on the Protection and Development of the Marine and Coastal Environment of the East African Region (Mahé, Seychelles, 27-30 September 1982) attended by experts designated by the Governments of the East African region.

The Workshop:

- reviewed the environmental problems of the region;

- endorsed a draft action plan for the protection and development of the marine and coastal environment of the East African region;

- defined a priority programme of activities to be developed within the framework of the draft action plan; and

- recommended that the draft action plan, together with a draft regional convention for the protection and development of the marine and coastal environment of the East African region and protocols concerning (a) co-operation in combating pollution in cases of emergency, and (b) specially protected areas and endangered species, be submitted to a conference of plenipotentiaries of the Governments of the region with a view to their adoption.

In consultation with the Governments of the East African region the further development of the action plan was focused on activities directly related to preparations for the conference of plenipotentiaries and to other regional activities which received a first priority rating in the programme recommended by the Mahé workshop.3/ This included the preparation of a series of country reports by experts from the region on:

- national legislation;

- national resources and conservation; and

- socio-economic activities that may have an impact on the marine and coastal environment.

3/ Report of the Workshop on the protection and development of the marine and coastal environment of the East African region, Mahé, 27-30 September 1982, (UNEP/WG/77/4).

The national reports were synthesized in regional reports 4/ 5/ 6/ which were prepared with a view to assisting the Governments of the East African region in their negotiations on the regional convention and its protocols. In addition, a technical training Workshop on the control of pollution from ships in the East African region will be convened jointly by the International Maritime Organization (IMO) and UNEP in November 1983.

The present document is the regional report on legal aspects of protecting and managing the marine and coastal environment of the East African region. It was prepared by D. Alheritiere, Legal Officer, and Ch. O. Okidi, consultant, FAO Legal Office, and their assistance is gratefully acknowledged. The report is based on eight national reports written by the following experts under project FP/0503-82-04: C. L. d'Arifat (Mauritius), B. Georges (Seychelles), M. Jardin (France), J. L. Kateka (Tanzania), F. Muslim (Kenya), Ph. Randrianarijaona and E. Razafimbelo (Madagascar), A. Salim (Comoros), and M. I. Singh (Somalia). No expert was designated by Mozambique, and references to this country are based on information collected by the authors.

4/ FAO/UNEP: Legal aspects of protecting and managing the marine and coastal environment of the East African region. UNEP Regional Seas Reports and Studies No. 38. UNEP, 1983.

5/ IUCN/UNEP: Marine and coastal conservation in the East African region. UNEP Regional Seas Reports and Studies No. 39. UNEP, 1983.

6/ UNEP: Socio-economic activities that may have an impact on the marine and coastal environment of the East African region. UNEP Regional Seas Reports and Studies No. 41. UNEP, 1983.

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INTRODUCTION

1. For the purposes of the action plan for the protection and management of the marine and coastal environment of the East African region, the region has been provisionally defined 1/ as including the waters of the Indian Ocean within the jurisdiction of Comoros, France, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia and Tanzania. The region also includes coastal areas, the specific geographic limits of which will be determined by the Governments concerned on an ad hoc basis, taking into account the particular activity to be carried out.

2. Among the general objectives and activities of the action plan are the promotion of appropriate legislation for the protection and management of the marine and coastal environment on a national and regional basis, and the adoption of a regional Convention and related protocols to the same effect.

3. The main objective of this report is to provide background information for a meeting of experts to be convened by UNEP in December 1983 to begin negotiations, at the expert level, on the text of a regional convention for the protection and management of the marine and coastal environment of the East African region, a protocol concerning protected areas and wild fauna and flora in the East African region and a protocol on co-operation in combating marine pollution incidents in the East African region.

4. This report is divided into three parts. The first part analyses international legal aspects, both as regards existing treaty law and draft texts currently in preparation 2/; the second part describes applicable national legislation in the States of the region, and the third part sets forth evaluations and conclusions based on the information presented in the report.

1/ Report of the Workshop on the Protection and Development of the Marine and Coastal Environment of the East African Region, Mahé, 27-30 September 1982 (UNEP/WG.77/4, Annex III, paragraph 3) and subsequent negotiations with the Government of France.

2/ This part is an updated, amended version of Part I of a report by the FAO Legal Office based on the work of A. Piquemal and M. Savini, prepared in 1979 (FAO/UNEP Joint Project No. FP/0503-77-02).

PART I: INTERNATIONAL LEGAL ASPECTS

GLOBAL LEVEL

Current treaty law

5. A number of conventions, applicable on a global level, have been adopted to control the various forms of marine pollution. Only some of the States of the East African Region are parties to these conventions, (see the table in the annex, indicating membership and source references), although two or three have made known their intention of acceding to them in the near future.

6. The conventions concerning pollution from shipping will first be examined, followed by those relating to pollution from land-based sources, from operations on the seabed and the continental shelf, from waste dumping, and from military activities.

Pollution from shipping

7. International law has been concerned with this source of marine pollution since 1954, when the International Convention for the Prevention of Pollution of the Sea by Oil was adopted in London (OILPOL). This convention, which was amended on several occasions, aims principally at preventing intentional pollution from normal shipping operations. It has been replaced on 2 October 1983 by the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL), for those Parties to this more recent convention. The frequency of accidental pollution has also led to the drawing up of a series of conventions intended to cope with pollution from accidents. Both these cases will be examined here, together with related agreements on liability and compensation for pollution damage.

Prevention of pollution from normal shipping activities

8. The control of this type of pollution mainly comes under the 1954 OILPOL Convention cited above. The text was subsequently amended in 1962, 1969 and 1971. The 1962 amendments came into force in May 1967, and those of 1969 in January 1978. The 1971 amendments have not yet come into force.

9. With regard to the East African region, it should be noted that as of 1 July 1983, France, Kenya and Madagascar had all become parties to the 1954 convention as amended in 1962 and 1969. France has ratified the 1971 amendments on the Great Barrier Reef.

10. The 1954 International Convention for the Prevention of Pollution of the Sea by Oil delineates certain areas where the discharge by tankers of oil or oily mixture is prohibited. Under the terms of the Convention, the term "oily mixtures" means all mixtures in which the proportion of oil is equal or superior to 100 ppm (one hundred parts of oil to one million parts of mixture). The term "oil" embraces crude oil, fuel oil, heavy diesel oil and lubricating oils. The prohibited zones include all sea areas within fifty miles of the nearest land and also a number of special areas where this distance is extended to one hundred or even one hundred and fifty miles. One of these special areas is in the waters of the East African region. It is the Malagasy zone, as delineated in Annex A to the 1962 amendments.

11. Exceptions to these prohibitions are anticipated for security reasons or to avoid damage to ships. Sanctions for the discharge of oil resulting from damage or unavoidable leakage cannot be applied if all reasonable precautions have first been taken. Lastly, the discharge of certain residues of lubricating oil or oily matter from bilges will be tolerated when carried out as far from land as practicable.

12. In principle, the Convention applies to all sea-going vessels registered by a contracting State. However, exceptions are made for small vessels (tankers of less than 150 tons and other ships under 500 tons) and also for naval ships and ships for the time being used as naval auxiliaries.

13. These prohibitions are completed by a certain number of concrete preventive measures. Ships to which the convention applies must be equipped with machinery to avoid, where reasonably possible, the escape of fuel oil or heavy diesel oil into the bilges, while governments must take suitable measures to create adequate facilities for the reception of oily wastes and mixtures in their principal ports. In addition, all tankers and all other ships using oil as fuel must keep an oil record book detailing each occasion on which oil or oily mixtures are loaded, unloaded or discharged, as well as operations such as cleaning up, ballasting, the discharge of water from ballast and fuel tanks, and accidental or emergency discharges. This record may be examined by any of the competent autorities of a contracting government when a ship to which the convention applies is in a port within its territory.

14. Sanctions for violations are determined by legislation in the flag State of the ship involved, it being clearly understood that penalties imposed by a State for prohibited discharges on the high seas shall not be less severe than those which would be exacted for the same violations in its own territorial waters. Contracting States must collaborate in tracking down violations. A government which learns of a discharge in a prohibited area must inform the competent authorities of the flag State of the ship responsible, and these authorities, if they consider that there is sufficient evidence, must start proceedings against the ship or the master of the vessel. Disputes regarding the interpretation or application of the Convention must be referred to the International Court of Justice on request of either of the parties, unless the litigants agree to submit to arbitration.

15. This system was radically changed by the 1969 amendments to the 1954 Convention. The concept of prohibited zones was abandoned in favour of protective measures to be applied to all sea areas. Specifications regarding permitted discharges were completely revised and are now based on the volume of oil discharged in relation to the average distance travelled. For tankers, oil discharges are prohibited except under the following conditions:

- the tanker must be en route,

- the discharge must not exceed sixty litres of oil per mile travelled,

- the tanker must be over fifty miles away from the nearest land,

- the total weight of oil discharged on a ballast voyage (that is, when the ship is ballasted with water) must not exceed 1/15,000 of the total oil cargo carrying capacity.

16. The first three conditions also apply to all other ships. In addition, for ships other than tankers it is also stipulated that oily mixtures discharged may not contain more than one hundred parts of oil to one million parts of mixture.

17. The new specifications authorize the discharge of ballast water when it does not leave visible traces on a calm sea. Provisions regarding punishment for violations have not been fundamentally altered.

18. The 1971 amendments are of an essentially technical nature and directed to setting security standards in the construction of new tankers in order to minimize the risk of oil outflow should a tank be breached in an accident.

19. The International Convention for the Prevention of Pollution by Ships (MARPOL) adopted in London in November 1973 incorporates the provisions of the 1954 Convention in a strengthened form within the framework of a broader convention covering all forms of operational or accidental pollution from shipping. This Convention came into force as amended in 1978, on 2 October 1983, except its annexes II to V. As of 1 July 1983 only France and Kenya had ratified it.

20. The main body of the Convention contains only general provisions regarding its field of application, controls and the enforcement of detailed standards and regulations. The latter are set out in five annexes covering various substances, the discharge of which is to be controlled. Annexes I and II are considered "obligatory" as integral parts of the Convention. The other three are described as optional. However, the 1978 amendments have delayed the application of Annexes II to V.

21. The provisions of MARPOL apply to all tankers of 150 GT or over and to all other ships of 400 GT or over, except warships. Fixed or floating oil rigs also come under these provisions.

22. In order to eliminate the risk of pollution overtly incurred through operational discharges, it is anticipated that new tankers whose weight when fully loaded reaches or exceeds 70,000 GRT should be equipped with segregated ballast tanks as distinct from cargo tanks. As on all existing tankers, they also have to be equipped with machinery to keep a constant check on and control oil discharges. This method of recording all discharges enables the exact time (and therefore the place) of a discharge to be known, as well as the quantity of matter discharged and the proportion of oil it contains. When the total quantity of the mixture and the percentage of oil in it exceed the authorized levels, the control mechanism automatically stops the discharge. In addition, except in certain specified cases, all ships covered by the Convention have to be fitted with suitable machinery to provide for the separation of mixtures, or a filtering system, slop tanks, decanting tanks and standard piping and pumping arrangements.

23. The conditions applying to discharges are more or less the same as those prescribed in the 1969 amendments to the 1954 Convention. It is to be noted that the system of special areas where all discharges are absolutely prohibited has been reintroduced, but none of them is entirely located in the East African Region. In all cases oil residues left after decantation must be kept on board. Contracting States are required to set up facilities for the reception of this waste in their principal ports.

24. As under the 1954 Convention, all ships will have to keep an oil record book. Each vessel must also be provided with an International Oil Prevention Certificate, which will be issued by the administration of its flag State after a detailed inspection to check that the structure, equipment, installations, arrangements and materials of the ship in question are in conformity with the provisions of the Convention. This inspection must be repeated at least once every five years. The competent authorities assume total responsibility for the certificate, and are fully answerable for the thoroughness and efficiency of such inspections.

25. Annex II to the 1973 Convention regulates the transport of noxious liquid substances carried in bulk and applies to all tankers except warships and auxiliaries. Noxious liquids are divided into four categories designated by the letters A, B, C, and D, in diminishing order of the hazard they present to marine resources, to human health and to other legitimate uses of the sea. Tankers intended for the transport of these substances are subject to the same type of inspections as those laid down for the oil tankers. Each must receive an International Pollution Prevention Certificate stating that the ship satisfies the requirements specified in the "Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk" adopted by the Assembly of IMO.

26. Except in case of necessity or force majeure, the discharge of substances listed in any one of the four categories A - D is in principle prohibited. However, this prohibition is not absolute, and discharges are admissible provided that certain conditions are respected; the object of these conditions is to ensure that the over-all quantity of the discharges remains low and, above all, that the harmful character of the substances is virtually eliminated by sufficient dilution. The ship must always be in motion: it must release the discharge below the water-line; it must be at least twelve miles from the nearest land and in water at least twenty-five metres deep. The permitted volume and concentration of the noxious substances vary according to the category of the product. These conditions are stricter in the zones designated as special areas. There is no Special Area strictly located in the waters of the East African region.

27. Each ship must have a cargo record book in which all operations must be reported regarding the loading, transfer and unloading of cargoes of noxious substances, as well as the operational or accidental discharge of such matter. The competent authorities of each contracting State may examine the record book of any ship in their ports. This procedure is intended to facilitate the application of the prohibitions mentioned above. Article II of the 1978 MARPOL Protocol stipulates that the Parties to the Protocol shall not be bound by the provisions of Annex II of the Convention for a period of three years from the date of entry into force of the present Protocol.

28. Annex III to the Convention contains only rules of a general nature, and leaves their application to the discretion of individual governments. It lays down the principle that the most dangerous substances should only be transported in limited quantities, and makes recommendations as to the essential features of packagings and containers and their stowage.

29. Annex IV to the Convention stipulates that ships of over 200 GT authorized to carry more than ten persons must be equipped with machinery to treat, purify or disinfect sewage, or a storage tank for it, as well as a standardized piping system for its disposal in the appropriate port installations. After a thorough inspection, these ships may be issued with an International Sewage Pollution Prevention Certificate. The object of these provisions is to prohibit in principle all discharge of sewage, at least in coastal waters, except in cases of necessity or force majeure. Nevertheless, such discharges are permitted only when certain conditions are observed. If the sewage is only disinfected or liquidized, the ship may expel it in moderate quantities while travelling at a distance of over four miles from the nearest land. If it has been purified and treated according to official standards, it may be discharged freely.

30. A last Annex to the Convention seeks to reduce the discharge of garbage from ships, such as paper, bottle, cans, etc. It prohibits the jettisoning at any point of objects made of plastic or synthetic fibres. The discarding of packagings and packing and wrapping materials may not take place less than five miles from the

nearest land, nor in specially protected areas. Other refuse may only be thrown into the sea at a minimum distance of twelve miles from the coast, unless it is ground up or liquified, and always outside the limits of the special areas.

31. These regulations apply to all ships, whatever their tonnage, with the general exception of warships. As for oil rigs, materials which have been extracted from the seabed may be thrown back, but refuse may only be jettisoned after being ground up or liquidized.

32. As with the 1954 Convention, the principle of leaving enforcement powers with the flag State of the ship involved is retained. Nevertheless, contracting States have the right to impose sanctions for violations in waters under their jurisdiction, including those committed by ships flying the flags of any other contracting parties. When the violation has occurred outside these waters or in a place which cannot be determined, the powers attributed to the coastal State are more restricted. In ports or terminals generally within their jurisdiction, the competent authorities may proceed to an examination of the certificates which the ship flying the flag of the other State is required to possess. If it appears that the ship being inspected does not have a valid certificate on board or that the vessel does not come up to the specifications Stated on the document, the coastal State may prohibit the ship from sailing. The competent authorities of the port State may also inspect the ship to discover whether a violation has occurred. They may also examine all relevant documents where discharges are recorded and, in particular, all mechanisms for the checking and control of oil discharges. They will also be permitted to ascertain whether the ship is carrying waste or other matter which it intends to discharge at sea, or whether such an operation has been performed prior to its arrival. If a State thus discovers that a violation has been committed, it must collect all existing evidence and information, possibly with the co-operation of other contracting States, and forward it to the competent activities of the flag State, so that proceedings may be taken against the guilty party. The flag State is to investigate the matter and, if satisfied that sufficient evidence is available, must cause legal proceedings to be taken against the violator as soon as possible. At this point the Convention limits itself to stating that sanctions imposed must be sufficiently severe to discourage any other offenders, and must be equally severe irrespective of where the violations occurs.

Prevention of pollution from shipping accidents

33. All States of the region are aware of the enormous risks that intense traffic of tankers entails. The work of IMO aims at preventing the multiplication of tanker accidents and pollution emergencies.

34. The International Regulations for Preventing Collisions at Sea (1960-1972) lay down basic rules for avoiding situations liable to cause shipping accidents and include a provision relating to the establishment of voluntary traffic separation schemes. The rules laid down in 1960 came into force in 1965. They were amended in 1972 by a Convention which came into force in July 1977 providing for obligatory traffic separation schemes. The 1960 rules were replaced, as of 15 July 1977, by the Regulation attached to the 1972 Convention, for those States which are Parties to the Convention. As of 1 July 1983 the 1972 text had been accepted by France.

35. The 1960 International Convention for the Safety of Life at Sea (SOLAS) , which entered into force in May 1965 and has been amended in 1966, 1967, 1968, 1969, 1971 and 1973, establishes certain basic construction, equipment, safety and operation standards, including standards for nuclear reaction installations. None of the amendments are in force. Safety certificates and assessments by the competent

national authorities are to be made available to the competent authorities of countries which the ship intends to visit. With regard to the region dealt with in this report, it should be noted that France, Kenya, Madagascar, Seychelles and Somalia are contracting parties.

36. The 1974 International Convention for the Safety of Life at Sea, which entered into force in May 1980, supersedes the 1960 SOLAS Convention for those States which have become parties to the Convention of 1974. It contains more rigid technical specifications regarding the structure and equipment of ships, including nuclear-propelled ships. Of the States involved in the East African region, France, Madagascar and Seychelles are Parties to the Convention. A supplementary protocol to the Convention, adopted by an IMO Conference in February 1978, requires special navigation equipment for tankers over 10,000 tons and tightens inspection and certification provisions. It entered into force on 1 May 1981. The amendments of 1981 are not yet in force.

Minimization of damage from shipping accident

37. Under the 1969 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, coastal States faced with a grave and imminent danger to their coastline or related interests from pollution or threats of pollution of the sea by oil following upon a maritime casualty, may take such action on the high seas as may be reasonably necessary to avert or mitigate the danger. The Convention does not apply to warships or to installations on the continental shelf. Certain procedures of notification and consultation are envisaged by the Convention, although these may be waived in cases of extreme urgency. The severity of intervention measures must be in proportion to the damage which the coastal State has sustained, or with which it is threatened. In the event of excessive measures, the coastal State may be required to pay compensation. Provision is made for the compulsory submission of any disputes between Parties to conciliation and arbitration. The Convention came into force in May 1975. Of the States covered in this report, as of 1 July 1983, only France has ratified it, and Madagascar has signed it.

38. The 1973 Protocol Relating to Intervention on the High Seas in Cases of Marine Pollution by Substances Other than Oil came into force on 30 March 1983. As of 1 July 1983, none of the nine States of the region had become a party to it. It extends the application of the provisions of the 1969 Convention to intervention on the high seas in cases of pollution by substances other than oil which are liable to cause serious damage. These substances are listed in an Appendix to the Protocol, and comprise products which endanger human health, are harmful to marine flora and fauna, are detrimental to natural beauty and inhibit other legitimate uses of the sea.

Liability and compensation for pollution from shipping

39. The 1969 International Convention on Civil Liability for Oil Pollution Damage, which came into force in 1975, defines the shipowner as the person responsible for possible damage due to oil pollution. The shipowner is the person in whose name the ship has been registered. Liability is strict, in the sense that the shipowner is responsible for all pollution resulting from a leakage or a discharge of oil from his ship without it being necessary to prove fault. The Convention applies only to tankers and does not cover other commercial vessels or warships. It applies exclusively to damage by pollution occurring in the territory, including the

territorial seas, of a contracting State and to protective measures intended to avert or reduce such damage. In order to guarantee the solvency of the shipowner, the latter must take out insurance or some other financial guarantee, the amount of which is fixed by the Agreement and varies according to the tonnage of the ship . Its strict and precise provisions tend to ensure that the obligations of the shipowner will be respected and easily enforced. As of 1 July 1983, only France and Madagascar were parties to the Convention. Financial points were revised by a protocol drawn up in London in November 1976, which came into force on 8 April 1981. No State in the region has accepted the Protocol, as of 1 July 1983.

40. The 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution damage aims at guaranteeing compensation for victims of oil pollution damage in a more satisfactory way than that provided by the 1969 Convention. In particular, it provides compensation for the victims when the shipowner and his guarantor are incapable of meeting their financial obligations. It establishes an international fund formed essentially by contributions paid by importers of oil in proportion to the quantities received. It came into force in October 1978 and among the countries forming the subject of the present report only France has ratified it. Madagascar signed it in 1971. A supplementary protocol adopted in London in 1976 and not yet in force deals with financial aspects.

41. The International Convention on the Liability of Operators of Nuclear Ships, adopted in Brussels in 1962, attempted to place strict liability on the operators of nuclear ships, including warships and other governmental vessels. As of 1 July 1983, the Convention had not yet entered into force, and of the States concerned by the present report, only Madagascar had ratified it. The Convention Relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material, adopted in Brussels in 1971, is designed to remove certain conflicts between the liability of shipowners and general conventions on damage caused by nuclear installations. It entered into force in 1975, but has only been ratified by France. Madagascar signed it in 1971.

42. The International Convention Relating to the Limitation of the Liability of Owners of Sea-going Ships, adopted in Brussels in 1957, limits the liability of shipowners for damage caused by their vessels, in the absence of privity or fault, to a maximum of 7 million U.S. dollars. It does not refer specifically to damage caused by pollution although it is applicable in such cases. The Convention came into force in 1968; as of 1 July 1983, France, Kenya, Madagascar and Mauritius, were parties to it. A Protocol of December 1979, which has not yet entered into force, has changed the amounts for compensation. It is expected to be replaced eventually by the Convention on Limitation of Liability for Maritime Claims, adopted in London in 1976, which raised the limits of liability and extended them from shipowners to salvors. According to Article 3, however, the limitation shall not apply to claims for nuclear damage and to claims for oil pollution damage within the meaning of the above-mentioned 1969 Liability Convention or any amendment or protocol thereto which is in force. Among the States covered by this report, only France has ratified it, with some reservations.

43. The Convention on Civil Liability for Oil Pollution Damage resulting from Exploration for and Exploitation of Seabed Mineral Resources, adopted in London in 1977, has not yet entered into force, and as of 1 July 1983, none of the States covered by this report had ratified it. The Convention applies exclusively to pollution damage resulting from incidents occurring beyond the coastal low waterline of the State controlling an installation, if such pollution damage has been suffered in the territory, including territorial sea, of a State party to the Convention. It

establishes a regime of strict liability. In the case of plurality of operation, such liability is supported jointly and severally. The Convention covers pollution by oil and oily substances. Liability is limited to 40 million Special Drawing Rights, except in cases of deliberate negligence, where no limitation is envisaged. Operators who want to avail themselves of the benefit of limitation shall constitute a fund for the total sum representing the limit of their liability.

Pollution from land-based sources

44. To date no Convention has been concluded at a global level restricting discharges of polluting substances from land-based sources into the sea through media such as inland waterways and the atmosphere. However, the Ad Hoc Meeting of Senior Government Officials Expert in Environmental Law convened by UNEP in Montevideo from 28 October to 6 November 1981, concluded that one of the priority areas for which global guidelines, principles or agreements should be developed is marine pollution from land-based sources. Work in this and the other priority fields recommended by the meeting was approved by decisions 10/21 and 10/24 adopted at the tenth session of the UNEP Governing Council. The first meeting of experts to begin developing global guidelines on marine pollution from land-based sources will be held in late 1983.

45. It is appropriate to mention under this section the 1971 Convention on Wetlands of International Importance especially on Waterfowl Habitat, which entered into force in December 1975. It was amended by a Protocol adopted on 3 December 1982, in Paris. None of the countries covered by this report are parties to the Convention and to its Protocol. Although none of the wetlands listed in the Convention are located in the region under study, this Convention is interesting in view of the vast areas of wetlands and mangroves which are in need of protection in the countries covered by the present report.

46. Similarly, the Convention concerning the Protection of the World Cultural and Natural Heritage, adopted in Paris at UNESCO in 1972 and in force since 1975, deserves a mention in this section on land-based sources of pollution. In being instrumental in the protection of fragile or ecologically significant parts of the territory, it may have a direct effect on land-based pollution abatement. In view of the portion of coastal and marine environment both Conventions are intended to protect, their protection cannot go without a strict control of the land-based sources of pollution. As of 1 July 1983, France, Seychelles and Tanzania had ratified the Convention. Madagascar joined these three States as a Party to the Convention on 6 February 1983.

Pollution from operations carried out on the seabed and continental shelf

47. The 1958 Convention on the High Seas which entered into force in 1964, stipulates that all States are required to establish regulations directed towards avoiding pollution of the sea by oil discharged from ships or pipelines, or resulting from the exploration and exploitation of the seabed and its subsoil. As of 1 July 1983 three States in the region had become parties to it: Kenya, Madagascar, and Mauritius.

48. The 1958 Convention on the Continental Shelf which entered into force in June 1964, applies to areas of the continental shelf extending beyond the limits of territorial waters. It defines the continental shelf as being the area of seabed confined within the 200 meters isobath or extending beyond this limit to the point where the depth of the superjacent waters permits the exploitation of the natural resources of the said area. It prohibits, inter alia, any unjustifiable

interference with navigation, fishing or the conservation of the living resources of the sea resulting from the exploration of the continental shelf and the exploitation of its natural resources. Under the Convention, coastal States are also required to take all appropriate measures for the protection of the living resources of the sea from harmful agents in the safety areas to be established around continental shelf installations. Other preventive measures are also stipulated, such as requirements for giving notice of the construction of installations, the setting up and maintenance of adequate warning systems for shipping, the dismantling of abandoned or disused installations and the siting of installations sufficiently far away from recognized shipping lanes. By 1 July 1983, it had been accepted, in particular, by France, Kenya, Madagascar and Mauritius. France, Madagascar and Mauritius have also accepted the optional protocol of signature concerning the compulsory settlement of disputes related to the 1958 Geneva Convention.

Pollution from waste dumping

49. Parties to the 1958 Convention on the High Seas among States of the region are listed above. The Convention requires contracting States to take measures to prevent pollution of the seas resulting from the dumping of radio-active wastes, taking into account any standards and regulations which may have been formulated by the competent international organizations. In general terms, contracting States are also required to co-operate with the competent international organizations in taking measures for the prevention of pollution of the seas or air space above resulting from any activities entailing the use of radio-active materials or other harmful agents. All Geneva Conventions of 1958 will be superseded by the recently adopted U.N. Convention of the Law of the Sea, for those States which will become Parties to it (Article 311 of the 1982 Convention).

50. The 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter recognizes that States have the sovereign right to exploit their own resources according to their environment policies, but stipulates that they also have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction. Contracting parties pledge themselves to take all practicable steps to prevent the pollution of the sea by the dumping of wastes and other matter liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea. The Convention defines dumping as "any deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea", as well as the deliberate disposal of vessels, aircraft, platforms or other man-made structures at sea. It does not apply to discharges resulting from the normal operations of ships, aircraft, platforms and other structures.

51. Wastes and other matter the dumping of which comes under the Convention, are grouped in three categories according to the gravity of the risks they present. The dumping of wastes in the first category is in principle totally prohibited. This category comprises organo-halogen compounds, mercury and cadmium and their compounds, persistent plastics and other synthetic materials liable to interfere with fishing, navigation or other legitimate uses of the sea, high-level radio-active substances, materials produced for chemical or biological warfare and most kinds of oil.

52. With regard to the dumping of certain other substances, the Convention requires that the State wishing to dispose of them take special precautions. Such dumping is

permitted only after the issue of a specific permit. This second category of waste includes substances containing significant amounts of arsenic, lead, copper, zinc, organosilicon compounds, cyanides, fluorides, pesticides, and radio-active matter the dumping of which is not totally prohibited. However, the Seventh Consultative Meeting of Contracting Parties has adopted a resolution calling for a suspension of the dumping of radioactive wastes at sea pending the report of a group of scientific experts which will be available in 1985.

53. A general dumping permit stating the manner of disposal and any necessary protective measures is required for the dumping of all other wastes and substances.

54. The above prohibitions do not apply to warships and military aircraft. They are also inapplicable when it is necessary to secure the safety of human life or of ships, aircraft, platforms and other man-made structures at sea.

55. The Convention envisages that where it is in the common interest of contracting parties to protect the marine environment of a given geographical area, the countries concerned, taking regional characteristics into account, shall endeavour to enter into regional agreements with a view to preventing pollution from dumping.

56. As of 1 July 1983, of the States dealt with in this report only France and Kenya had become parties to this Convention, which entered into force in 1975.

Pollution due to military activities

57. The 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water, according to its preamble, aims at putting an end to contamination of the human environment by radioactive substances. It prohibits all test explosions of nuclear weapons in the atmosphere beyond its limits, including outer space, or underwater, including territorial waters and the high seas, as well as in any other environment, if such an explosion causes radioactive debris to be present within the territorial limits of the State under whose jurisdiction or control such explosion is conducted. The Treaty entered into force in October 1963. On 1 July 1983 parties to this Treaty included Kenya, Madagascar, Mauritius, Somalia, and Tanzania .

58. The 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Suboil Thereof prohibits the emplacement of nuclear and other weapons of mass destruction on the seabed or in its subsoil. It also prohibits the construction of installations for launching the weapons and other installations expressly designed for their storage, testing or utilization. It applies only to zones which are situated beyond twelve nautical miles from the coast. The Treaty entered into force in May 1972. As of 1 July 1983 only Mauritius was among the parties to this Treaty; Madagascar and Tanzania signed it in 1971.

59. The 1977 Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, which came in force in October 1978, was prepared by the Conference of the United Nations Committee on Disarmament, pursuant to UN General Assembly Resolution 31/72. While supporting international co-operation in the peaceful uses of "environmental modification techniques" as defined in Article II (e.g. including artificial changes of the Earth's hydrosphere), the convention prohibits hostile uses causing serious harm to other States. None of the States of the region have yet become parties to the Convention. Madagascar signed it in 1977.

Protection of marine species

60. The 1946 International Convention for the Regulation of Whaling came into force in 1947. It was amended by a Protocol of 1956 which entered into force in 1959. As of 1 July 1983, four States among those covered by the present report were Parties to the Convention and Members of the International Whaling Commission: France, Kenya, Mauritius and Seychelles. For the 1981/82 pelagic season and 1982 coastal seasons, the catch limit fixed by the IWC for all species of whales in Northern and Southern Indian Ocean stocks was zero, i.e. a total ban. It is on the initiative of the Seychelles that the International Whaling Commission established a whale sanctuary in the Indian Ocean.

61. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), adopted in Washington in 1973 and in force since 1975, regulates international trade in specimens of threatened, endangered species. Several marine species are covered by the three annexes to the Convention. As of 1 July 1983, among the countries covered by this report, France, Kenya, Madagascar, Mauritius, Seychelles and Tanzania were parties to the Convention.

62. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn, 1979) also contains marine species in its Appendix I (endangered migratory species) and II (migratory species to be the subject of agreements). As of 1 July 1983 none of the States concerned by this report were parties to the Convention. France and Madagascar signed it in 1979.

63. The International Plant Protection Convention (Rome, 1951) which entered into force in 1952, could potentially cover cultivated marine plants. As of 1 July 1983, France, Kenya and Madagascar, among the countries concerned by this report, had ratified the Convention.

United Nations Convention on the Law of the Sea

64. Between 1970 and 1982, the United Nations Organization has worked on a process of general revision of the whole Law of the Sea. Acting on Resolution 2760 (XXV) the General Assembly convened the Third United Nations Conference on the Law of the Sea, with a mandate to adopt a Convention dealing with all matters relating to the Law of the Sea, including the protection of the marine environment. All the States concerned by the present report have taken part in the Conference.

65. Delegations from 144 countries met in Jamaica, from 6 to 10 December 1982 for the final session of the Conference and the opening for signature of the United Nations Convention on the Law of the Sea. On 10 December 1982, 119 delegations signed the new convention. Among them were France, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia and Tanzania. Mauritius and Somalia have started the ratification process.

66. In this seventeen part Convention, the provisions dealing with the protection and preservation of the marine environment are contained in Part XII. In addition, a number of provisions which are contained in other parts are directly related to the conservation of marine living resources (articles 61, 63-67, 117-120). The text posits the general obligation of States to protect and preserve the marine environment, and recognizes, on the other hand, the sovereign right of States to exploit their natural resources pursuant to their environmental policies. States are to take all necessary measures to prevent, reduce and control pollution of the marine environment from any source and to ensure that activities under their jurisdiction do not cause pollution damage to other States or to areas beyond their

national jurisdiction. The text contains, framework provisions, and provides that States should co-operate on a global and, as appropriate, on a regional basis to formulate further rules, standards and recommended practices and procedures consistent with the convention. In taking measures under the convention, States are to guard against merely transferring pollution damage or hazards from one area or medium to another.

67. States are to notify other States likely to be affected by any imminent danger to the marine environment and are to co-operate with other States in the area to combat the pollution and to draw up contingency plans for this purpose. They are to co-operate in the promotion of studies, research and exchange of information and in establishing scientific criteria. Provision is also made for co-operation in monitoring and environmental assessment. Developing States are to be accorded preferential treatment by international organizations and are to receive scientific and technical assistance.

68. States are required to establish national controls over land-based sources of marine pollution, over pollution arising from the exploration and exploitation of the seabed, and from installations under their jurisdiction, over the dumping of wastes and other matter and over pollution from or through the atmosphere. In each case, the possibility of further action at the regional level through harmonization of national policies or the establishment of regional rules, standards and recommended practices and procedures is envisaged. Measures for the prevention of pollution from activities relating to the international seabed are provided for under a general provision in Part XI.

69. So far as pollution from shipping is concerned, States are to establish international rules and standards and, at the national level, laws and regulations covering vessels flying their own flag that have at least the same effect as those international rules and standards. Each State may establish its own laws and regulations for vessels in its territorial sea, but these are not to hamper innocent passage of foreign ships. In their exclusive economic zones States may adopt legislation for the enforcement of generally accepted international pollution rules and standards. Where such rules and standards are inadequate to meet the special circumstances of a particularly vulnerable area in its economic zone, a coastal State may apply to the competent international organization to have the area declared a special area.

70. The Convention contains a number of provisions on enforcement with particular reference to coastal States' rights. Enforcement of controls over land-based sources of marine pollution, over pollution from activities on the sea bed under their jurisdiction and from atmospheric sources, is reserved to States, and over pollution from activities on the international seabed to the International Seabed Authority, in co-operation with the States Parties. Dumping controls are to be enforced by a State in its territory, the flag State, the coastal State for dumping in its exclusive economic zone or on its continental shelf, and the port State where dumping vessels are loaded. So far as discharges from shipping are concerned, responsibility for ensuring compliance with international rules and standards is vested with the flag State and with the port State for vessels voluntarily in its ports where the evidence indicates it has discharged countrary to international rules and standards, on the high seas or within its territorial sea or exclusive economic zone. The port State may also investigate and take action on alleged violations at the request of another State where vessels have discharged illegally within the territorial sea or exclusive economic zone of the requesting State.

71. Coastal State enforcement powers, where the offending vessel is not voluntarily within one of its ports, depend on where the violation took place. If the alleged offence took place within its territorial sea, the coastal State may undertake

physical inspection and, if warranted, arrest and prosecute the master or owner of offending ship. If the offence took place in the exclusive economic zone against international rules and standards or national legislation implementing them, the coastal State may require the offending vessel to provide certain information regarding itself and the violation. Where the violation has resulted in substantial discharge and significant pollution, and if the information has been refused or is at variance with the evident facts, the coastal State may undertake physical inspection of the vessel. Where, on the other hand, a flagrant or gross violation has occurred in the exclusive economic zone resulting in major damage or the threat thereof, the coastal State may prosecute directly, provided that any bonding or other financial security arrangements in force are respected. Where investigations of foreign vessels are undertaken, the vessels must not be delayed longer than essential, and bonding arrangements are to be allowed. In any proceedings for violations outside internal waters only monetary penalties are to be imposed.

72. The provisions of the Convention are to be without prejudice to specific obligations assumed under the special conventions and agreements concluded in furtherance of the general principles of the framework convention.

Other global developments

73. The UNEP Working Group of Experts on Environmental Law, undertook a study of offshore mining and drilling carried out within the limits of national jurisdiction. The same group acted as a preparatory Committee for the Ad Hoc Meeting of Senior Governmental Officials Expert in Environmental Law which met in Montevideo from 28 October to 6 November 1981, under the aegis of UNEP. As noted in paragraph 44, the meeting identified marine pollution from land-based sources as one of three priority subject areas for more indepth work. The same meeting selected eight other subject areas, among which is coastal zone management, and recommended that UNEP develop guidelines and principles for this particular area. All findings of the Montevideo meeting were endorsed by the tenth session of the Governing Council of UNEP (Nairobi, May 1982, decision 10/21).

REGIONAL, SUB-REGIONAL AND BILATERAL CO-OPERATION

74. The 1968 African Convention for the Conservation of Nature and Natural Resources which applies to the whole continent, came into force in October 1969. It has been ratified, in particular, by Kenya, Madagascar, Seychelles and Tanzania. It urges contracting States to adopt policies for the conservation, utilization and development of underground and surface waters, and to take appropriate measures to ensure, inter alia, the prevention and control of pollution in these waters. When water resources are shared by two or more contracting States, these States are to act in consultation and, where necessary, set up public commissions to tackle the problems arising from the joint use of these resources and to ensure both their development and conservation. This convention is in the process of being revised under the auspices of OAU. The amendments which are envisaged aim first at slightly expanding the scope of the Convention to subjects such as air quality; secondly at adjusting provisions to developments since 1968, such as CITES; and thirdly at providing more focus on regular review of the Convention within OAU.

75. The present UNEP regional programme for the East African region is not an arbitrary creation. Indeed, the nine States of the region have already experienced fruitful co-operation in one important sector of the protection and development of

the marine and coastal environment: fisheries. These nine States are also the nine members of the Committee for the Development and Management of Fisheries in the South-West Indian Ocean, which has, up to now, held two sessions and will hold its third session in December 1984. The Committee was established in 1980 within the broader framework of the Indian Ocean Fishery Commission (IOFC), a FAO body. IOFC was created by the Council of FAO at its forty-eighth Session (1967, resolution 2/48) to promote, assist and co-ordinate national programmes over the entire field of fishery development and conservation, to promote research and development activities in the area through international sources, and to examine management problems with particular reference to off-shore resources. The South-West Indian Ocean Committee referred to above is a subsidiary body of the IOFC. Its more recent session, the second one, was held in Mahe (Seychelles) from 13 to 15 December 1982. All nine countries covered in this report participated in the session, during which the State of fisheries in the region was reviewed, country by country, as well as the list of fisheries priorities as established by the first session of the Committee (April 1981). Closer attention was paid to the special problems of small-scale fisheries, following the recommendation of the FAO Workshop on Monitoring Control and Surveillance (Mahe, Seychelles, September 1982). The Committee recommended that a feasibility study be undertaken including such matters as harmonization of legislation, of relevant licence conditions, reporting procedures, and marking of vessels. The necessity of regional exchange of information, regional collection of data and regional exchange of fishery intellingence was stressed. Covering the same area, a UNDP/FAO Regional Fisheries Development and Management Project was started in 1979 and should continue until 1986, playing a co-ordinating and dissemination role in fisheries technology, fisheries statistics, fisheries training.

76. The nine States are all members of the United Nations and eight out of the nine co-operate on a continuous basis within the framework of the Economic Commission for Africa (ECA). Several programmes of ECA are directly related to the protection and development of the coastal and marine environment. In 1980, ECA organized, with the support of UNEP, a Session for Lawyers on Development of Environmental Protection Legislation in the ECA Region (Addis Ababa, 29 September - 3 October 1980). It produced a series of recommendations and guidelines, in particular on environmental impact analysis, protected areas, coastal zone and marine resources management. These recommendations, although mainly designed for national actions, contain calls for regional co-operation in these sectors. The same eight countries are members of the Organization of African Unity, created in 1963. Among its purposes listed in Article II of the charter of the OAU is the co-ordination and intensification of regional and international co-operation in all fields. They also are parties to the Agreement establishing the African Development Bank (1963), the purpose of which is to contribute to the economic development and social progress of its members, individually and jointly. More recently, Kenya, Mozambique and Tanzania became parties to the Agreement for the Establishment of a Centre on Integrated Rural Development (CIRD Africa) signed in September 1979. The main objective of the Centre is to assist national action and to stimulate and promote regional co-operation relating to integrated rural development in Africa. It was established as a follow-up to the World Conference on Agrarian Reform and Rural Development (Rome, 1979).

77. The Indian Ocean Special Committee was established in 1972 by the United Nations General Assembly. Its aim is to study the implications of Assembly Resolution 2832 (XXVI) of 16 December 1971 declaring the Indian Ocean to be a zone of peace in perpetuity. France, Kenya, Madagascar, Mauritius, Mozambique, Somalia, and Tanzania are members of the Committee which held its last Conference in Colombo in 1981. Seychelles has more recently become a member, and it participated in the first 1983 session of the Committee (New York, February 1983).

78. On 17 July 1982, the Prime Minister of Mauritius announced the establishment of

the Indian Ocean Commission. Its purpose is, in its first phase, to develop co-operation among Madagascar, Mauritius and Seychelles.

79. At a sub-regional level, Mozambique and Tanzania co-operate with other African States in the Southern Africa Development Coordination Conference (SADCC), formally established in April 1980. One of its objectives is the mobilization of domestic and regional resources to carry out national, interstate and regional policies to reduce dependence and build genuine regional co-ordination. Mozambique has special responsibilities for transport and communications, Tanzania for industrial development. Under the Treaty for the Establishment of the Preferential Trade Area for Eastern and Southern African States signed on 21 December 1981, eight of the nine States covered in the report, co-operate in the development of all fields of economic activity, particularly in the fields of industry, communications, agriculture and natural resources (Article 3). The Protocol on Transport and Communications covers maritime transport and ports as well as meteorological services. The one on co-operation in the field of Agricultural Development covers all agricultural goods, including fisheries and forest products.

80. At the bilateral level, several agreements on memoranda of understanding have been or are in the process of being signed on matters related to assistance to aerial and maritime navigation, especially on meteorological information exchange. It is obvious that there is room for more intensive co-operation at the bilateral and sub-regional level, among countries which have so much in common: the sea. Here again, the fisheries sector may be the more promising. Mozambique and Seychelles have already negotiated many bilateral fisheries agreements, but only Seychelles has entered into a bilateral agreement with another of the countries covered by this report: in October 1982 it established a joint fisheries corporation with France. Lastly, one should mention here two agreements of delimitation of maritime boundaries: first, an exchange of letters between Kenya and Tanzania in 1975 and 1976; secondly, a Convention between France and Mauritius of 2 April 1980, delimitating the respective EEZs between Reunion and Mauritius.

PART II: SURVEY OF NATIONAL LEGISLATION

81. The Constitution being, in every country "the supreme law of the land", it is quite natural to start a study on national environment legislation by looking at the Constitution of the countries concerned, to find out whether any constitutional provisions refer to the matter.

82. In the Malagasy Constitution of 1972, Article 7 refers to natural resources as falling under State ownership. Under Article 30 of the Constitution of the Islamic Federal Republic of the Comoros, of 1 October 1978, as amended on 24 October 1982, the federal order of Government is given power to make rules for environment protection; local laws on the subject may only be stricter than federal provisions. The Constitution of Mozambique also refers to environment-related matters, but looks at them from another angle. Article 8 of the Constitution of 1978 stipulates that all natural resources including the territorial waters and the continental shelf belong to the State. The same Article refers to and endorses the Charter of Economic Rights and Duties of States, adopted by the XXIX Session of the General Assembly of the United Nations by Resolution 3281 (XXIX) of 12 December 1974. The preamble of this Charter refers to "the protection, preservation and enhancement of the environment", while its Article 3 obliges each State to co-operate in order to achieve optimum use of natural resources shared by two or more countries, and its Article 30 reads: "The protection, preservation and enhancement of the environment (...) is the responsibility of all States". It is also interesting to note that Article 24 recalls that the People's Republic of Mozambique adheres to the principle of the Indian Ocean as a denuclearized zone of peace.

NATIONAL LEGISLATION APPLICABLE TO MARINE POLLUTION BY DISCHARGES FROM SHIPS

83. All the States in the East African region are unanimous in recognizing that their coastline borders the world's heaviest oil tanker traffic route in the world, and are fully aware of the potential danger of pollution to their coastal waters should an accident occur. Accordingly, the range of national laws and regulations dealing with this subject should reflect their concern. In this section, two aspects of the respective statutory texts will be considered, viz: scope of application and preventive measures. Sanctions will be examined as ancillary provisions to the substantive provisions referred to in both sections.

Scope of application

84. The scope of application of the legislation concerns the geographical areas to which the national laws applies; the type of vessel to which the law applies; and the definition of pollutants.

85. The area within which national laws dealing with pollution from ships apply is defined in most cases as the territorial sea or the Exclusive Economic Zone. In the case of Kenya, the Territorial Waters Act of 1972 (Chap 371, Laws of Kenya) is clear in its prohibition of discharge of oil from ships. The national territorial waters extend to a limit of twelve nautical miles. However, Kenya also declared its jurisdiction over an Exclusive Economic Zone extending to 200 nautical miles, measured from the respective baseline. This jurisdiction was declared in a Presidential Proclamation issued on 28 February 1979 and it did adopt the standard

language in Article 56 of the 1982 Law of the Sea Convention in that it permits third States and nationals to enjoy freedom of navigation while it reserves to Kenyan jurisdiction pollution regulation, control and abatement.

86. Since 1973, Madagascar has declared a territorial sea of 50 miles and an Exclusive Economic Zone of 100 miles beyond its territorial sea. A decree of 1970 delimits the internal waters of the country. All those texts will be modified or repealed when Madagascar, which has just signed the Convention of 1982 on the Law of the Sea, ratifies it.

87. A recent Act of 1982 (No. 82-005) defines the maritime zones of the Comoros. It follows the notion of archipelagic waters refined by the Convention on the Law of the Sea of 1982. Territorial waters extend over 12 miles from the baseline. The Exclusive Economic Zone extends to the 200 miles limit or to an equidistant line between the coasts of the Comoros and the coasts of adjacent foreign countries, this latter principle being negotiable by convention (Article 6). Article 7 of the Act is clearly inspired by what is now Article 56 of the 1982 Convention.

88. In Mozambique, Statutory Order No. 31/76 of 19 August 1976, defines the exclusive rights of the country on the economic resources of the sea adjacent to the coasts of Mozambique. Article 1 declares a territorial sea of 12 miles and Article 2 a contiguous zone of 200.

89. Mauritius and Seychelles have provisions nearly similar to those of Kenya. The Mauritius Marine Zones legislation of 1 August 1977 and the Seychelles Marine Zone Act 1977 both provide for a territorial sea limited to twelve nautical miles and an Exclusive Economic Zone extending to 200 nautical miles. Like Kenya, both island laws have provisions dealing with control of marine pollution.

90. Both Somalia and Tanzania have provisions relating to limits of national jurisdiction in their laws, but taking different positions. In the case of Somalia, the Marine Code of 1959 as amended by Law No. 37 of 10 September 1972 extended the country's territorial sea to 200 nautical miles. While the Law did not specifically cover marine pollution control it may be assumed that Somalia subsumed it under the ordinary exercise of powers within a territorial sea. What must be pointed out in this regard, however, is that Somalia signed the 1982 Law of the Sea Convention which does not permit such a claim and therefore it may be expected that its legislation will be realigned accordingly.

91. In Tanzania the President issued a Proclamation under Section 2 of the Constitution (G.N. No. 209) on 7 September 1973 declaring Tanzania's claim to a territorial sea of 50 nautical miles. As in the case of Somalia, regulation of marine pollution, from ships or otherwise, was not expressly provided for; the matter may be covered implicitly under the general control of territorial waters. Again, as in the case of Somalia, Tanzania signed the 1982 Law of the Sea Convention and this suggests that the 1973 Proclamation might, in fact, be amended to bring it in harmony with the new global regime.

92. Apart from national jurisdiction over the territorial sea and the Exclusive Economic Zone, some of the countries have provisions dealing with special areas to be protected specifically from pollution from ships. Both the Kenya Merchant Shipping Act (Act No. 35 of 1967) and Tanzania's Merchant Shipping (No. 15 of 6 October, 1967), seem to have been influenced by Article 1 of the 1954 International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL), in that they both prohibit the discharge from ship of any oil or oily mixtures in any harbour or into the sea within 100 nautical miles from the coast. With the new legal regime of the 1982 Convention which recognizes the coastal State's exercise of jurisdiction with respect to marine pollution control within the Exclusive Economic Zone, the two

countries might revise these provisions.

93. Mauritius and Seychelles, whose Maritime Zones laws were adopted in 1977, have provisions for designated areas. The President of the Seychelles or as the case may be, the Prime Minister of Mauritius may, by special order, declare geographical zones of the sea as designated areas for the purpose of protecting the marine environment.

94. In terms of areas of application Section I(1) of Schedule 1 of the Seychelles Dumping at Sea Act, 1974, prohibits dumping in the Seychelles territorial waters; prohibits dumping by a ship registered in Seychelles outside the national territorial waters; and prohibits the loading of substances or articles on board any ship, aircraft, hovercraft or marine structure in the territory or territorial waters of Seychelles for dumping at sea anywhere. Further, it makes it an offence for anyone to load such substances or articles at a port in Seychelles no matter where the dumping will take place.

95. Decree no. 78-148 of 3 February 1978 applies the 200 mile Exclusive Economic Zone concept to Reunion. The sea water limit in the estuaries of the island is fixed by Executive Order no. 615/IM of 1 July 1955.

96. The national laws on the regime of the Exclusive Economic Zone in Kenya, Mauritius and Seychelles do not explicitly provide definitions for ships which are subject to pollution control. The Mauritius and Seychelles laws both make reference to the maintenance of "off-shore terminals and installations and other structures and devices"; which may arguably be broadly interpreted to include ships as defined in the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL).

97. The Kenyan and Tanzanian Merchant Shipping Acts both give interpretations of the word "ship" in identical terms. A "ship" includes "every description of vessel used in navigation not propelled by oars" and a "vessel" means "any ship or boat, or any other description of vessel used or designed to be used in navigation." The laws also provide for coverage of sailing ships and steamships. Section 309 of both national laws prohibits any ship, regardless of the nationality of registration, from discharging oil or oily mixtures into a harbour or into the sea within 100 miles from the coast. Similarly, the section prohibits any ship registered in Kenya or Tanzania, as the case may be, from discharging oil or oily mixture within 100 miles of any land. Thus, while the national laws apply to foreign ships at the port or within 100 nautical miles of the coast only, ships registered in Kenya or Tanzania are controlled by the national laws, in whatever part of the world they may be.

98. Seychelles and Mauritius exempt some ships from application of the pollution control measures. The Merchant Shipping (Oil Pollution) Order of Seychelles , 1975, exempts government ships operating jure emperii, as well as warships and naval auxiliaries from application of the law during periods of such services.

99. The list of pollutants covered by most national legislation is clearly influenced by the 1954 OILPOL Convention which limited itself to oil, oily mixtures and heavy diesel oil. This is not in line with the 1973 MARPOL Convention which broadly applies to "harmful substances". Thus, in Section I of the Seychelles Merchant Shipping (Oil Pollution) Act, 1975 if oil carried in bulk, or any oil carried by the ship as cargo or otherwise, is discharged or escapes from the ship, the owner shall be liable. Similarly, Section 309 in both the Kenyan and Tanzanian Merchant Shipping Acts of 1967 prohibits the discharge of any oil, oily mixture or heavy diesel oil.

100. In Madagascar, the legislation on marine pollution by oil and oily mixtures from ships, restates the OILPOL Convention of 1954 as amended in 1962 and 1969. Secondary legislation has been inspired by the same text, although some provisions of the MARPOL Convention of 1973 as amended in 1978 have already penetrated the national regulations on the subject.

101. In the Comoros, an Act of 16 May 1973 (No. 477) provides for a general prohibition of marine pollution by oil from ships, vessels and tankers. This text is limited to national ships. Sanctions go up to 200,000 CFAs (US $300, approximately) and up to an imprisonment of two years imposed on the captain of the ship.

102. Article 2 of Statutory Order No. 90/71 of 22 March 1971, prohibits in Mozambique's waters the discharge of any oil or oily mixture which is not done in conformity with the relevant international conventions. The OILPOL Convention of 1954, amended in 1962, became internal law by executive order No. 46/186 of 11 February 1965. Decree No. 45082 of 21 June 1963 makes it compulsory for national vessels to keep oil records.

103. Presumably to prevent air rather than marine pollution, Section 310 of the Kenyan and Tanzanian Legislation also makes it an offence to emit "dark smoke" from the ship. This is defined to mean any smoke which, if compared in appropriate manner with a chart type known as the "Ringalmann Chart" would appear to be as dark as or darker than shade 2 on the chart. This may be relevant here only to the extent that polluting fumes often precipitate and might end up in marine environment or internal waters.

104. Although pollutants are normally dumped from ships, a strict definition of what consitutes "dumping" is provided in the 1972 London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter. Article III (a) defines dumping as "any deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea" and "any deliberate disposal at sea of vessels, aircraft, platforms or any other man-made structures at sea".

105. Seychelles, together with France, are the only States in the region which have adopted laws which deal with this subject. The Seychelles' Dumping at Sea Act, 1974 (Overseas Territories) Order, 1975, adopted by Britain for the island, during the colonial period and applied in 1976 (S.I. No. 36 of 1976). It refers only to the substances or articles that must not be dumped but gives no definition. Therefore, since the purpose of the particular law was to apply to the "territory" the British Dumping Act of 1974 and since it specifically States in Section 6 of Schedule 1 that the Act was designed to implement the 1972 Oslo Convention and 1972 London Convention on Dumping, it is conclusive that the substances and articles refer to the items listed in Annex I, II and III of the Conventions.

106. Dumping may, however, only be carried out with a licence issued by the government. Presumably, the licence would be subject to the same conditions as in the 1972 London Dumping Convention, which prohibits substances in Annex I, considered so toxic or persistent that they must not be allowed in the sea, while the other two Annexes are subject to regulated licensing and dumping. Such licenses are to be published and be made available for public inspection.

107. Enforcement officers appointed under the law may inspect any premises or vessels suspected of violation. In the process such an officer may open containers, examine equipment, inspect licences and take copies of any document produced. Failure to comply with any requirements imposed, or refusal to answer questions, produce documents or other items, or refusal to permit access to the enforcement

officer constitutes an offence punishable, in the first instance, by a fine not exceeding 200 pounds sterling and on second and subsequent convictions, a fine not exceeding 400 pounds sterling.

108. The basic text which in France, and therefore in Reunion, tackles the problem of marine pollution by oil from ships, is the Act of 26 December 1964, as amended by the Acts of 16 May 1973 and 2 January 1979. These texts go farther than the OILPOL Convention of 1954 in submitting small vessels, not covered by that Convention, to a similar control, provided that they are equipped with a propelling unit of more than 200 h.p. Sanctions are high: up to 5 million FF (approximately US $700 000) and 5 years' imprisonment if the vessel falls under the provisions of the OILPOL Convention; one million FF and 2 years' imprisonment for the captain of other vessels. Owners or operators are held jointly and severally responsible unless they have given written instructions to the captains to comply with the provisions of the OILPOL Convention and of the national legislation. Furthermore, if the offence has been committed upon specific instructions of the owner or of the operator, both may be condemned to double the above-mentioned sentences. High sanctions are also established for the non-respect of traffic regulations.

109. The French decree of 24 March 1978 on accidental marine pollution, which also applies to Reunion, makes it compulsory for the captain of a ship transporting oil to notify the maritime authorities of its entry into territorial waters, as well as to report, within 50 miles of the coast, on any accident. Act no. 79-1 of 2 January 1979 extends these obligations to ships carrying dangerous substances and entering French territorial waters. Sanctions go up to 500 000 FF (approximately US $70 000) and two years' imprisonment.

110. The French Act no. 76-599 of 7 July 1976 deals with marine pollution caused by dumping operations from ships and aircraft. The act consistently refers to the 1972 Oslo Dumping Convention, to which France is a party.

Preventive measures

111. Marine pollution from ships is of two major categories: accidental or intentional. Chances of accidental pollution may be reduced by adoption of certain procedures for navigation, loading and unloading, among others. On the other hand, intentional pollution may be reduced by resorting to strict liability as well as by providing alternative reception facilities for the oil at ports and harbours. Therefore, these aspects ought to be mentioned and accentuated in the legislation.

112. In the cases of Kenya and Tanzania the 1967 Merchant Shipping Act does not prescribe any preventive standards under Part IX, which deals with pollution of the sea. On the other hand, Part V of the Act in both countries stipulates general safety standards required under the 1960 International Convention for the Safety of Life at Sea. These arguably have some relevance to prevention of marine pollution in as much as they deal, inter alia, with survey of vessels for safety and sea worthiness. However, prevention of pollution from ships requires rather specific safety standards. None of the legislation in the countries under study actually stipulate the ships and tanker construction specifications such as are found in the 1954 London Convention as amended up to 1971, or in the 1973 London Convention.

113. None of the countries under study has explicit provisions in their laws requiring port facilities for reception of oil and oily wastes. Section 80 of the Kenya Ports Authority Act (Cap. 391, Laws of Kenya) has a fairly broad requirement that it is the undertaking of the Authority to provide all reasonable facilities for handling and warehousing of cargo and other goods. While these provisions may

arguably include reception facilities for oil and oily wastes, it must also be recalled that the requirements of such facilities under the 1954 London Convention became rather controversial and therefore a clearer undertaking in a national legislation would establish the intention.

114. Very often accidental discharges occur at the point of loading or unloading of oils at the port or harbour or offshore terminal. Therefore the two sets of regulations taken as preventive measures relate on the one hand to maintenance and notification to the port authorities of the amount and kind of oil carried, and on the other, adoption of protective procedures for loading and unloading. Rule 3410 of the Kenya Petroleum Rules (L.N. 201/1957) require the master of the ship to submit a written declaration stating the quantity and class of petroleum carried and how much is intended for landing at the port. The port manager has powers to conduct inspection of the ship to verify the information or compliance. Section 38 of Kenya's Ports Authority Act requires precisely the same information and permits inspections.

115. Contravention of these precautionary requirements under Kenya's Petroleum Rules is punishable by fine of one thousand Kenyan shillings for every day upon which the offence occurs or continues.

116. The Seychelles Harbours Regulations adopted in 1933 also require notification by ships carrying petroleum. On nearing the inner or outer harbour and during the time the ship remains there, it is required to display a red flag by day or a red light by night. It is also required to give information on the quantity of petroleum and the manner in which the petroleun is stowed.

117. Both the Kenyan Petroleum Rules and Seychelles Harbours Regulations stipulate procedures for landing, loading and trans-shipment. Regulation 7 of the Seychelles law which is detailed on this issue requires the following conditions: the owner or master of the ship is to notify the port officer of the quantity intended for landing; the petroleum is to be discharged during daytime; unloading equipment is to be tested for safety before use; no flame or fire of any kind is to be allowed in the vicinity of landing; no petroleum is to be discharged or allowed to escape into waters of the harbour; vessels are to be guarded all the time; no petroleum is to be contained in casks, barrels, or other vessels to be landed in the harbour unless such vessels are staunch and reasonably free from leakage and are of such strength and construction as not to be liable to be broken or to leak except in the case of gross carelessness or extraordinary accident; all pipes and other appliances used in the landing of petroleum in bulk is to be reasonably free from leakage; and due diligence is to be exercised in landing once it is started.

118. The penalties for violation of the rules in Kenya and regulations in Seychelles are rather lenient. Kenya imposes a fine of one thousand shillings for every day the offence continues and Seychelles imposes a fine of five hundred rupees. Under certain circumstances the Kenyan law imposes a fine of up to two thousand shillings. However, under the Kenyan law, where the offence relates to loading, landing or transhipment of petrolum it shall be good defence for the ship's owner or master if they can adduce evidence to establish that they took all reasonable measures to prevent the discharge and that the discharge was not caused by their own acts or negligence or those of persons employed by them.

119. Specifically on sanctions relating to pollution, Section 309 of Kenyan and Tanzanian Merchant Shipping Act, 1967 imposes a fine of ten thousand shillings on the owner or master of any ship of their respective national registration, who is convicted of discharging oil or oily mixtures within 100 miles of any land. The Court is further empowered to order the person convicted to defray the expenses incurred in removing the pollution or making good the damage attributable to the offence.

120. In the Seychelles Marine Pollution Regulations 1981 (S.I. 51 of 1981) Regulation 3 provides that whoever is convicted of an offence relating to discharge of oil or oily wastes into water, or specifically allows discharges from an apparatus used for transferring oil from or to a vessel, is liable to imprisonment for five years and to a fine of 200,000 rupees. Regulation 10 provides further that in addition to the above fine and imprisonment the Supreme Court may order that the offender pay the whole or any part of any cost incurred in restoring port of Seychelles, any animals, birds or other wildlife, or any other thing affected by the pollution.

121. It is often notoriously difficult to obtain information or evidence of discharge of oil or oily mixtures. For this reason Section 309(3) of the Merchant Shipping Act in both Kenya and Tanzania provides an incentive stipulating that any person laying or giving evidence leading to the conviction of any master or owner of a ship for marine pollution offences may, at the discretion of the court, be awarded a portion, not exceeding one half, of the fine imposed.

Ports and harbours activities

122. Loading, unloading and transfer of oil and other substances transported by ships may lead to accidental discharges at the ports. But there may also be deliberate discharges of oil and other wastes from ships. These may be particularly widespread in the absence of receptacles for such wastes at the harbour. Besides, construction work such as dredging may also have a polluting effect.

123. In the Comoros, a decree of 22 February 1935 organizes port and harbour operations. It contains some provisions aiming at the protection of ports and coastal environment. Thus, Article 33 prohibits dumping of wastes and other matters in ports and natural harbours, and ships cleaning operations within three miles off the ports. Immediate pick-up of dangerous goods is compulsory, their storage on the wharves being prohibited (Article 36). Imprisonment up to two years is envisaged against offenders as well as a fine, unfortunately not re-evaluated, of 500 CFAs (US $1.5, approximately).

124. The Kenya Ports Authority Act 1979 (Chap. 391 Laws of Kenya) establishes an Authority (Section 3) to be responsible for all construction and management of the ports and their operations. Under Section 8, the Authority is required, rather generally, to provide reasonable facilities for handling of cargo and other goods, and Section 9 requires the Managing Director to establish and operate port services and facilities. Both requirements can arguably be construed to refer to reception facilities for oil and oily wastes as well as for other wastes discharged after clean up. Section 72(1) empowers the Minister concerned to make regulations with respect to ships while taking on or discharging ballast or cargo or while provisioning.

125. Perhaps it was the recognition of the inadequacy of this Act or any other relevant law in Kenya to deal with pollution at the port, that led to the establishment of the National Anti-Marine Pollution Committee as an ad hoc inter-ministerial body to work out strategies for combating oil pollution emergencies within the territorial waters, exclusive economic zone and the proximity of Mombasa port.

126. Section 3 of the Mauritius Ports Act of 1st July 1976 establishes a Mauritius Marine Authority with powers to regulate fishing, navigation, dredging and pollution within the ports as well as within the entire twelve nautical miles wide territorial waters. The Authority is empowered, under Section 43, to make regulations for

purposes of the Act. The first set of regulations is still under preparation. Meanwhile, Mauritius has applied to ports the Shipping and Harbours Regulations (G.N. No. 28 of 1939, Chapter VIII) which deal with the loading, discharging and handling of dangerous goods within the limits of the harbour of Port Louis. Of further relevance to the ports is the Public Health Act of 31 December 1925, in which Section 34 extends to any ship or vessel lying in the river, harbour or creek of Mauritius and prohibits them from discharging wastes into the water.

127. In Seychelles, Harbours Regulations of 1933 made under the Harbours Act prohibit the discharge of any rubbish or ballast in the harbour (Regulations 17 and 18). It requires, under Regulation 41 that ballast shall be placed only at places designated by the Port Officer.

128. In Reunion, navigation in coastal waters and traffic in harbours is regulated by Executive Order no. 11/DAG.2 of 3 January 1975. Anchoring is covered by Executive Order no. 801/DAG.R/2 of 28 February 1979.

NATIONAL LEGISLATION APPLICABLE TO MARINE POLLUTION CAUSED BY EXPLORATION AND EXPLOITATION OF MARINE RESOURCES

129. The process of exploring, harvesting or extracting various marine resources may lead to pollution or degradation of marine environment. Such degradation may occur in different degrees whether it is the traditional exploitation of the living resources, notably fisheries, or the relatively recent extraction of mineral resources. In this section both aspects are examined.

Degradation of the environment through exploitation of marine living resources

130. Fishery legislation dealing with preservation of marine environment often fall into two broad categories. The first category deals with prohibition of certain fishing methods; the second one deals with the protection of certain species or sizes of fish in order to maintain the ecological balance of the environment. But not all national legislation covers both aspects.

131. In Madagascar, fisheries legislation is in the process of being modernized. Meanwhile, the basic texts on the matter, which still apply, are a decree of 1922 dealing with inland and coastal fisheries, and the Maritime Code of 1966. Put together, they constitute a fairly complete body of fisheries legislation dealing with virtually all conservation-related aspects. Explosives are prohibited, fishing zones are delimited, and fishing seasons are fixed. Provisions regulating or prohibiting certain fishing equipment and measures to prevent destruction of breeding grounds and to promote the conservation of fishery resources are all included. However, large parts of this legislation are in great need of modernization.

132. In the Comoros, the 1982 Act on the delimitation of maritime zones refers to the conservation of marine living resources. It calls in its Article 9 for the prevention of overexploitation of fishery resources, in co-operation with the sub-regional, regional and international organizations concerned. An act of 9 January 1852, still in force, prohibits the use of explosives and poisons in fishing operations. A decree of 1922 establishes the rules for marine species conservation. Under the new act of 1982 on foreign fishing boats, no foreign fishing boat is allowed to fish within the limits of the territorial sea (Article 2). Fishing activities in the EEZ are subject to the issuance of a licence which may contain the

period, the place and methods for fishing, and may also determine quotas. Under Article 21 of the Act, the Minister in charge of Fisheries may make regulations and adopt all necessary measures for the conservation of marine species, as well as for the determination of sanctions up to a maximum of 80 million CFAs (US $200,000) against offenders to the regulations on conservation. Central legislation is supplemented by local legislation. Thus, an order of the Governor of Anjouan Island, dated 8 October 1980, prohibits the use of tephrosia candida in fishing operations.

133. In Mozambique, a decree of 1972 regulates fishing activities. It establishes a licence system and provides details on permissible fishing methods and equipment. It is supplemented by regulations on crawfishes (regulations No. 50/71 as amended by regulations No. 34/72 of 1972), on underwater fishing (regulations No. 519/7) and on harvesting of seaweed (regulations No. 23651). Act No. 8/78 of 22 April 1978 regulates fishing activities of foreign boats. Article 9 establishes a maximum fine of 5 million escudos for any act which may be detrimental to the normal exercise of fishing rights, an act that Article 1(c) defines as the use of explosives, poisons or other harmful substances.

134. The Tanzanian Fisheries Act, 1970 (Section 7) empowers the Minister responsible for fisheries to make regulations, inter alia, prohibiting or regulating the use of any description of gears and of any poisonous or toxic substance for the purposes of fishing or for the capturing, collecting, killing or injuring immature fish; the Minister may also make regulations to prevent the pollution of territorial waters.

135. A French decree of 9 January 1852 on coastal marine fisheries still applies, as amended, to fishery resources in the coastal areas of Reunion. The Economic Zone Act of 16 July 1976 has extended its application to the Exclusive Economic Zone. A decree of 28 December 1912 prohibits all discharges into the sea waters to which the fisheries legislation applies, of substances likely to hamper fishery resources conservation or to make them unfit for human consumption. The Fisheries Act, 1954 (No. 54-902) makes provision for the regulation of fisheries in the overseas French Departments (Guadaloupe, Martinique, Guyane and Reunion). Executive Order no. 2862/DAG.R/2 of 21 July 1976 spells out the exact conditions under which fishing activities must be carried out in the coastal waters of Reunion. It was amended by Executive Order no. 4319/DAG.R/2 of 22 October 1979 and Executive Order no. 0263/DAG.R/2 of 28 January 1983.

136. On the prohibition or restriction of fishing methods, Tanzania adopted the Fisheries (Explosives, Poisons and Water Pollution) Regulations (G.N. 109 of 17.9.82). Under the same category one can mention the Seychelles (Spear Gun) Regulations, 1972 which focus on spear guns, fishing tackle, tackle and harpoons; the Mauritius Fisheries Act of 2 May 1980 (Revised Laws 1981 Vl. 2) which focuses on fishing with artificial light and use of explosives; and the Somali Maritime Code of 1959 which seeks to regulate and prohibit the use of explosives and electric current.

137. Regulation of the catches to given sizes or quantities for purposes of maintaining ecological balance are often instituted by licensing the use of certain gears and at times outright closure of special areas from fishing during given seasons. Under this category may be cited Regulation 18 of the Tanzanian Fisheries (General) Regulations, 1973, which empowers the Director of Fisheries, inter alia, to impose conditions as to equipment, appliances, instruments and nets as well as to declare closed periods for fishing of particular species. Similarly, the Kenya Fish Industry Act (Section 7) empowers the Minister to make regulations, among other things, to regulate the gears and manner of their deployment as well as to limit fishing seasons.

138. Legislation may also be targeted at specific types of marine species. For instance Seychelles, perceiving the dangers of possible over-exploitation of turtles, adopted the Turtles Act of 1925 (Cap. 141) which makes it an offence to catch undersized hawksbill or green turtles and female turtles. The Act also makes it an offence to kill female turtles and stipulates completely closed seasons for male turtles. (S I No. 43 of 1976). However, because turtles are highly migratory this is one of the instances where a co-ordinated effort at the regional level may be imperative.

139. In the Comoros, an Executive Order of 12 October 1965 established rewards for the capture of coelacanthe, a rare species of scientific importance. It resulted in an overexploitation of the coelacanthe stock, and on 12 February 1974, the coelacanth was declared a strictly protected species, by executive order. Its capture is now prohibited. As to turtles, decree No. 79-012 of 12 April 1979 prohibits their capture in "the territorial waters of the Comoros and adjacent international waters". Marine turtles are also protected by the laws and regulations of Mozambique. They appear on table II of regulations No. 117/78 of 16 May 1978, as a protected species. Their catch is prohibited and a fine of 50 thousand escudos is charged to offenders. These regulations were adopted under decree No. 7/78 of 18 April 1978 on hunting activities.

140. An instance of shell protection legislation was adopted by Seychelles by the Conservation of Marine Shells Act (No. 4 of 1981). The Act makes it an offence to remove shells from the "preserved areas" a number of which have been designated within and outside marine parks.

141. Some legislation in the region deals with the protection of marine mammals. An example in point is the Seychelles Marine Mammals Sanctuary Decree, 1979 (No. 28 of 1979) which establishes marine sanctuaries within parts of the territorial sea and the Exclusive Economic Zone of Seychelles. Seychelles is, together with New Zealand and the United States of America, one of the few States in the world to have introduced comprehensive legislation concerning the protection and conservation of marine mammals. The Decree makes it an offence to kill, chase, harrass or in any way take away whales, dolphins, porpoises or dugongs.

142. An executive order of 9 March 1939, which applied to Madagascar and the Comoros regulates the fishing of marine mammals. Although still in force, it has become obsolete.

143. In all cases the sanctions prescribed for violation of the regulation of methods of fishing are fines, imprisonment and in some cases, forfeiture of equipments or the catch. For instance Tanzania's Fisheries (Explosives, Poison and Water Pollution) Regulation, 1982, Regulation 4, prescribes on first conviction a fine ranging from ten to fifteen thousand shillings (equivalent to US $800 to 1200) and, in default, imprisonment for three to four years. On second and subsequent convictions the fine range rises to a minimum of twenty thousand shillings ($1600) or in default a minimum of five years in jail, or both. The trial court is also required to order forfeiture of all the catch, the vessel or other associated articles. The same regulation further prescribes that any person who explodes, cuts through, breaks down or destroys a coral reef using explosives or electrical devices shall be guilty of an offence and, on conviction, liable to a fine of twenty thousand shillings and to imprisonment for five years. The mere possession of dynamited fish anywhere in Tanzania is an offence punishable with sentences similar to the first case above. Possession of poison or its use in fishing activity, is an offence for which, on conviction, one suffers a minimum fine of five thousand shillings ($ 400)and/or imprisonment for nine months.

144. Where an individual, properly licensed to fish as in Regulation 18 of the Tanzania Fisheries (General) Regulations, 1973, is found in violation of the

conditions of the licence he may, on conviction of first offence, suffer a fine not exceeding ten thousand shillings and/or two years imprisonment. But on subsequent conviction the fine would be doubled while the prison term would rise to five years (Regulation 42).

145. Violation of Seychelles law protecting turtles carries a fine of one thousand rupees (approximately $400) or one year imprisonment. In the Comoros, the violation of the 1979 decree prohibiting the capture of turtles, is punished by a fine of 25000 CFAs (US $75) or 8 days of imprisonment. But violation of the Marine Shells Act (No. 4 of 1981) is punishable by a fine of five thousand rupees ($2000) or six months imprisonment. It is, however, the Marine Mammals Sanctuary Decree which Seychelles views with greater severity. Its violation carries a fine of two hundred thousand rupees ($ 80,000) or imprisonment for five years.

146. Fish and the other fauna discussed above have one major characteristic in common, namely, that they do not obey the limits of national jurisdiction. Some of the countries in the region may have stringent laws, but the effectiveness of the measures may be to no avail if there is no uniformity and co-ordination of such enforcement among all countries concerned. Therefore, for effective results, regional co-ordination and co-operation may, in some cases, be absolutely necessary.

Degradation of the marine environment by exploration and exploitation of mineral resources

147. Exploration and extraction of mineral resources from the marine environment ipso facto, disturb that environment. The gravity of the situation warranting legal intervention is a matter of degree, varying according to each specific ecological situation. Generally the most serious problems relate to discharge of oil from major blow-outs. In effect, most coastal States in the East African region have been busily prospecting for petroleum off their coasts, a process spurred by the high value of oil. There has been no major oil discovery in the region except perhaps in the Mozambican channel for both Madagascar and Mozambique. The latter may be the first to commence major oil production in the region since it signed an exploration and production agreement with Exxon and Shell oil companies in Texas on 4 June 1983 for an area of 13,000 square kilometres in the Ruvuma Basin, south of the Tanzanian border.

148. Besides oil production, there is also mining of hard minerals of various kinds ranging from the controversial manganese nodules to coal, sand and gravel. In these cases pollution may also be caused by tailings which are by-products of mining operations.

149. In most cases the national laws relating to mining in the countries under review have scanty provisions on the question of preservation of the environment. The emphasis is on government control of the production from an economic point of view. The Kenya Mining Act of 1972 (Chap 306 Laws of Kenya) which, incidentally, excludes mineral oil from its scope, vests minerals in the Government (S. 4) and under Section 6 requires licence for prospecting for all non-oil minerals in any land in Kenya. Similarly, Section 3 of the Mineral Oil Act of 1972 (Chap 307 Laws of Kenya) vests all mineral oils under any land in Kenya in the Government.

150. There is a corresponding Minerals Act of 1962 (Cap. 157) in the Seychelles which under Section 6, requires a licence for prospecting and mining. More specifically on petroleum Kenya, Seychelles and Tanzania have laws on oil mining and production. But the provisions relating to environmental protection are either scanty or general.

151. The Kenyan Oil Production Act adopted originally in 1962 (Chap. 308, Laws of Kenya) extends its application "to all land situated within Kenya, including that part of the sea-bed off the coasts of Kenya, and the subsoil thereunder..." All exploration, prospecting and drilling for oil is conducted only under licence wherein the Second Schedule to the Act stipulates the obligations of the licensee which include, inter alia, to prevent the escape of petroleum into any reservoir, estuary or harbour; to drain waste oil, salt water and refuse in proper manner; to control the flow and to prevent the escape and waste of petroleum extracted. In every case where mining for oil is completed, the licensee is required to plug the boreholes according to standards prescribed by the Commissioner of Mines and Geology. Paragraph 13 of the Second Schedule makes the licensee civilly liable for damage or injury to the property and rights of other parties which may be caused by the licensee himself or his agents.

152. The Petroleum Code of 1965, as amended by Law No. 80-001 of 6 June 1980, provides Madagascar with a comprehensive legislation on the subject, including the offshore exploration and exploitation aspects. Licences for exploration and exploitation must be obtained from the President of the Republic. The prospector must keep the area of exploration clean. Article 82 of the act of 1980 applies sanctions to whoever has polluted the sea during offshore operations by any substance listed in Article 3 paragraph 1 of the OILPOL Convention (oil and oil mixture).

153. The Seychelles Petroleum Mining Act (No. 3 of 1976) vests all petroleum deposits on land and on the continental shelf in the Republic. Section 4 of the Act requires that all exploration and exploitation of petroleum be done only under licence and any contravention is punishable with a fine of two thousand rupees ($800) for each day of the offence and the forfeiture of the petroleum and equipment used. It is through the licensing process that regulation of the conduct of oil production can be stipulated and ensured. Thus, Section 16 of the Act empowers the Minister responsible for oil production to issue orders for, inter alia, the protection of the environment; the taking of measures to avoid pollution and the taking of measures to protect shipping lanes and to provide for the general safety of shipping. Any contravention of such regulations carries a fine not exceeding ten thousand rupees for first offenders, or, on subsequent, continuing contravention, two thousand rupees for each additional day and/or imprisonment for six months.

154. The Seychelles Petroleum Mining (Pollution Control) Act (No. 18 of 1976) imposes civil liability for any pollution damage arising from oil mining operations. Section 4 makes the licensee civilly liable for any damage caused to land in Seychelles by contamination resulting from oil discharge; for the cost of any reasonable measures taken after the discharge for purposes of preventing or reducing damage to the land, and for any damage caused to the land in Seychelles by any measures so taken. Defence of the licensee will succeed if the discharge is caused by an act of war, hostility, insurrection or an exceptional, inevitable and irresistible natural phenomenon. (S.5). Because of the general risk associated with extraction of petroleum from the sea, section 10 of the act requires compulsory insurance against liability for pollution. But failure to secure the insurance is a criminal offence punishable by a fine not exceeding five thousand rupees for each day during which the offence continues.

155. Tanzanian Petroleum (Exploration and Production) Act, 1980 vests the control over petroleum in the United Republic. Exploration and production are carried out only under licence, which may be issued only on approval of the Minister in charge of petroleum resources. In the licence the Minister may require the licensee to undertake studies and investigation which may include an assessment of the potential impact of the petroleum industry on the environment. (Section 34). Additionally, the licensee is required, among other things, to control the flow, to prevent waste

or escape, of petroleum salt water, drilling fluid, chemical additive in the production area, and to prevent pollution of any water-well, spring, stream, river, lake, reservoir, estuary, harbour or any area of the sea.

156. The Exploration of Continental Shelf Act of 30 December 1968, as amended by an Act of 11 May 1977, establishes a permit system for all exploration and exploitation activities of marine mineral resources and oil resources. These activities are subject to the provisions of the Mining Code. Since the modifications brought to the Mining Code by an Act of 16 June 1977, mining claims may contain provisions aiming at the protection of sea water resources. The same Act requests he prospector, operator or contractor to prepare, at least once a year, reports on the State of the marine environment of the areas concerned. The application of sanctions is similar to that described in the texts dealing with marine pollution by oil from ships.

157. Laws on the mining of resources other than petroleum may also provide for significant protective measures. The Tanzanian Mining Act, 1979 which is concerned with hard minerals on land, including in the territorial waters and the continental shelf, allows for exploration and production under licence. Any application for the mining-licence must be accompanied by a Statement of programme of work including, inter alia, strategies for prevention or control of pollution, the safeguarding of fisheries and navigation, the progressive reclamation and rehabilitation of any land disturbed by mining and the protection of water quality, where relevant. Mining licences will be issued only where the programme and Statement are absolutely satisfactory. (Section 37 and 39). The Minister may make regulations concerning sanitation and health in the mining establishment and these may include disposal of wastes arising from the mining establishment.

158. There are other minor mining activities which might also degrade the marine environment. A well-known case is the removal of sand and gravel for which legislation has at times been warranted.

159. In the Comoros, Executive Order No. 80-44 prohibits sand extraction on beaches of touristic importance. It provides a list of such beaches. Violation is punished by a maximum of one month of imprisonment or by a fine of 100.000 CFAs (approximately US $300).

160. The Mauritius Removal of Sand Act, 1975 and the Seychelles Removal of Sand and Gravel Act, 1982 (No. 13 of 1983) are instances in point. Section 4 of the Mauritius Removal of Sand Act empowers the Minister in charge of lands to designate an area as a sand quarry or a sand landing place, with their specified limits, and prohibits removal or landing of sand at such places except when authorized by licence. The licence is issued only to registered sand dealers. Section 8 prohibits removal of sand at a place other than at the designated sand quarry or sand landing places. Violation of these conditions is an offence punishable by a fine not exceeding one thousand rupees and/or imprisonment for a maximum term of one year. Besides, the trial court may also order the forfeiture of any sand or vehicle used in the unlawful transport of sand.

161. In Seychelles constructors once used coral blocks from reefs for building operations. The ban on that led to indiscriminate removal of sand from beaches and gravel from river mouths. This led to disturbance of the marine environment to the extent and kind now noticeable along the coast, at least for sand. Seychelles adopted the Removal of Sand and Gravel Act, 1982 which makes it an offence to remove sand or gravel without licence. Such a licence then stipulates conditions, including the quantity of sand which may be removed. Collecting sand or gravel without licence or in violation of the conditions specified in the licence is an offence punishable by a prison term of six months and ten thousand rupees.

162. In Reunion, Executive Order no. 1110 P.C. of 5 December 1949 regulates extraction of sand, stones and other materials from the sea-shores.

NATIONAL LEGISLATION APPLICABLE TO MARINE POLLUTION FROM LAND-BASED SOURCES

163. More than half of all the pollution of the marine environment originates from land based sources. The various components of such pollution include wastes from industrial and commercial establishments; municipal and domestic wastes; loads of various kinds washed from agricultural lands; and silts and sediments due to inland and coastal erosion. In the majority of the cases the waste loads are transported by rivers into the sea. Marine pollution from land based sources is inextricably linked to other fundamental development needs such as public health and sanitation. In the case of East African region where soil erosion and sedimentation reaching marine area is one of the most critical marine pollution problems, conservation of agricultural land and water catchments is one of the fundamental development imperatives linked to marine pollution prevention and control.

164. Clearly, one may speculate that if all these fundamental development imperatives were effectively catered for through legislation and efficient enforcement, a good deal of marine pollution would be prevented. Unfortunately there are sectors largely neglected by legislation. In a number of cases, policy and general administrative measures have been enunciated in an attempt to meet the development imperatives, without any conscious or deliberate effort to control marine pollution. For example, in both Kenya and Tanzania, soil and water conservation have become national issues taken at the highest level of government. In Kenya the President established, within his Office, a National Commission on Soil Conservation and Afforestation whose role has been to mobilize the public for soil and water conservation. Similarly, in Tanzania, the Cabinet has strongly supported the campaigns by the Minister for Lands, Housing and Urban Development to increase afforestation, stop soil erosion and increase water conservation, among other environmental problems. It set up a National Environment Council through legislation in June 1983.

165. A similar philosophy has been adopted by the Government of Mozambique which, conscious of the high value of water for its development, has mounted a major public education campaign on the importance of water and soil rational management and conservation. As will be pointed out again below, a new water resources bill was drafted but has not been presented to Parliament. Emphasis on rules and their strict enforcement will be productive only after the population has been educated and has understood the management goals which the legislation is intended to achieve.

166. Rudimentary provisions exist which can be outlined under the broad categories of land-use planning legislation; and water resources legislation.

Land use planning legislation

167. The Kenya Land Planning Act (Cap. 303, Laws of Kenya) provides that a person proposing to undertake a construction, which constitutes a change in land use, is required to apply for consent by the local planning authority. The authority is to take into account national policy priorities in assessing the application, and environmental considerations should arguably be part of the decision-making process.

168. Land-use planning legislation is well developed in Madagascar. The forest cover is protected by several provisions of a decree on forests of 1930, and of an executive order of 14 January 1937. Forest fires are dealt with in Ordinance No. 60-127 of 3 October 1960 and in Decree No. 61-079 of 6 February 1961. These latter two texts also regulate clearing of forests. Clearing of forests is prohibited in protected areas, on steep slopes, on fragile lands, on riversides, and on the coast. Sanctions, as determined by Ordinance No. 76-030 of 21 August 1976 are extremely heavy, up to twenty years of imprisonment.

169. In Mozambique, Article 6 of the Lands Act of 1980 makes it an obligation for all land users to take appropiate measures to conserve and improve land fertility, and to protect soils against erosion (paragraph 3). Paragraph 4 of the same article, stipulates that industries must take measures to avoid land and water pollution. Under Article 24, fully protected areas may be created in the most fragile zones, while Article 26 envisages the possibility of partially protected areas. A comprehensive forest and national parks legislation is about to be adopted.

170. In the small islands of the region, to differentiate between coastal and marine protection on one side, and land-use planning on the other side, would be particularly artificial. On a small island, any action which affects the land has an immediate impact on the coast. It is therefore proper to refer here to all provisions governing land-use in the Comoros, Mauritius and Seychelles. In the Comoros, the exploitation of public forests is done under licence only, in which conservation measures may be prescribed (decree of 25 January 1930 on State property). Offences are punishable by imprisonment up to 3 months for exploitation without authorization, and up to 5 years for intentional damages caused to re-afforestated areas. Clearing is prohibited on steep slopes, coastal sand dunes and fragile lands. Provisions on forest fires prevention are similar to those applying to Madagascar. Domestic waste disposal is covered by an Act of 15 November 1927 which institutes a system of garbage collection in the towns. In the villages, Article 15 of the Act imposes the creation of pits to bury domestic wastes. However, the practice in the major settlement of the country, and in Moroni in particular, is very much to use the sea as the favourite dumping ground. Thus, several Statements of the administrative authorities concerned testify to dumping operations at sea or on the coast, of vast quantities of rotting matters, in spite of a municipal order of 1 July 1967 prohibiting dumping on State property.

171. The Seychelles Town and Country Planning Act of 1972 (Cap. 160) similarly regulates development of land including establishment of industry, tourist resorts and agriculture, according to the existing national development plan. The latter aspect of the law gives significant flexibility to the responsible authorities to take into account matters of current policy concern. Section 3 of the Act established the Town and Country Development Authority which decides on the applications and which may, on granting permission for development, impose conditions which should, presumably, include environmental standards. The Authority, for instance, sets standards for the number and size of hotels that may be built along a given coast. One of the present standards is that no permission will be granted to build on a coastal strip less than one hundred feet wide and at less than forty feet from the high water mark. The Act also requires the Authority to set effluents standards to control discharges into the sea from hotels and industries. Owners of Land bordering the high-water mark may apply under the Land Reclamation Act, 1961 (Chap. 152) to reclaim from the sea that part of the foreshore adjoining their property. It was discovered that some of the fill used contained organic and other toxic matter which, with time, would percolate the reclamation walls and pollute the sea. Consequently, the Town and County Planning Authority considering applications under Section 2 now requires specification of the content of the fill to be used.

172. In Tanzania under Section 3 of the Township Ordinance the Minister responsible for local government makes rules for health, order and good government. The Township Rules (Chap. 101 Supp.59), empower the Health Officer to enter and examine premises for any nuisance or sanitary reasons. Rules 23 to 29 specifically deal with control of disposal of wastes and water pollution. Any discharge which causes water pollution under this Act is punishable by a fine of forty shillings ($ 3) for each day that such pollution continues.

Water resources legislation

173. In Kenya, under Section 3 of the Water Act, 1972 (Cap. 372 Laws of Kenya) the water ownership is vested in the Government and Section 4 directs the Minister for water resources to control every body of water, including for conservation purposes. In fact, the Minister may declare an area a protected catchment area to facilitate regulation of water use and catchment conservation (Section 4) which includes control of soil erosion. Violation of that provision is an offence punishable by a fine not exceeding ten thousand shillings.

174. The accent has up to now been largely put on the quantitative considerations. Quality is left for the initiatives of the Water Quality and Pollution Control Division of the Ministry. The same Division enforces Section 158 of the Act which says that "Any person who, by any act of neglect, causes any source of water supply, the water of which is used or is likely be used for human consumption or domestic purposes, or for manufacturing food or drink for human consumption, to become polluted, or likely to be polluted, shall be guilty of an offence". Thus, the qualification relating to "human consumption" seem to exempt outfalls draining directly into the sea from the control under this section. Also, it does not cover ocean water which is neither consumed by man nor used in manufacture of drinks. Rules relating to "protection of fish and fish food" may be made by the Minister in exercise of his powers under Section 182(1).

175. Rule 72(1) of the Water (General) Rules prohibits discharge into any body of water of any effluent which containing matters "poisonous or otherwise likely to be injurous directly or indirectly to public health, to livestock or crops, or to orchards or gardens irrigated with such water or to any product for which such water is used in any process whatsoever". It further prohibits discharging such effluents if they contain silt, gravel or boulders in excess of that normally carried by the body of water. Paragraph (2) of Rule 72 makes it an offence to violate the Rule, punishable by a fine not exceeding one thousand shillings or, in default, imprisonment for three months. The important hitch in this Rule, however, is that it seems to have been specifically targetted at water which has been abstracted for any works or any process and is "returned to the body of water". There may be a need for a more general provision to prohibit any form of outfalls or any discharge of effluents.

176. In Mauritius, Section 87 of the Rivers and Canals Act of 1863, (Revised Laws 1981 Volume 5) prohibits the discharge in any manner, into a river, canal, pipe or other conduit discharging into a river or canal, any scums, residue, refuse, washings or any other dirty waters or other liquid that may tend to pollute the water. Whoever violates the provision shall be guilty of an offence punishable by a fine not exceeding one thousand rupees. On application by the relevant Permanent Secretary in the Ministry of Health, a judge may issue an injunction to restrain such a person from discharging wastes in that manner, but for over fifty years now there has been no record of an application of this nature.

177. In Mozambique, statutory order No. 90/71 of 22 March 1971, deals with water pollution control. Both inland and marine water resources are covered. It is

forbidden under Article 1 of the statutory order to dump into the waters any effluent or polluting substance, without having first obtained a permit.

178. Somalia water law vests the ownership in the Government and provides that every person has the right to use water. Water pollution or damage of any public watercourse constitutes an offence.

179. As in the case of Mauritius, Seychelles water quality control is linked to the Ministry of Health, under the Public Health Act, 1960 (Cap. 194) which provides for promulgation of Regulations to control nuisance and pollution. The Washing Limits Regulations made under the Act designate parts of rivers and streams within which people are permitted to wash their linen. Violation of the Regulations is an offence punishable by a fine not exceeding one hundred rupees. Seychelles adopted the North Mahé (Pollution of Beaches) Regulations on 3rd April 1950 which prohibit disposal of any fish, fish offals, fish guts and any other part of fish on specified beaches of North Mahé except in receptacles provided and marked by North Mahé Local Board for that purpose. Violation of the rule is an offence punishable by a fine not exceeding fifty rupees. These Regulations could have important implications. It is understood, for instance, that one of the serious marine pollution problems off the Mozambique Channel is the disposal of large loads of fish heads thrown out by long distance factory ships fishing in the area. Finally, Seychelles adopted the Health and Sanitation (Prevention of Defilement of Rivers and Streams) Regulations on 21 January 1970 (S.I 4 of 1970) which prohibits the construction of a house, kitchen, latrine, stable, pig-sty, distillery or other manufacturing premises within fifty feet of any river or stream except under and in accordance with the conditions determined by licence granted by a Medical Officer of Health. Violation of the Regulation is an offence punishable with a fine of one thousand rupees.

180. Water resources in Tanzania are covered by the Water Utilization (Control and Regulations) Act, 1974 whose Section 8 vests all Tanzanian water in the United Republic. Utilization of the water, including quality control, falls under the powers of the Water and River Basin Boards which may grant licences. Section 33(4) makes it an offence for any person to pollute the water in any river, stream or watercourse or in any body of surface water to such an extent as to be likely to cause injury directly or indirectly to public health, to livestock or fish, to crops, orchards or gardens which are irrigated by the water or to any products in the processing of which such water is used. Any person who pollutes, commits an offence punishable by a fine not exceeding two thousand shillings and/or imprisonment for twelve months. It is implied that the person is expected to stop the polluting activity forthwith because on subsequent conviction the fine rises to five thousand shillings and/or two years imprisonment. In every case that the offence is found to continue there would be an additional fine of one hundred shillings for every day during which the offence is continued.

181. The concept of pollutant, not defined in the foregoing parent legislation, was later defined in the Water Utilization (Control and Regulation) (Amendment) Act, 1981 which was intended "to make better provision for the control of pollution of water". A pollutant is defined as "any substance or characteristic, whether or not harmful, added or imposed onto natural or supplied water". Effluent is defined to include "any flowing-out or fluid material discharged from domestic or industrial waste systems which, by reason of its quality, quantity or characteristics, is likely to impair the beneficial use of receiving waters by adversely affecting their natural State". The concept of pollutant should therefore be read and understood in juxtaposition to that of effluent, and to the specification of the offence in Section 33(4) in the parent legislation. The First Schedule to the 1981 Amendment determines the discharge standards for receiving water, while the Second Schedule provides for effluent standards according to each substance.

182. The third Tanzanian legislation on water resources is the National Urban Water Supply Act, 1981 which regulates the supply of water to urban areas. It is expected to apply within the framework of the Water Utilization (Control and Regulation) Act, as amended. In addition, Section 20(1) of the National Urban Water Supply Act empowers the National Urban Water Authority, established under Section 4(1) to make rules relating to water hygiene which includes, inter alia, protection of water against pollution. Discharge of polluting effluents carries a penalty considerably higher than under the national Water Utilization Act viz: a fine up to twenty thousand shillings and for every subsequent or additional day that the discharge continues, an additional one hundred shillings.

183. The Rufiji Basin Development Authority Act, 1975 is relevant here to the extent that it provides among its functions for flood control (Section 6(b)). This provision could significantly protect from erosion agricultural lands in Mbeya and Ruvuma Regions. Erosion could cause silt from the fields to pollute the Indian Ocean through sedimentation.

184. The Water Act of 16 December 1964 covers water pollution control in France, and consequently in Reunion. It applies to all inland, internal and territorial waters. No discharges into the waters may be effected without licence. Economic incentives are emphasized in the Act. A large number of secondary texts supplement the 1964 Act. This rather comprehensive body of water legislation and regulations is reinforced by special legal texts for pollution control from industrial and commercial activities. The Environment Protection Act (Classified Installations) of 19 July 1976, and its Decree of 21 September 1977, elaborates on the strict permit system already established for industrial and commercial installations in 1917. Detailed ministerial and prefectoral orders and bulletins specify the exact conditions of operation for each Department.

185. The Departmental Health Regulations of 9 August 1978 deal with domestic waste waters and sewage. There are also provisions for sanitary equipment for marinas. Urban sewage is covered by a Bulletin of 10 June 1976 on Sanitation in Urban Centres. Lastly, the Executive Order of 7 May 1974 on beaches and coastal zones opened to the public, makes it compulsory to provide these areas with liquid waste disposal systems.

NATIONAL LEGISLATION ON CONSERVATION AND PROTECTED AREAS

186. National Legislation may seek to protect and conserve areas of the sea within limits of national jurisdiction.

187. In Kenya, Section 15(1) of the Wildlife (Conservation and Management) Act (Cap.376 Laws of Kenya) authorizes the Minister in charge of wildlife to establish a nature protection area where he is "satisfied that it is necessary, for ensuring the security of the animal or vegetable life.....or for preserving the habitat and ecology of such area". The notice establishing the protection area may then specify the acts which are prohibited, restricted or regulated in the area (Section 6(1)). To date five such areas, known as National Marine Parks have been established at Malindi, Watamu, Kiunga, Kisite and Mpunguti in Kenya's coastal waters.

188. In Madagascar, local authorities in charge of environment protection may delineate special areas for sand dunes conservation and coastal protection. The forestry texts contain provisions for the protection of mangroves.

189. In the Comoros an executive order of 5 August 1932 organizes the protection of mangroves, under a licence system. Mangroves of less than 15 cm in diameter at the junction point of the roots, cannot be cut.

190. In Mozambique, the Land Act of 1980 recognizes two categories of protected areas: those with full protection and those with partial protection. In the first category only conservation activities are allowed. Such zones may be created for the purpose of soil, flora and fauna protection, and there is no doubt that marine or coastal parks may be included in the category. In the second one, all kinds of activities may be tolerated as long as they are not incompatible with conservation needs. The Act gives a list of partially protected areas, which includes: the territorial sea-bed and continental shelf, small islands and reefs.

191. In Mauritius such powers may be assumed under the Town and County Planning Act of 1954 under which a local authority may declare a given area a planning area. This power has not been utilized in protection of marine parks but in the absence of a specific legislation it could be broadly construed to protect areas in urgent need.

192. The Seychelles National Parks Conservancy Act, 1969 (Cap. 159) was drastically amended in 1982 by Act No. 19 which established the Seychelles National Environment Commission. The Commission, chaired by the Minister in charge of environmental affairs, has the responsibility to draw up and implement policies on protected areas. Among the powers of the Commission under the Act is the designation of marine reserves and parks, and in each case the adoption of regulations applicable to the situation. So far, marine parks have been declared on the East Coast of Mahé; at Port Launay Bay and Cape Ternay Bay; at Curieuse Island Park, off the coast of Praslin; and at Aldabra. In all these cases the regulations are similar in structure and scope. Generally, they limit the use of boats and pleasure crafts within the park area; it is an offence to disturb marine environment, to take living or dead species therefrom and to litter or pollute the parks. Fishing restrictions apply in the parks. Contravention of the regulations carries a maximum fine of two thousand rupees and/or three months imprisonment.

193. Somali Law No. 15 of 25 January 1969 protects national parks from inter-alia, wilful and negligent injuring or removal of trees, shrubs, seedlings, except under permit issued by the Minister for Livestock, Forestry and Range (Section 7). This is clearly a law designed for forestlands but could arguably have some application to the marine parks as well.

194. Under Section 5(1) of the Tanzanian Wildlife Conservation Act, 1974 the President of the Republic may declare an area to be a game reserve. The President may also issue an order specifying all standards of conduct within such a game reserve. At the same time, the Minister responsible for wildlife may, under Section 6, declare an area to be a game controlled area. Entry within such premises is allowed only under a licence issued by the Director of Game. Entry without licence or in violation of the conditions stipulated in it is an offence punishable by a fine of five thousand shillings and/or six months imprisonment. Possession of firearm or bow and arrow within the game reserve or game controlled area without written permission of the Director of Game is also punishable by a fine not exceeding five thousand shillings and/or twelve months in jail. Section 70 of the Act shifts the burden of proof to the accused: in any proceedings for the offence of unlawfully hunting, wounding, killing or capturing of an animal within the game reserve or game controlled area, it shall be for the accused to prove that the animal was killed, captured or wounded in accordance with the terms of the licence previously granted. Any person who provides information leading to the conviction of the accused is to be awarded a sum of money in amount proportionate to the fine imposed, the value of trophy forfeited or three thousand shillings, whichever is smallest.

195. The Nature Protection Act of 10 July 1976 of France (which applies to Réunion) deals with overall environment protection, including natural resources, flora and fauna protection and ecosystems conservation. It introduces the Environmental Impact Statement (EIS) procedure. Details on EIS are spelt out in a decree of 12 October 1977, as well as in twelve ministerial orders, one for each type of physical development.

196. The establishment of parks and protected areas is provided for in an Act of 22 July 1960. This Act makes provision for the creation of two types of protected areas: the park itself with a highly protected core, and the buffer zone. No specific legislation exists on marine parks although draft bills have been circulated recently (Le Monde of 5 August 1983) which may cover this technique of costal and marine protection. Criteria for the creation of protected areas are listed in the above-mentioned Nature Protection Act, 1976. In 1975, a conservatoire for coastal areas and lake-shores was established. It steadily buys, despite limited resources, fragile lands on sea and lake shores. Thus, it bought five pieces of property in Reunion, of various sizes (from 4 to 360 ha.). An institution, approved by a decree of 25 August 1979, restates for coastal zones several provisions for nature protection and land-use planning.

197. Protected areas have been created in Reunion. Indeed, Executive Order no. 1905/DAG.R/2 of 25 May 1976, supplemented by Executive Order no. 4666/DAG.R/2 of 17 November 1978, declares all lagoons of the island and the area from Cape Houssaye to Etang-Salé on marine reserves where all fishing activities are prohibited or strictly regulated on a rotation system, the latter area being divided into three zones. Lastly, Executive Order no. 1486/DAG.1 of 9 June 1969 prohibits the collection of corals in all lagoons of the island, and Executive Order no. 1904/DAG.R/2 of 25 May 1976 regulates underwater fishing along the coasts of the island.

INSTITUTIONAL FRAMEWORK

198. The foregoing discussions on national legislation give a fair indication of the array of institutional and administrative machinery for the control of environmental matters. One point which is particularly apparent is the wide range of government ministries, departments and statutory bodies involved in one way or another. This diversity of agencies has partly to do with the environmental problems themselves leading to the specific problem of pollution. Environment protection may be just another expression for natural resources management. For instance, if proper management strategies are adopted for soil and water catchment conservation, the soil erosion resulting in siltation, which is a problem of marine environment, would be prevented. This can be promoted through management involving agricultural practices, water resources management, forestry conservation and afforestation schemes, physical planning and settlement schemes, among others. Similarly, prevention of marine pollution by industrial and municipal wastes might involve emphasis on protection of drinking water as an indicator and prerequisite of development. In the same sense, protection of fishery and other marine living resources constitutes protection of a source of food proteins required for development. Each type of institutional and administrative machinery suggested in the study should therefore co-operate in one way or another with at least one other institution.

199. As already mentioned in the previous chapter, in small islands like Comoros, Mauritius and Seychelles it is quite artificial to differentiate between the marine

and coastal environment on one hand, and internal environment on the other. It is essential to look at the complete institutional set-up for environment protection in general.

Comoros

200. In the Comoros, environment protection is one of the main responsibilities of the Ministry of Equipment and Environment established by Decree No. 82-0/2/PR of 1982, and more particularly of the Department of Environment and Urban Planning within this Ministry. Environmental matters are also of immediate concern to the Ministry of Agricultural and Industrial Production, instituted by Decree No. 81-0177 of 1981 which has a Department of Oceanography and Marine Fisheries. The Secretariat for Transportation and Tourism has a Department for Marine Transportation. The National Ports Office which was created by an Act of 1981 (No. 81-37) as amended by Act No. 82-25 of 19 November 1982 is in charge of ports and harbours management in the country. Lastly, two inspection brigades for the coasts, have been created by two decrees of 1981 (No. 81-047 and 81-048), the first brigade is based in Moroni in Grand-Comoro Island, and the second at Mutsamudu in Anjouan Island. At the local level, an Executive Order of 1979 (No. 79-001/GIG-CAB) instituted the Economic Development Office of Grand-Comoro Island, which has a Division for Tourism and Environment. In Anjouan Island, an Office for Public Equipment, Urban Affairs and Environment, was created by Executive Order No. 81-35/GN of 1981.

France (Reunion)

201. In Reunion, a representative of the central Secretariat of State for Environment, is attached to the Prefecture of this French Department. The Secretariat of State for Environment, directly attached to the Prime Minister, is composed of the following six divisions: Pollution Prevention, Nature Protection, Quality of Life, Economic and International Affairs, Studies and Research, and Urban Affairs and Landscapes. Reunion also has local services, decentralized from the following relevant central ministries: Agriculture, Health, Equipment, and Industry. The Museum of Natural History of St. Denis, is particularly active in the protection of marine species.

Kenya

202. Kenya has established a ministry for environment. Following the Stockholm Conference in 1972, Kenya established the National Environment Secretariat, within the Office of the President, to serve as an information clearing house as well as to do some rudimentary co-ordination work on environmental matters. That Secretariat remained in the Office of the President until a Ministry of Environment and Natural Resources was established in 1979, after which, the Secretariat effectively became a department within the Ministry. The Kenyan Ministry is responsible primarily for standard-setting on general environmental matters not primarily the concern of other Ministries such as agriculture, health, water and land. Where these ministries have a primary concern, the Ministry of Environment and Natural Resources plays a co-ordinating role. Only forestry and minerals are the natural resources that come directly under the Ministry in Kenya; game and wildlife, including fisheries, fall under the responsibility of a different ministry.

203. The Inter-Ministerial Committee on Human Environment is composed of all the government ministries and statutory bodies whose functions include primary responsibility in matters related to environment. The Committee is convened by the

National Environment Secretariat as a substantive department of the Ministry responsible for environmental affairs. It discusses policy issues related to environmental problems and makes recommendations thereon. The New Projects Committee is particularly concerned with commercial and industrial establishments. It receives applications and deliberates on proposals for installations and on the physical and economic aspects of projects. However, in general it defers the environmental aspects, such as impact on water quality, to the Water Quality and Pollution Control Section of the Ministry of Water Development. The Kenya National Anti-Pollution Committee works on strategies for combating marine pollution incidents within the Mombasa harbour area, the territorial waters and the exclusive economic zone. Convened by the National Environment Secretariat, the Committee is comprised of a selected range of government Ministries, parastatal bodies, Kenya Navy, and non-governmental organizations such as beach hotels, all with a basic interest in the protection of coastal waters from pollution. The central purpose of the Committee is to pool resources in readiness to combat any oil spill within coastal waters or at the harbour.Regular control of water use from the quantitative and qualitative perspectives is, in Kenya, the duty of the Water Apportionment Board established under Section 25 of the Water Act. The Board deliberates and decides whether or not to issue a permit to an applicant for water use for any purpose.

204. The Kenya Marine and Fisheries Research Institute established under the Kenya Science and Technology Act, 1977 (Act No. 3 of 1977 and No. 7 of 1979) is administratively located under the Ministry of Regional Development, Science and Technology. The general framework of its operations is decided by the National Council for Science and Technology operating as a technical body within the Ministry. But in precise terms its operations are overseen by a Board of Management and a Natural Science Advisory Research Committee. The mandate of the Institute is to conduct research toward formulation of the best management strategies for marine resources. Initially, its work was inclined toward fisheries research but it has broadened its practice to include some research in geological sciences. Its headquarters are at Mombasa where it is equipped with laboratory facilities for its work. The potentials of this Institute as a centre for systematic monitoring of environmental quality as well as advisory services on protection or discharge standards are considerable. In this regard it has a parallel in the Zanzibar-based Tanzanian Fisheries Research Institute which was the seat of the East African Marine and Fisheries Research Institute until the dissolution of the East African Community in 1977.

Madagascar

205. In Madagascar, marine and coastal environmental matters are handled by each sectorial ministry concerned, namely: Ministry of Transport, Ministry of Agricultural Production, Ministry of Finance, Ministry of Higher Studies and Scientific Research, and Ministry of Defence. The various corps attached to these Ministries participate in pollution control activities. Thus, marine officers of State vessels who belong either to the Ministry of Defence or to the Ministry of Transport, the captains of State airplanes, and the customs officers have special responsibilities to report marine pollution by oil; for land-based pollution, the forestry guards and the police are empowered to prosecute offenders.

Mauritius

206. In Mauritius environmental matters once belonged to a broadly packaged Ministry of Agriculture and Natural Resources. This was recently changed when the Ministry of Housing, Lands and the Environment was established. Within this setting, the "Environment" department performs a co-ordinating role with the relevant Ministries

such as Health, Fisheries, Agriculture and Ports, which handle the primary responsibilities.

Mozambique

207. As no national report was submitted for Mozambique there was not sufficient information available to prepare a description of the institutional framework in that State.

Seychelles

208. In October, 1982 Seychelles established the Seychelles National Environment Commission by Act No. 19 of 1982 which amended the 1969 National Parks and Nature Conservancy Act (Chap.159). In the amendment, Section 3(1) of the Act established the Commission with three principal objectives, derived from the World Conservation Strategy, and outlined in Schedule 2 to the Act as follows: (a) to maintain essential ecological processes and life-support systems; (b) to preserve genetic diversity; and (c) to ensure the sustainable utilization of species and ecosystem. Section 3(3) specifies the functions of the Commission as: (a) to draw up national policy for the environment and to keep that policy under review and revise it from time to time as necessary; (b) to keep under review all written laws concerning the environment and its conservation and management; (c) to co-ordinate all activities, including activities of the Government, concerned with conservation or management of the environment; (d) to promote public education and participation in the study and conservation of the environment; (e) to co-operate with other countries of the Indian Ocean region in the conservation or management of the environment and living resources of the region; (f) to co-operate with international organizations for the conservation or management of the environment or its living resources; (g) to fulfil the functions given to it by or under this Act; and (k) to undertake such other activities in furtherance of these functions as the Minister may allow. According to Schedule 1 introduced by amendment, the Commission, to be chaired by the Minister, shall be composed of "not less than 5" members, appointed and gazetted by the Minister himself.

209. The National Research and Development Council was established under the National Research and Development Act, 1980 (Act No. 20 of 1980), as a division of the Ministry of National Development. At the moment the Council is carrying out studies on alternative energy resources in Seychelles. However, it is planned that as soon as resources so permit, its scope will be expanded to facilitate its operation as a laboratory for monitoring and as a control centre on environmental matters, especially pollution. It is anticipated that the laboratory could be used on a regional basis, should an agreement to that effect be worked out.

210. The EEZ Control Unit of Seychelles is within the Air Wing section of the Ministry of Youth and Defence. It is equipped with one Marine Surveillance Aircraft for conducting daily visual surveillance of the territorial waters, and occasional patrol of the Exclusive Economic Zone, especially to enforce the Foreign Fishing Vessel Decree of 1979. It is also required to conduct surveillance for possible oil pollution in the vicinity of Seychelles. Lastly, the Seychelles Fire Department has a small unit for pollution control in case of an important accident.

Somalia

211. Somalia, with neither a central agency nor a Ministry of Environment, maintains the following institutions which provide advisory services to the government on

marine resources management, including conservation standards and necessary government measures: the National Fisheries and Maritime Institute; Faculty of Marine Science and Oceanology within the Somali National University; the Mogadishu Technical Institute; the Marine Research Centre (at the planning stage). The Ministry of Agriculture is, for the time being, the focal point for environmental matters.

Tanzania

212. Tanzania has decided, as a matter of policy, to take a central co-ordinating agency approach in environmental matters. At the moment, central environmental affairs are handled in the Ministry of Lands, Housing and Urban Development, but on 5 June 1983, the Minister announced that the Ministry was proposing a Bill to Parliament which, if adopted, would establish a "National Environment Council with powers to identify problems and direct responsible institutions on how to deal with the situation". (Sunday News 5 June 1983). An Inter-Ministerial Committee on environmental matters is convened from time to time to draw up general or specific policies on environmental issues. It also co-ordinates, as appropriate, activities with a bearing on environmental matters. At times the Committee has organized visits to various agencies or locations in the country to assess practical aspects of environmental decisions. Currently it is also involved in the national campaign to enhance public awareness of soil erosion and deforestation problems as well as soil and water resources conservation.

213. The Tanzania National Scientific Research Council Act, 1968, established a Council to undertake research in agriculture, industry, commerce and mining as well as any other related sectors. Even though the Act does not specifically refer to environmental questions, these should be covered by the notion of efficient working of agriculture, industry, mining or commerce, as the case may be. The Council can, therefore, be a source of advice on environmental guidelines or discharge standards. The Tanzania Industrial Research and Development Organization (TIRDO) Act, 1979 set up an Organization whose functions include providing the Government and other bodies with advice and assistance on technical facilities for industrial enterprises so as to improve performance, to carry out applied research and investigation into ways of abating and preventing pollution from industries. The Tanzania Fisheries Research Institute Act, 1980 established an Institute for the promotion and conduct of research in fisheries. Its functions are, inter alia: to carry out research in various aspects of fisheries for purposes of improving techniques in fisheries development and ways of abating and preventing marine pollution. Its main laboratory is located at Zanzibar. It has a high potential for serving the East African regional programme in establishing standards for marine pollution control. The Tanzania Agricultural Research Organization Act, 1980, established an Organization to advise on strategies for enhancing agricultural practice. This should include, inter alia, soil and water catchment conservation strategies and advice on strategies for retaining agricultural inputs on the farmlands to prevent pollution of waterways and, eventually, of the sea by fertilizers and pesticides. The Tanzania Forestry Research Institute Act, 1980, established an Institute which would contribute significantly to soil and water catchment conservation strategies. The Tanzania Tropical Pesticides Research Institute (TPRI) Act, 1979, established an Institute which has carried out research on the impact of various pesticides on the environment.

PART III: EVALUATION AND CONCLUSIONS

EVALUATION

214. This review of national legislation on marine and coastal environment shows a number of positive features. First of all, it is undeniable that the governments of the region are fully aware of the importance of the problem and are determined to solve it at the national and regional level. In several countries, such determination has already led to the establishment of administrative machinery to deal with degradation of the marine environment.

215. However,numerous obstacles have yet to be overcome. Some countries of the region limit their action to point-by-point operations by some sectoral Ministries, with no comprehensive, integrated policy on environment protection. Considerable gaps are to be found in many national laws. Better exchange of information could no doubt help, and a regional framework for such functions would be particularly useful.

216. In general, the control of harmful effects always involves a very large number of ministerial departments whose activities have to be co-ordinated. This is a difficult problem regardless of the degree of a country's economic development, but it is even more difficult to solve in developing countries. Coordination raises two difficulties. On the one hand, several countries of the region have not yet set up the necessary interministerial machinery. On the other hand, the creation of particularly complex and ambitious co-ordinating structures may prove too cumbersome in practice. While it is desirable in theory that all the administrations concerned be represented in the co-ordinating agency, in practice this option may turn out to be too unwieldy and may hamper the drafting of a consistent and effective policy in a relatively short time. These difficulties in organizing activities are all the more acute as, under present training conditions, there is a general shortage of administrative and technical personnel specialized in environmental matters. The inadequacy of human resources is accompanied by a shortage of material resources for prevention and control. The agencies concerned are limited in their activities due to inadequate legal basis.

217. At their Workshop held in Mahé, Seychelles from 27 to 30 September 1982 (UNEP/WG 77/4, 1982) the experts from the States of the East African region identified some specific national marine environment problems which are of priority to some of the individual States. It is instructive in this section to outline those problems, according to the countries, and to juxtapose against them the scope of relevant national legislation available for dealing with the problems. No such problems were outlined for France, Kenya and Mozambique, as their experts did not participate in the workshop, and consequently, those States will not be addressed in this section.

218. Obviously the Mahé report did not aim to be exhaustive. It simply identified priorities. Many other issues, though not necessarily high priority ones, could have been listed as environmental problems which also need a legal response.

219. Everywhere in the region national legislation needs to be adjusted to harmonize it with the provisions contained in the United Nations Convention on the Law of the Sea, adopted in Jamaica in December 1982.

Comoros

220. For the Comoros, the Mahé report identified two priority action areas for the protection and development of the marine and coastal environment of the country: (1) the destruction of coral reefs and taking of sand to produce lime for building, and the associated deforestation to produce the firewood needed for the process; (2) oil pollution of the territorial waters and coasts, largely in liquid form, owing to the fact that the major tanker route passes through the Comoros.

221. Solutions to the first problem are obviously to be developed at the national level. At present, there is no legislation to deal with excessive exploitation of coral reefs, while a recent Executive Order prohibits the extraction of sand on beaches of touristic importance. Solutions to the second problem cannot be found by the Comoros alone. Not only does a regional effort seem indispensable here, but involvement of States outside the region also appears desirable for co-operation.

Madagascar

222. Degradation and loss of mangrove swamps and widespread and severe soil erosion are the top two environmental problems of Madagascar, as identified at the Mahé Workshop. 300,000 ha of mangroves are protected by the provisions of a Foresty Decree of 15 January 1930 and its secondary regulations. No further legislative action should be needed, except for a modernization of the texts. Management of the problem would appear to be much more linked to public education and enforcement aspects, both of them being intimately related. As to soil erosion, legal protection is to be found in the Forestry Decree just mentioned, and in an Executive Order of 14 January 1937. They have been complemented by Ordinance No. 60/127 of 3 October 1960 on clearing of forests and forest fires, its Decree of 6 February 1961 (No. 61/079), and Ordinance No. 76/030 of 21 August 1976. All these texts are quite strict, and the latter one bears heavy sanctions for offenders. However, due to lack of resources and means, and possibly because of the severity of the texts, the level of implementation seems to be rather low. Perhaps a more modern, imaginative approach may be adopted which would take more fully into account the socio-economic realities of the country.

Mauritius

223. Only one problem was listed as a priority area for Mauritius, namely: Pollution of Port Louis harbour and vicinity by urban wastes and industrial discharges. At times up to ten per cent of the fish catch has been discarded because of ciquatera toxity.

224. Section 9(3) of the Fisheries Act, 1980 prohibits discharge into any river, lake, pond, canal or tributary, of any substance likely to injure any fish. This provision may not necessarily apply to the problem directly for two reasons: first, contamination may not injure fish as such but may injure a consumer. Secondly, while the provision prohibits disharge into any river, lake, pond, canal or tributary, it may not necessarily apply to instances of discharge through outfalls from municipal or industrial centres directly into the ocean. Canals may arguably be interpreted to include outfalls but this could be a tenuous interpretation. In this sense also, the Rivers and Canals Act, 1863 (Revised Laws, 1981 Vol. 5) which by Sections 87 and 91 prohibits discharges of any wastes into a river or canal, is limited. Very often, much of the municipal and industrial effluents, which are a concern to Mauritius, are drained through streams into the ocean and thus fall under the coverage of this Act. However, this is a rather restricted provision for the

problem. Section 9(3) of the Fisheries Act, 1980 and Sections 87 and 91 of the Rivers and Canals Act 1863, could each be more broadly drafted to apply to all discharges including closed and open gutters, as well as general outfalls draining into the ocean.

225. The Mauritius Ports Act, 1976 empowers the Mauritius Marine Authority, established under Section 3 of the Act, to make regulations prohibiting, inter alia, pollution in areas adjacent to a port. Presumably, this relates to pollution which would impede efficient operation of the port. To that extent this provision is relevant to pollution of Port Louis. However, it does not necessarily cover discharges which lead to contamination of fish. Amendments to the Fisheries Act and the Rivers and Canals Act are possible ways of supplementing the Ports Act in order to deal with Mauritius' priority problem. But this approach might ultimately prove to be fragmentary and piecemeal. Thus, it may be more effective to deal with the matter through a broadly-packaged environmental legislation prescribing discharge standards, with corresponding sanctions, for all industries and municipal centres in the country.

Seychelles

226. Priority problems for Seychelles fall under four categories:

(1) Paucity of data base on all aspects of environment quality and the lack of skill in data collection, analysis, and standard setting;

(2) Conflicts in land use between agriculture and residential purposes;

(3) Pollution by solid waste disposal;

(4) Limited facilities for oil pollution control.

227. Problem (1) is essentially one of manpower and institutional development and not of legislation. The National Research and Development Act, 1980 and the National Parks and Nature Conservance (Amendment) Act, 1982 have set up the basic institutional requirements.

228. Problem (2) seems to be adequately dealt with by the Town and Country Planning Act, 1972 (Cap. 160), which deals with zoning regulations. Because the Town and Country Development Authority, established under Section 3 of the Act, decides zoning questions on the basis of priorities set out in the current national development plan the remaining task is essentially a political one, not of law.

229. Problem (3) is at present dealt with partially by the Public Health Act, 1960 and the Water Act, 1982. The Public Health Act, in this respect, is limited only to control of nuisance through washing limits and gutting of fish and throwing refuse on Mahé beaches. Although the 1970 Regulations preventing defilement of rivers may apply to wastes from kitchens, latrines, stables and piggeries built along rivers and streams, these provisions are rather narrow and not necessarily applicable to industrial and municipal solid wastes discharged into the ocean directly. The Water Act, on the other hand, focuses rather precisely on the protection of water used for human consumption. Therefore, following the adoption of the National Parks and Nature Conservancy Act (Amendment), 1982 which established the Seychelles National Environment Commission,there seems to be a need to adopt a more general environment protection law which deals with discharge of wastes into the environment.

230. Problem (4) may largely concern institutional development, equipment and manpower and only partly require legislation. Already Seychelles has the EEZ

Control Unit of the National Airwing, which apart from control of fishing activities, is also required to watch for any pollution by oil. Secondly, the Seychelles Fire Department has a pollution control unit to deal with emergencies. The main problem may be that the two are ill-equipped to deal with major polluting incidents. If the two units were to be expanded in scope to constitute a complete oil combating unit then there would be a need for broader legislation, as part of the suggestion for Problem (3) above, specifying its legal responsibilities and legislative authority.

Somalia

231. The following six environmental problems were identified:

(1) Shifting sand dunes, which affect agriculture.

(2) Mining of limestone and abstraction of sand for construction purposes.

(3) Destruction of mangroves in coastal areas.

(4) Illegal fishing by foreign fleets.

(5) Oil pollution evidenced by tar balls on the beaches.

(6) Sharks which are a danger to tourists.

232. Problem (1) was identified at the Workshop as one of management and finance. Article 7 of Law No. 15 of 25.1.1969 prohibits clearing of forests, grass or bush by any means whatsoever. A management-oriented law under the umbrella of agriculture, for example, could provide residents with financial assistance to plant trees, shrubs or grass on the land. But the areas' sparse population does not make that a practical proposition. The problem can be effectively dealt with by mobilization of the population in a campaign supported by requisite expertise and finances.

233. Problem (2) requires prescription and strict enforcement of a law prohibiting mining of limestone and abstraction of sand along the coastline. No such law exists in Somalia at present and as a consequence the abstraction of sand is indiscriminate, leading to large areas disappearing under ocean water once sand abstraction gets below the high-water mark. Somalia should adopt a law similar to the Seychelles Removal of Sand and Gravel Act, 1982 (Act 13 of 1982) which designates sand abstraction sites and permits excavation only on special licence issued by a Controller of Sand and Gravel.

234. Problem (3) is covered under the general provision of Article 7 of Law No. 15 of 25.1.1969 which prohibits any person from willfully or negligently burning or clearing trees, bushes, shrubs, saplings or seedlings, except in accordance with written permission of the Minister of Livestock, Forestry and Range. Possibly, the enforcement mechanisms should be strengthened. But as an additional measure, regulations may be adopted which prohibit entry into any particularly endangered mangrove areas. In all these instances, however, there should also be a consideration of alternative occupation for the people clearing mangroves.

235. Problem (4) is at present covered by the Somali Maritime Code of 1959 and Law No. 17 of 3 February 1977. The latter law established the Ministry of Fisheries while the former requires that fishing activities in Somali waters, by nationals or non-nationals, may be carried out only with written permission of the Minister of Fisheries or his designated Officer. The main obstacle for Somalia is that it claims 200 nautical miles territorial sea while it has signed the 1982 United

Nations Law of the Sea Convention. Therefore, Somalia might well deal with Problem (4) in two ways. Firstly, in adopting a new and comprehensive legislation on the EEZ, to include pollution control and management of the living resources; secondly, in working out an effective system of enforcement. If possible, enforcement should be carried out on a regional basis.

236. As regards problem (5), Somalia has no national law on marine pollution by oil, nor yet is it a party to any of the conventions on control of marine pollution by oil, except for the 1982 Jeddah Convention which it has signed but not yet ratified. Somalia ought to take a number of steps in its legislative development. It should : (a) consider ratifying the global conventions dealing with marine pollution as discussed in Part I because of the basic protection standards they give to the contracting States, (b) adopt its own comprehensive legislation on prevention and control of marine pollution from all sources, including oil pollution from ships; (c) establish within that national legislation the legal framework for an oil pollution surveillance and combat unit to enforce the pollution control law within areas of national jurisdiction; (d) harmonize its own maritime code with the provisions of the 1982 United Nations Convention on the Law of the Sea especially on limits of the territorial sea and the legal regime of the EEZ; and (e) consider a framework within which it can co-operate with the countries in the Western Indian Ocean in the prevention and control of deliberate and accidental discharge of oil from ships.

237. Problem (6) as an immediate priority in Somalia has largely arisen from a particular kind of pollution, namely, raw effluents discharged from the main Mogadishu abattoir. The effluents contain blood, intestinal wastes and meaty solids which overflow or bypass treatment ponds and drain into coastal lagoons and inshore areas. Sharks are attracted into these areas by these wasteloads. Somalia may be in need of comprehensive legislation dealing with prevention and control of wastes from land-based sources, including municipal and industrial effluents.

Tanzania

238. The Workshop identified the following seven problem areas as priority for Tanzania:

(1) Soil erosion caused by deforestation and bad agricultural practices;

(2) Urbanization especially in coastal areas giving rise to health and housing problems;

(3) Rapid coastal erosion;

(4) Accidental and deliberate oil discharges from ships;

(5) Loss of mangroves due to building industry

(6) Fishing by explosives;

(7) Socio-economic problems related to management of coastal living resources.

239. Problem (1) has been handled in Tanzania as an education and management problem. The Workshop report observed that the Land-Use Planning Unit in the Ministry of Lands has mounted a comprehensive campaign for afforestation. These efforts could be supplemented by forestry legislation prohibiting indiscriminate felling of trees or strict control of felling of trees along river-beds.

240. Problem (2) is handled at the policy level by the Land-Use Planning Unit which decides on land use options. Urbanization is addressed under the Town and Country Planning Ordinance (Chap. 378). The latter legislation adopted originally in 1960 may be outdated in specific areas and ,therefore, in need of updating.

241. Problem (3) may be related to (5) in that they both originate largely from indiscriminate clearing of coastal vegetation. Solutions would be similar to those envisaged for Problem (1) above.

242. Problem (4): Tanzania should take a number of measures related to prevention and control of marine pollution by oil. Firstly, Tanzania may usefully consider accepting international conventions dealing with the control and prevention of marine pollution. At present Tanzania has not accepted any of them. Secondly, Tanzania has not adopted national legislation concerning the control or prevention of marine pollution. A provision of Part IX of the Merchant Shipping Act deals largely with deliberate discharge from merchant ships and has useful incentives for other persons to give evidence of such discharges. But this is inadequate in that it deals only with deliberate discharges in areas of national jurisdiction. The second point proceeds from the fact that the limits of Tanzania's national jurisdiction are not certain. The 1973 Proclamation extended the national territorial waters to fifty nautical miles without prescribing the legal regime and functional regulations. Then Tanzania signed the 1982 United Nations Law of the Sea Convention which limits territorial sea to twelve nautical miles followed by the EEZ. It seems that Tanzania should adopt a national law specifying the legal regime of the territorial sea and the EEZ to articulate its requirements for control of oil pollution affecting coastal waters. Finally, according to the Mahé Workshop report, Tanzania had determined that there was a need to combat the problem of oil pollution regionally. Therefore, they should act to develop national oil pollution combating strategies, pari passu, encouraging regional negotiation towards an agreement among the countries in the East African Region.

243. Problem (6) is one for enforcement and not law. The Fisheries (Explosives, Poisons and Water Pollution) Regulations (GN. 109 of 17 Sept. 1982) seem adequate to deal with the problem studied by the Workshop.

244. Problem (7) seems to concern policy and management; in particular, assistance should be given to the fishing communities to develop appropriate gears and boats as well as marketing of their fish. Fishery legislation does not cover questions such as fishermen's loan scheme and the marketing system. The legislation and enforcement machinery should in fact protect the fishing communities to avoid desperate measures such as use of explosives as methods of fishing.

CONCLUSIONS

245. This study of national legislation and the participation of the States of the East African region in environment-oriented international conventions brings out a number of important points for the development and application of a regional convention for the protection and management of the marine and coastal enviornment of the region. The salient points are briefly outlined below.

246. There is a very high level of awareness that marine pollution is a real problem requiring preventive and regulatory measures in the East African region. Although the States of the East African region are aware of the dangers of marine pollution from land-based sources their priority worry at the present time is the danger of pollution arising from ships either accidentally or by deliberate discharges.

Therefore, they recognize a particularly urgent need to set up a system of surveillance and monitoring to deal with deliberate discharges together with a system of readiness to deal with possible tanker accidents. For both problems, the policy adopted at the regional level should be articulated in national legislation and vice versa. Ultimately, such policies may usefully be integrated within the framework of a regional agreement, which should be harmonized with relevant global conventions dealing with pollution from ships.

247. There is an equally high level of awareness that efforts should be made for the management of marine living resources both in terms of conservation measures as well as in terms of rational exploitation that ensures sustained yield. Fishery resources are particularly viewed as a vital source of food protein necessary for development. Efforts at the broad regional level have already commenced through FAO's Indian Ocean Fisheries Commission and its subsidiary body, the Committee for the Development and Management of Fisheries in the South-West Indian Ocean, established in 1980.

248. Participation of the States of the East African region in global and regional conventions related to environment and natural resources management is still minimal. This is often a complex matter because acceptance of the conventions per se does not ensure compliance with the standards required therein. It is therefore imperative that before acceding to, or otherwise accepting, a convention the State should make a detailed assessment of the economic, technical and legal implications of its acceptance. In most of the States concerned, persons interviewed Stated that efforts were actually under way to conduct such assessments and to involve the relevant government agencies. But without exception, the process has been hampered by limited technical manpower and resources. In some cases, the government has requested assistance from the relevant inter-governmental agencies. The States of the East African region may wish to consider the usefulness of a regional framework for consultation on selected global and regional conventions relating to marine environment with a view to:

(1) reaching a common understanding of the purposes of the conventions;

(2) harmonizing ratification of the agreements as well as of the subsequent amendments; and

(3) consulting on the structure and content of the national legislation to implement the conventions.

249. A number of laws at the national level need to be harmonized. For instance, several States have signed the 1982 Convention on the Law of the Sea; yet they retain laws that are inconsistent with its provisions, such as the 12 nautical mile limit of territorial sea and the 200 nautical miles limit of the Exclusive Economic Zone. With regard to the Exclusive Economic Zone, the States should adopt national legislation prescribing the national regulatory and enforcement standards for pollution control and management of living resources. National laws relating to merchant shipping and prevention of marine pollution from ships as they relate to areas under national jurisdiction should also be harmonized. There is a wide body of national legislation dealing with conservation and exploitation of living resources of the sea in the region. But these resources roam the coastal region freely, regardless of the limits of national jurisdiction. In many cases, to be effective national legislation should also be harmonized so that there are uniform management standards. This should also be the case for enforcement mechanisms. A regional programme for prevention and control of marine pollution in the area should take into account the work of the Committee for the Development and Management of Fisheries in the South-West Indian Ocean.

250. A wide array of national legislation relevant to the protection of the marine environment exists in the States. However, with very few exceptions, the laws were adopted without conscious determination that they should protect the environment or control marine pollution. Consequently, many laws are incomplete and fragmentary. Legislation relating to the protection of the marine environment should be properly integrated with policies for the management of natural resources for national economic development. For instance, one of the serious marine pollution problems in the East African region is sedimentation in coastal waters caused by silt load resulting from soil erosion. Soil erosion means loss of fertile agricultural land which in turn leads to poor harvests unless fertilizers are used on the land. Fertilizers are themselves an economic burden on the national economy. If soil erosion is not stopped, the fertilizers will in turn be washed to the sea with the soil, causing further pollution. Legislation should encompass, in an integrated manner, these development and environmental aspects. This is not to promote an all-embracing environmental legislation in a single text. Indeed, great caution should be exercised towards giant legislation or tentacular administration, their enforcement or functioning being in practice very problematic. What is needed are linkages which may give to sectoral law a proper development/environment perspective. The laws should emphasize development and management orientation rather than rules for conservation per se. A general observation from the area is that the existing pollution level is still low. Therefore, laws should facilitate rational management of the ocean and of its resources for development purposes.

251. Enforcement of existing legislation still seems a major problem for many States. In fact, enforcement of environmental standards, given the technical character of such legislation, is a problem for many States regardless of their stage of economic development. Basic requirements for such enforcement are trained manpower, specialized laboratories and equipment and high level political commitment. In most of the States under review there appears to be a serious shortage of manpower, laboratories and equipment. Without these, no political commitment can be effective.

252. There are already a number of laboratories in the region, such as the Kenya Marine and Fisheries Research Institute at Mombasa; the Tanzania Fisheries Research Institute at Zanzibar; the Seychelles National Research and Development Council; and the Somali National Fisheries and Marine Institute which could operate as research centres to support standard setting. What seems important is a systematic framework for exchange of information among these laboratories as well as for pooling of resources to secure highly specialized equipment and scientists for baseline studies and for future regulatory measures.

253. Efforts should also be made to prevent pollution from land-based sources. While this problem has not reached an alarming level at present, the opportunity exists for legislation to be mainly management-oriented to prevent future escalation of the problem. This approach can prevent future expenditures on corrective measures.

254. Many laws and regulations are not enforced, either due to lack of financial and human resources to ensure their enforcement, or to lack of political will to apply unpopular measures which from the very beginning were designed in too strict a manner. Excessively stringent laws may indeed be counter-productive when they push a text beyond the limits of what is realistic and feasible. Examples of texts which in practice have fallen into abeyance are numerous. For instance, throughout the region, the provisions designed to protect rare shells are not respected at all. Although several countries have prohibited the collection, sale and export of shells, whether live or dead, a traveller may see prohibited shells openly on sale, sometimes even in the duty free area of the international airports. One of the authors of this report was himself unable to leave shells in bond in spite of his

request, and was told that this was unnecessary since import-export restrictions were not applied at all; and this in three different countries of the region. The effectiveness of the rule of law is a function of the capacity and ability of the citizen to respect it, and also of the ability of the administration to exercise good control of its implementation. These two factors may be more decisive than the intrinsic quality of the text itself. Many of the laws and regulations are not known by the population or are inimical to local practices and customs or vital economic interests. In the latter case, if no alternatives are found to make up for the loss of essential revenues, there is little hope of the legislation being enforced.

255. Action is conceivable at three main levels: (1) global, (2) regional/ sub-regional and (3) national/local. It may be assumed that the choice of the optimal level of action in each case would not be primarily based on political considerations, but would be geared to the nature of the environmental problems to be solved. Hence an over-all programme of legal action should envisage concerted steps at different levels.

256. As indicated in the first part of this study, and as illustrated by the table in the annex, very few of the States in the East African region have so far become parties to the existing international conventions for marine pollution control at the global level - such as the IMO Conventions for the Prevention of Pollution by Ships (1954-1973), the London Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter (1972), the Brussels Conventions on Civil Liability for Oil Pollution Damage (1969), the Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (1971), the Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualities (Brussels 1969) and the Protocol Relating to Intervention on the High Seas in Cases of Marine Pollution by Substances other than Oil (London 1973). Considering that these conventions offer a number of legal safeguards and remedies against pollution caused by foreign vessels, ratification would provide the coastal States of the region with a measure of protection, including certain uniform standards of conduct and enforceable sanctions in case of violation. It would also give them a stronger voice in the further elaboration and improvement of international controls mainly through the International Maritime Organization (IMO, and especially its Marine Environment Protection Committee), where participation by East African coastal States appears to have been less significant than in the United Nations Conference on the Law of the Sea.

257. There are several ways to promote wider participation in these existing international agreements. As a first step, action could be undertaken to bring these agreements to the attention of the competent national authorities, to ascertain from them the precise local reasons for the lack of ratification, the type of difficulties encountered and possible ways of overcoming them. Secondly, as in other marine regions, political consciousness and interest in the matter could be awakened by special interparliamentary conferences and working groups; an African Parliaments' Union (APU), to which all parliaments of OAU member States belong, was established in Abidjan in 1976.

258. It must be pointed out, however, that mere ratification is not enough to bring about effective legal protection of the marine environment; implementing national legislation and administrative measures will be required for this purpose. Technical assistance to the competent Government authorities in this area would also facilitate regional harmonization in the methods and procedures of enforcement and compliance control at the national level.

259. In addition to national legislative measures, administrative machinery and technical facilities for implementing international conventions, action will be

needed at the national/local level (including federal/state legislation where applicable) in order to cover the important gaps which have been noted in the national laws of the region. One of the most serious handicaps in most countries concerned is the absence of any well-defined national standards for the measurement and assessment of pollution, including technical specifications and codes of practice for the principal source of environmental damage.

260. A legislative action programme for each State might therefore be envisaged, which should include a review of both the general framework of environmental law and administration (with a view to adapting it to the special needs of marine and coastal environment protection) and of the specific sectoral legislation required.

261. The long-range aim of such programmes would be to ensure that within a reasonable time all coastal States will be equipped with national laws and standards-setting machinery commensurate with environmental priorities. Once again, it should be emphasized here that in order to be effective, legislative and administrative reforms must be able to count on the necessary technical facilities and budgetary support.

262. While some external technical assistance will undoubtedly be necessary for this purpose, a considerable amount of relevant legal and administrative experience is already available in the States of the region, although this experience has not yet been readily accessible to other interested States. A first step, therefore, would be systematic exchange of information and comparison of national laws and administrative institutions within the region.

263. This may indeed lead to gradual harmonization and reciprocal adjustment of standards and practices. Whether the development of uniform rules or guidelines should subsequently be envisaged for the entire region is essentially a question of practical needs and feasibility, and hence must be decided ad hoc for each particular environmental problem. In some cases, sub-regional or bilateral co-ordination between neighbouring States would seem more appropriate, as in the case of legislation governing adjoining marine parks and specially protected coastal areas or where marine currents affect two or more adjacent coastal States. In other cases, a common approach by all coastal States may be advisable in order to ensure uniform investment conditions.

264. However, there is a normal and understandable reluctance on the part of governments to adopt unilateral national control measures that may have adverse economic repercussions on their own economy and place their industries at a competitive disadvantage internationally, unless they are assured, as far as is practicable, that other States in the region will adopt equivalent measures and standards. Such assurance can best be provided by the adoption of a regional legal agreement as evidence of the firm commitment of all participating States.

265. In addition to global and national measures, regional action for marine environment protection has been taken in a number of other sea areas of the world. Some global agreements such as the 1972 London Convention on the Prevention of Marine Pollution by Dumping of Waste and other Matter, as well as the 1982 Convention on the Law of the Sea, expressly provide for the elaboration of regional instruments for this purpose. Under the auspices of the Regional Seas Programme of UNEP six regional conventions for the protection and development of the marine and coastal environment have been adopted. This demonstrates that the present effort is not an isolated one and is, in fact, part of a long-term programme to promote regional action for the management and protection of the marine and coastal environment.

266. In order to be meaningful, a regional instrument for marine environment protection should go beyond a mere restatement of general concepts, such as are contained in Part XII of the 1982 Convention on the Law of the Sea, Yet, the style will inevitably be programmatic, laying down guidelines for government action rather than detailed treaty obligations or sanctions. Among the elements which may thus be included are the following: land-based pollution; ship-based pollution, pollution from seabed exploration and exploitation; coastal erosion; co-operation in dealing with pollution emergencies; co-ordinated research, monitoring and environmental impact assessment; technical assistance and training; liability and compensation.

267. In preparing a programme for legal action for marine environment protection in the East African region, care must be taken to ensure its compatibility with applicable international rules and institutions both at the global level and at the level of existing regional obligations of participating States. Conformity of a regional legal instrument should thus be ascertained not only with respect to those international agreements (enumerated in the first part of the present study) which directly concern marine pollution, but also with respect to other potentially relevant international rules: e.g., the 1965 United Nations Convention on Transit Trade of Land-Locked States and the regional dispute settlement procedure laid down within the Organization of African Unity (OAU) by its Commission of Mediation, Conciliation and Arbitration.

ANNEX

PARTICIPATION IN INTERNATIONAL CONVENTIONS DEALING WHOLLY OR PARTLY WITH THE DEVELOPMENT AND PROTECTION OF THE MARINE AND COASTAL ENVIRONMENT

	COM	FRA	KEN	MAD	MAU	MOZ	SEY	SOM	TAN
1. UNCLOS 1982		S	S	S	S	S	S	S	S
2. OILPOL 1954, as amended 1962-1969*		X	X	X					
3. OILPOL Amendments, 1971		X	X						
4. MARPOL 1973*		X	X						
5. MARPOL PROT. 1978*		X							
6. COLREG 1972*		X							
8. SOLAS 1974*		X		X			X		
9. SOLAS 1978*		X							
10. SOLAS 1981									
11. INTERVENTION 1969*		X		S					
12. INTERVENTION PROT. 1973*									
13. CLC 1969*		X		X					
14. CLC PROT. 1976*									
15. FUND 1971*		X		S					
16. L. NUCLEAR 1962				X					
17. CL. NUCLEAR 1971*		X		S					
18. LL SHIPOWNERS 1957*		X	X	X	X				
19. LL SHIPOWNERS PROT. 1979									
20. LL 1976		(X)							
21. HIGH SEAS 1958*			X	X	X				
22. CONTINENTAL SHELF 1958*		X	X	X	X				
23. DUMPING 1972*		X	X						
24. DUMPING AMENDMENTS 1978									
25. NUCLEAR TESTS 1963*			X	X	X			X	X
26. NUCLEAR SEABED 1971*				S	X				S
27. ENVIRONMENTAL MODIFICATIONS 1977*				S					
28. CITES 1973*		X	X	X	X		X		X
29. MIGRATORY 1979		S		S					
30. IPPC 1952*		X	X		X				
31. RAMSAR 1971*									
32. NATURAL HERITAGE 1972*		X	X				X		X
33. WHALING 1946*		X	X		X		X		
34. AFRICA 1968* (R)			X	X			X		X
35. OAU CHARTER 1963* (R)	X		X	X	X	X	X	X	X
36. ADB 1963* (R)	X		X	X	X	X	X	X	X
37. CIRDAfrica 1979* (R)			X			X			X
38. IOFC (SWIO committee) 1/	X	X	X	X	X	X	X	X	X

The asterisk "*" indicates that the instrument has entered into force.
The letter "R" in parenthesis indicates that the instrument has a regional or sub-regional scope.
The sign "X" stands for ratification or accession.
The sign "S" stands for signature.

1/ The Indian Ocean Fishery Commission (IOFC) was not established by a Convention but was established under article 6 of the Constitution of FAO.

PUBLICATIONS IN THE UNEP REGIONAL SEAS REPORTS AND STUDIES SERIES

No. 1 UNEP: Achievements and planned development of UNEP's Regional Seas Programme and comparable programmes sponsored by other bodies. (1982)

No. 2 UNIDO/UNEP: Survey of marine pullutants from industrial sources in the West and Central African Region. (1982)

No. 3 UNESCO/UNEP: River inputs to the West and Central African marine environment. (1982)

No. 4 IMCO/UNEP: The status of oil pollution and oil pollution control in the West and Central African Region. (1982)

No. 5 IAEA/UNEP: Survey of tar, oil, chlorinated hydrocarbons and trace metal pollution in coastal waters of the Sultanate of Oman. (1982)

No. 6 UN/UNESCO/UNEP: Marine and coastal area development in the East African region. (1982)

No. 7 UNIDO/UNEP: Industrial sources of marine and coastal pollution in the East African region. (1982)

No. 8 FAO/UNEP: Marine pollution in the East African region. (1982)

No. 9 WHO/UNEP: Public health problems in the coastal zone of the East African region. (1982)

No. 10 IMO/UNEP: Oil pollution control in the East African region. (1982)

No. 11 IUCN/UNEP: Conservation of coastal and marine ecosystems and living resources of the East African region. (1982)

No. 12 UNEP: Environmental problems of the East African region. (1982)

No. 13 M. PATHMARAJAH: Pollution and the marine environment in the Indian Ocean. (1982)

No. 14 UNEP/CEPAL: Development and environment in the Wider Caribbean Region: A Synthesis. (1982)

No. 15 UNEP: Guidelines and principles for the preparation and implementation of comprehensive action plans for the protection and development of marine and coastal areas of regional seas. (1982)

No. 16 GESAMP: The health of the oceans. (1982)

No. 17 UNEP: Regional Seas Programme: Legislative authority. (in preparation)

No. 18 UNEP: Regional Seas Programme: Workplan. (1982)

No. 19 UNEP: Regional Seas Programme: Compendium of projects. (1982)

No. 20 CPPS/UNEP: Action Plan for the protection of the marine environment and coastal areas of the South-East Pacific. (1983)

No. 21 CPPS/UNEP: Sources, levels and effects of marine pollution in the South-East Pacific. (1983) (In Spanish only)

No. 22 UNEP: Regional Seas Programme in Latin America and Wider Caribbean. (1983)

No. 23 FAO/UNESCO/IOC/WHO/WMO/IAEA/UNEP: Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MED POL) - Phase I: Programme Description. (1983)

No. 24 UNEP: Action Plan for the protection and development of the marine and coastal areas of the East Asian Region. (1983)

No. 25 UNEP: Marine pollution. (1983)

No. 26 UNEP: Action Plan for the Caribbean environment programme. (1983)

No. 27 UNEP: Action Plan for the protection and development of the marine environment and coastal areas of the West and Central African Region. (1983)

No. 28 UNEP: Long-term programme for pollution monitoring and research in the Mediterranean (MED POL) - Phase II. (1983)

No. 29 SPC/SPEC/ESCAP: Action Plan for managing the natural resources and environment of the South Pacific Region. (1983)

No. 30 UNDIESA/UNEP: Ocean energy potential of the West African Region. (1983)

No. 31 A. L. DAHL and I. L. BAUMGART: The state of the environment in the South Pacific. (1983)

No. 32 UNEP/ECE/UNIDO/FAO/UNESCO/WHO/IAEA: Pollutants from land-based sources in the Mediterranean. (1983)

No. 33 UNDIESA/UNEP: Onshore impact of offshore oil and natural gas development in the West African Region. (1983)

No. 34 UNEP: Action Plan for the protection of the Mediterranean. (1983)

No. 35 UNEP: Action Plan for the protection of the marine environment and the coastal areas of Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. (1983)

No. 36 UNEP/CEPAL: The state of marine pollution in the Wider Caribbean Region. (1983)

No. 37 UNDIESA/UNEP: Environmental management problems in resource utilization and survey of resources in the West African Region. (1983)

No. 38 FAO/UNEP: Legal aspects of protecting and managing the marine and coastal environment of the East African region. (1983)

No. 39 IUCN/UNEP: Marine and coastal conservation in the East African region. (1983)

No. 40 SPC/SPEC/ESCAP/UNEP: Radioactivity in the South Pacific. (1983)

No. 41 UNEP: Socio-economic activities that may have an impact on the marine and coastal environment of the East African region. (1983)