CONSERVATION AND DEVELOPMENT OF COASTAL AND OFF-SHORE RESOURCES IN EASTERN AFRICA: AGENDA FOR RESEARCH

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INTRODUCTION

Individual states and the international community generally have invested enormous human and economic resources during the past nine years in an effort to negotiate an international agreement governing all uses of the sea. The protracted negotiations, undertaken by Third U.N. Conference on the Law of the Sea (UNCLOS III)[1] probably unprecedented in terms of man-hours (or man-years) have still not found commo grounds of agreement on all key issues to enable states to sign a treaty. The difficulty is precisely because there is a complex array of national economic, political/security and aesthetic interests of individual states that are at stake. The regulatory priorities of individual states, more frequently the developing and developed states, differ on matters of coastal and off-shore fisheries, fuel and non-fuel mineral resources, marine pollution, navigation by civilian and military vessels and scientific research. This failure to find commons grounds of agreement after the long negotiations would suggest that most states have clearly defined their national policies and the scope of interests they refuse to depart from.

Whatever is the ultimate outcome of the present negotiations at the Law of the Sea Conferenee which will doubtlessly continue into 1977, the individual states will need to continue to formulate their national implementing regulations and the strategies of management regarding participation by the state and its citizens in marine affairs. These are preconditions for the ultimate enjoyment of the interests which the states have so assiduously talked over.

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1. The First U.N. Conference on the Law of the Sea was held at Geneva in 1958; it produced four Conventions as follows: Convention on the Territorial Sea and the Contiguous Zone, 516 UNTS 205 (1964); Convention on the High Seas, 450 UNTS 82 (1962); Convention on the Continental Shelf, 499 UNTS 311 (1964) and the Convention on Fishing and Conservation of Living Resources of the High Sea, 599 UNTS 285 (1966) and an Optional Protocol of Signatures Concerning Compulsory Settlement of Disputes.

See general discussion in Fitzmaurice, "Some Results of the Geneva Conference on the Law of the Sea" in 8 International and Comparative Law Quarterly 73 (1959(; Jessup, "The United Nations Conference on the Law of the Sea", in 59 Columbia Law Review 243 (1959). The second Conference met in Geneva in 1960 in an attempt to resolve the vital problems left at the 1958 session but this one was a clearer failure.

Kenya delegates to the negotiations have been among the most active and influential ever since the preparatory phases of the UNCLOS III. The concern implicit in that vivid participation should not appear to be shallow fanfare at the international scene. Rather, it should also be apparent in the national front and clearly reflected in the development of national marine policies, e.g. laws on conservation and harvesting of fisheries; prevention of pollution of harbours and coastal waters; development of coastal tourist industry and recreation facilities; and prospecting for and mining of fuel and non-fuel resources in the continental shelf and sea-bed resources, among others.

The purpose of this paper is twofold: First, it will briefly outline the national and international interests at stake in the negotiations and relate them to Kenya and its neighbours, where necessary. Secondly, the analyses will seek to discern key subject areas and to point out where research is necessary either for systematic collation and examination of a Kenya's existing regulations and management strategies, or to point out the lacunae in the development of policies and management, or both. The paper is therefore an outline for a long series of studies in what Kenya is doing, plans to do, or ought to do in conservation and development of its coastal and off-shore resources.

II. THE PURPOSE OF DEVELOPING NATIONAL AND REGIONAL MARINE POLICIES

The changes in the interests of the coastal and maritime states over the uses of the ocean space and the increasing sophistication of technology which may facilitate the realization of those interests have necessitated the reformulation of national and international concepts and policies on the seas. Interests of many states have been more clearly focused on the living resources of the oceans, especially fish; and mineral resources especially oil from the continental shelf and manganese nodules from the sea-bed and ocean floor. These interests will be intensified by the presently increasing demand for sources of food proteins, foreign exchange and energy.

Apart from the urgent need for clearly defined concepts and standards for conservation and development of economically valueable coastal and off-shore resources there are also security and political interests of coastal and maritime states which require negotiation and agreement. The contrasting interests include on the one hand, the powers

of the coastal states to check naval and civilian vessels which transit their coastal waters or straits to ensure that the vessels do not engage in any conduct detrimental to the state's interests; on the other hand, the flag states claim absolute rights to control all activities on or arising from all vessels.

There is, therefore, an obvious need for an agreement on the scope of the jurisdiction of coastal states for purposes of conservation, exploration and exploitation of the economic resources of the sea, as well as the powers of those states in the preservation of national security if the impending conflicts are to be avoided. Similarly, there is an urgent need for the establishment of an orderly system for conservation and exploitation of the resources of the sea-bed beyond the limits of national jurisdication; it may be observed in this connection that the UNCLOS III itself has, so far left this issue untouched.

What all this boils down to is that states - coastal, maritime or otherwise, assert their own interests over the coastal and off-shore economic resources and security requirements to the extent that the respective states have studied and determined ways in which their interests would be maximized or optimally realized vis a vis any contending claims. Thus the process of reformulating concepts for uses of the sea, or finding new approaches for regulating uses of ocean space, require initiatives both at national level - where national marine policies are identified and developed, and at international level where the contending interests and claims are negotiated towards an international agreement.

Both aspects of the process are currently at work in different degrees and in different regions as the Third United Nations Conference on the Law of the Sea (UNCLOS III) attempts to conclude a comprehensive treaty dealing with all uses of the Ocean space. The decision to convene this Conference was taken by the United Nations General Assembly in December 1970[2] when the international community was convinced that the existing rules of customary international law and those codified in the

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2. U.N. General Assembly Resolution 2750 C(XXV) adopted on 17th December 1970.

four 1958 Geneva Conventions on the Law of the Sea were either inadequate or obsolete in the particularly essential subject areas. The following examples may illustrate this point: First, the Geneva Conferences on the Law of the Sea in 1958 and 1960 did not agree on the vital questions of precise numerical delimitation of territorial sea and jurisdiction for important specific functions such as coastal fishery resources. Secondly, with regard to the continental shelf, the definition under the 1958 Geneva Convention on the Continental Shelf was based on availability of technology capable of exploiting resources at depths greater than 200 meters; this has been overtaken by events since available technology can exploit resources almost at any depth of the sea bed.[3] This means that any part of the seabed or ocean floor could be defined as continental shelf and might be appropriated by any technologically competent state or person. Thus, the definition was manifestly imprecise and fatally vague. Thirdly, the existing regulations did not provide a system for orderly consevation, exploration and exploitation of the resources of the sea beyond the limits of national jurisdiction - wherever that might be. Moreover, the resources of the sea bed such as manganese nodules, which contain varying quantities of copper, cobalt, manganese, among others, are not covered in the existing regime. At the past two conferences the negotiators focused only on the uses of the sea within coastal zones and continental shelf; beyond that area only two major uses were of concern, viz: navigation which was left absolutely free, and fishing which was largely of interest to the long-distance fishermen from developed countries - also left to laissez faire conduct.

The international community recognized also that as the technology for exploiting the resources in every area of the sea increased so also did the chances of abuse through over-exploitation and depletion or

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3. The development of the U.S. "research ship" Glomar Explorer originally believed to belong to Hughes Corporation and later discovered to belong to the U.S. Central Intelligence Agency has been the best known example. The ship was used in an effort by C.I.A. to recover a sunken Soviet naval submarine in the depths of South Pacific. See Rubin, "Sunken Soviet Submarine and Central Intelligence; Laws of Property and the Agency" 69 American Journal of International Law 8551(1975).

There have been some experimental drilling projects at depths greater than 5,000 meters. See United Nations, World Plan for Action for Application of Science and Technology to Development. U.N. Doc. E/4962/Rev. 2 (1971) p. 116.

pollution. It is obvious that fish do not heed boundaries of national jurisdiction even if there was one. For that reason over-exploitation or poor conservation measures of coastal species in one area may easily result in adverse consequences for adjacent coastal states. That is to say, for instance, Kenya cannot ignore the plans for fishing and fishery conservation measures of Somalia and Tanzania; or for that matter, Madagascar and Mozambique in the South, and the Arabian Sea states in the north. A similar problem applies to anadromous species which spawn in inland rivers then set out to the open seas where they may be caught by fishermen who do not contribute to the conservation measures. Another clearly direct example is the case of pelagic or highly migratory species such as tuna. These species roam across oceans from one coast to another and are subject to being caught by anyone anywhere. Therefore, their conservation require internationally agreed standards for fishing so as to avoid dangers of over-exploitation or depletion and possible in ordinate benefits by some states to the disadvantage of others. Lack of internationally agreed fishing and conservation standards have, for instance, been the source of the well-known confrontations between long-distance fishermen from the United States and Ecuador and Peru, both coastal states which are among the world's leading exporters of tuna. The United States, for its part, has had some very serious conflicts with Russian, Polish and German long-distance fishermen in Northwest Atlantic waters, especially George's Banks off New England coasts. Americans argue that these long-distance fishermen do not only deprive them of economic opportunities of fishery but also that the non-coastal states recklessly ignore essential conservation standards and therefore threaten certain species with depletion - whether within or beyond the limits of national jurisdiction. In the western Indian Ocean waters the fishing fleets are of long-distance groups mainly from Russia, Taiwan, Korea, Japan and France. Experience already show that they are not likely to heed some of the most significant conservation requirements because if resources are depleted in one part of the ocean long distance fishermen can easily move to another. The disadvantage is for the coastal states which, in the case of Eastern Africa, is made up of countries which have not developed any long-distance fleets. Their primary task should be the conservation and fishing of the coastal and off-shore species in the region first.

The fishery problem is in many ways analogous to that of marine pollution. When harmful materials or energy are released into one part

of the sea the results may be felt in parts of the same sea remote from the original source. This applies to major oil spills such as the Torrey Canyon disaster of March 1967; or by cumulative effect of many minor discharges resulting from deballasting, tank washing or valve failure. Ocean currents and tides carry the pollutants from one coastal area to another or from areas beyond national jurisdiction to coastal waters or shorelines of another state. These may have serious consequences for coastal fisheries, or parks and recreation facilities as was well dramatized on the British and French coasts following the Torrey Canyon tragedy. It may be recalled that in that incident the tanker collapsed about eight miles off the coast of Cornwall, southern England; the oil covered the tourist resorts of Cornwall and spread eastwards to cause serious damages on the coasts of Brittany and Normandy, about 225 miles away.

The east coast of Africa is even more seriously susceptible to similar kinds of problems: The oil fortunes from the Middle East is almost all transported by tankers through the Indian Ocean to Europe, America and the Orient. This makes the Indian Ocean the busiest oil tanker traffic route in the world. The fact that we have not had a Torrey Canyon - type of disaster here is no consolation. What should be born in mind is that it could happen here, and the impact would be felt by more than one state. It is the coastal states that would lose in coastal fishery resources and the destruction of oyster beds; tourist benefits, coastal parks and recreation sites; and harbour facilities.

Thus viewed, the situation necessitates development of comprehensive regulations and strategies to deal with deliberate discharges such as deballasting and tank washing or accidental spills such as valve failure or the Torrey Canyon - type. The strategies should clearly specify how the states deal with pollution originating within or beyond the limits of national jurisdiction. Again the regulations and strategies are developed partly at national level and partly through international agreements such as those anticipated at the UNCLOS III which completed its third substantive session in New York in May 1976.

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4. Sweeney, "Oil Pollution of the Oceans" 37 Fordham Law Review 157 (1968).

III ON THE OUTCOME OF UNCLOS III

After about six years of preparation and now the third year of substantive negotiations the UNCLOS III has already had considerable impact on the patterns of thought as regards national and international control and use of coastal and off-shore resources. The first substantive session in Caracas from June to August 1974 ended with a wide array of draft articles with alternate provisions. However, the second substantive session in Geneva from 17th March to 9th May 1975 produced three "Informal Single Negotiating Text," (ISNT) corresponding to the three main Committees and subject areas of the negotiations.[5] The draft articles in these texts were composed so as to reflect what the Committee Chairmen regarded to be the general areas of agreement, thus elirinating alternate provisions of the kinds that came from the Caracas session. It was generally agreed by the conferees that the ISNT would form the basis of subsequent negotiations and hopefully hasten the process towards the final treaty. The third substantive session held at New York from 29th March to May 7th 1976 had the goal of focusing largely on the ISNT without introducing entirely new proposals. This New York session produced the revised edition of the ISNT which are now before governments for scrutiny in preparation for the next negotiating session. The hope of the delegates was that after one more session in New York, August 2,- September 17, 1976, there would be a final ceremonial session at Caracas next year to sign a single treaty.

Yet even if the UNCLOS III does not succeed, in the sense of concluding a comprehensive treaty as intended, the deliberations to date have developed certain key concepts and broad doctrines, regarding uses of the sea and its resources, which will influence the development of marine legislations and policies of individual states. This will occur whether the subsequent policies are developed by states unilaterally or

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5. The Conference operates on three main Committees: Committee I has the mandate to negotiate articles on the Sea-Bed and Ocean Floor and the Subsoil thereof beyond the limits of National Jurisdiction; Committee II is negotiating articles relating to the area of national jurisdiction, namely, territorial sea, contiguous zone and the exclusive economic zone; Committee III is dealing with articles on the Protection and Preservation of the Marine Environment, Marine Scientific Research, and Development and Transfer of Technology. Towards the end of the Geneva Session the conference president requested the Committee chairman to prepare the Informal Single Negotiating Texts so as to reflect the genral trend of agreement in their negotiations. The ISNT for the three Committees are numbered in Parts, U.N. Doc. A/CONF.62/WP.8/Part I-III, respectively. The Products of the New York Session were revisions of these ISNT, and are referred to here accordingly.

in cooperation with other states. It would be useful at this juncture to give a summary of some of the central concepts and subject areas as they relate to control conservation and use of marine resources. The discussion of the following four subjects draws largely from the revised ISNTs:

(1) The Exclusive Economic Zone (2) The Continental Shelf
(3) Fisheries (4) Sea-bed resources.

1: The Exclusive Economic Zone.

The Conference seems to favour fairly comprehensive regulatory powers for the coastal states within what is well-known as the exclusive economic zone. This is clearly reflected in the ISNT from the last session. The draft articles define the exclusive economic zone as an area of the sea beyond and adjacent to the territorial sea and extending outward to 200 nautical miles from the baseline from which the breadth of the territorial sea is measured.[6] The provision specifies in Article 44 that within that zone the coastal state has, among other powers,

"(a) Sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether renewable or non-renewable, of the sea-bed and subsoil and the superjacent waters;

(b) Exclusive rights and jurisdiction with regard to the establishment and use of artificial islands, installations and structures;

(c) Exclusive jurisdiction with regard to:

(i) Other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds; and

(ii) Scientific research;

(d) Jurisdiction with regard to the preservation of the marine environment, including pollution control and abatement",

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6. Article 45 of U.N. Doc. A/CONF. 62/WP.8/Rev. 1/Part II.

It is the degree of international acceptance of these principles that has increased but the substantive provisions have not changed in any sifnificant degree since the concept of economic zone entered the lexicon of the UNCLOS III negotiations in August 1971. That was when the concept was proposed by the delegation of Kenya to the United Nations Committee on Sea-Bed which was holding preliminary discussions in preparation for UNCLOS III.[7] The Concept was designed to offer a possible formula to meet what most states considered to be the special interests or preferential rights of the coastal states over the resources of the coastal zones beyond the territorial sea. It was also an attempt to introduce straight forward distance criterion for measuring the extent of coastal state jurisdiction.

At that time the extension of coastal state jurisdiction outward to 200 miles for any purpose met with strenuous opposition from maritime states, especially from the United States of America.[8] Their reason was that the exercise of coastal state powers beyond a limited width of territorial sea would interfere with naval and merchant navigation, and would reduce operation of their long-distance fishermen. On the other hand, the idea of a 200 miles exclusive economic zone had strong support from most of the developing coastal states, especially those in Latin America where Chile, Peru and Ecuador had claimed jurisdiction ove resources outward to 200 miles since late 1940's. The support for the idea increased also in the Caribbean Sea, Africa and Asia to the extent that by the end of the first substantive session of UNCLOS III at Caracas, the leader of the United States delegation wrote that "with only a few exceptions, economic zone proposals have been proferred by all Conference groups including the United States".[9] An irony about the matter

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7. U.N. Doc.A/AC.138/SC.II/SR.8, 3rd August 1971 p. 54. see also revised and expanded text issued by Kenya a year later as U.N. Doc. A/AC.138/SC.II/L. 10 (1972).

8. Se Krueger, "An Evaluation of the United States Ocean Policy" in 17 McGill Law Journal 652 (1971); and Alexander (Ed.) The United Nations and Ocean Management. Proceedings of the Fifth Annual Conference of the Law of the Sea Institute. (Kingston, R.I. University of Rhode Island, 1971) p. 331.

9. Stevenson and Oxman, "The Third United Nations Conference on the Law of the Sea: The 1974 Caracas Session", 69 American Journal of International Law 16 (1975).

was that the United States, formerly the arch opponent of the 200 miles idea is the state that has now passed a unilateral legislation extending its exclusive jurisdiction over coastal fisheries outward to 200 miles while the international negotiations where they had earlier opposed the idea is still in progress.

If this unilateral measure by the United States seals that country's arrogance in public diplomacy, it also suggests that international agreement on the 200 miles exclusive economic zone for the coastal states is now a certainty; it suggests too, that the coastal states ought to commence close consideration of their national marine policies including legislative development and strategies for management of coastal resources within such a zone.

The ISNT provide that within the economic zone the coastal states would assume "sovereign rights" for purposes conservation, exploration and exploitation of the resources, among other powers. This means then that only the coastal state, and no other entity, may authorize the exploration and exploitation of the resources of the exclusive economic zone. These trends at UNCLOS III were further reinforced by the United Nations General Assembly Resolution 3016 on "Permanent Sovereignty Over Natural Resources of Developing Countries" adopted at the twenty-seventh session.[10] That resolution which recalled the affirmations of the 1962 U.N. General Assembly Resolution on Permanent Sovereignty over Natural Resources reaffirmed, under its paragraph (1). "the rights of states to permanent sovereignty over all natural resources on land within their national boundaries, as well as those found in the sea-bed and the subsoil thereof within their national jurisdiction and in the superjacent waters". (emphasis added).

The exclusive economic zone would be the area of national jurisdiction, and this resolution, like the ISNT articles, would entitle the coastal state to develop its own national legislations and strategies for management enabling the state to dispose of the resources

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10. The Resolution was adopted on 18th December, 1972 with votes 102 in favour, none against and 22 abstaining. See text reprinted in 12 International Legal Materials 226 (1973).

as it best desires. The provisions in the draft articles would mean too , that if the coastal state does not exhaust the resources of the economic zone or if it does not harvest the renewable resources strictly upto the level of maximum sustainable yield, then no other state would know; the resources would then remain unexploited. There are, however, three proposals or ideas which have arisen during the negotiations and which deserve to be critically pointed out here:

The first proposal is advanced and supported by the long-distance fishing countries and championed by the United States. It would require that a coastal state which does not exhause the living resources within its economic zone up to the level of maximum sustainable yield should permit access by foreign states and/or their fishermen to fish the stocks in excess of the coastal state's capacity to harvest.[11] This would mean that most of the developing coastal states such as the East African States, that have not fully developed their capacity to exhaust the coastal fishery resources would be obliged to permit such long-distance fishing countries like France, Japan, South Korea, Taiwan, USA, and the USSR to enter their economic zones to fish. The converse arrangement is not likely to arise: there is very a remote possibility that the developing East African states will soon have the capacity to seek fishing opportunities off the coasts of these developed states even if they had reserves, which is also highly unlikely. It is obvious then, that this proposal is designed to permit the developed long-distance fishing countries to have the best of both worlds: they would have the full opportunity of fishing in their coastal waters and then proceed to coastal waters of the developing countries while the latter would not have comparable opportunities.

It may be argued, however, that the coastal state would still benefit by allowing access to the foreign fishing fleets if the coastal state collected fees on licences to the foreign fishermen. In that case the provision for "access" in the treaty and the resistance with which the proposal has met are really insifnificant, (if also unnecessary) since states usually make such arrangements with respect to other resources

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11. U.N. Doc.A/CONF. 62/WP.8/Rev.1/Part III, Art. 51.

within their jurisdiction. If a state desires to take a slow pace in the exploitation of its natural resources it should be free to do that. This is analogous also to the reservation of certain oil-fields for strategic reasons as practised in the United States, for example. An attempt or appearing to coerse developing states to give access for foreigners to exploit resourses within its own jurisdiction seems totally unjustified.

Moreover, the coastal state itself has the severeign rights for purposes of exploration and exploitation of the resources. Other states depend on the information which it has gathered to show if the exhaustive level has been reached. Here again, it seems that if the coastal state has not fully developed the requisite technology for full exploration it should decide whether or not to call upon another state or an international organization such as the F.A.O. and its subsidiary organ The Indian Ocean Fisheries Commission to aid in such exploration. It seems that the extent to which a state exploits resources within its own jurisdiction for its own development is an entirely discretionary matter. Certainly, it does not help the individual state if it leaves the harvestable resources to fallow when some management arrangments with other states would benefit its development.

The second matter regards the preferential rights of access to the resources in the economic zone which the coastal state may allow to the neighbouring land-locked, and other geographically disadvantaged states. This refers for example, to arrangements whereby Somalia, Kenya, Tanzania, Mozambique and Madagascar would either individually or within a regional framework,[12] permit land-locked states such as Uganda, Malawi and Zambia to exploit resources within their respective economic zones. Such an idea was first emphasized by the Kenya delegate who proposed the concept of exclusive economic zone. He told the United Nations Committee on Sea-Bed that "his country was prepared to give nationals of the 14 land-locked countries of Africa, within regional or bilateral agreements,

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12. Some land-locked countries, such as Zambia, have suggested that there should be regional economic zones, as distinct from coastal state economic zone pure and simple. Within the regional economic zone states within a definable geographic region would have equal rights to economic resources.

the some treatment that it gives its own nationals within the limits of national jurisdiction".[13] This view that the nationals of the land-locked or other geographically disadvantaged states should share resources of the economic zone on equal basis with the nationals of the coastal state was also adopted by the Declaration of the Organization of African Unity on the Law of the Sea.[14] - While no precise stipulations for conditions of such rights have been agreed upon at the conference the question has been constantly raised; by the end of the conference there will perhaps be only a general provision that the coastal states should negotiate with the land-locked and other geographically disadvantaged states in good faith, with a view to finding acceptable arrangements for granting preferenctial treatment to land-locked states as regards access to the resources of the exclusive economic zone. It is necessary, therefore that while any one of the coastal states develops its legislations they consider if and how it would achieve such a goal. The individual coastal state ought also to look over the shoulders of the neighbouring coastal states to see if their legislations would have any common grounds in the development of common policies for extending special treatments to land-locked and other geographically disadvantaged states.

The third point is the planning for the harvesting of resources that traverse the boundaries of the adjacent coastal states. This applied directly to the coastal fishery stocks that may, for example, roam the East Coast of Africa from Mozambique Channel to the Arabian Sea, or vise versa. It was evidently proper, for instance, that Kenya and Tanzania have negotiated their territorial waters boundaries in the Pemba Channel.[15] However, this settles only the question of territorial imperatives

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13. U.N. Doc. A/AC.138/SC.I/SR.8 (1971) p. 38.

14. It is among African States that the notion of equal sharing of resources within the economic zone has been held. The OAU Declaration adopted by the Council of Ministers in May 1973 is reproduced as U.N. Doc.A/CONF.62/33 (1974). The Latin American states refer only to preferential treatment for the land-locked and other geographically disadvantaged states.

15. See reports of the disputes in The East African Standard. September 19, 23, 24; October 5 and 6 1970. The negotiations took place first at Mombasa in May 1971 and again at Arusha in August 1975. The agreement which is not yet made public, shall be brought to force by exchange of notes between the two Governments.

but will never resolve the issue of fishery conservation for either state because fish will not obey the boundaries so drawn. A more effective conservation for fisheries within the east coast of Africa would have to be taken regionally, or bilaterally at the very least.

The issue of resources that traverse areas of national jurisdiction may also be found in certain mineral resources. The possibilities of conflict related to minerals under this category is well-illustrated by the occurrence of hydrothermal brines under the central rift of the Red Sea. Soon after these hot brines - rich in a number of minerals, notably, gold, copper, zinc and silver were discovered there, the Kingdom of Saudi Arabia issued a Decree to the effect that she owned all the hydrocarbon materials and minerals existing in the sea-bed adjacent to her continental shelf.[16] The purpose was to lay full claim to all the resources, unilaterally. In fact, however, Sudan, Ethiopia and Eritrea might all have claims to the same resources.

The foregoing points suggest clearly that while the resources of the exclusive economic zone may be subject to the control by the coastal state that state would, for various reasons, either take into account the policies being developed by neighbouring coastal states or it might desire to develop joint policies with other states. For example, an examiniation of maritime legislations developed by Kenya would of necessity take a close look at corresponding legislations in the other East African coastal states. Such a study ought to be commenced now as the period of conference diplomacy nears its end so as to clear way for development of strategies for rational management of coastal resources whatever is the outcome of UNCLOS III.

2: The Continental Shelf:

One of the most difficult tasks facing UNCLOS III is finding an acceptable standard for determining the legal definition of the continental shelf, that is, the outer limit of the continental shelf for purposes of coastal state jurisdiction. The causes of the rigidity in the negotiation circles are intertwined with the origins of the doctrines now governing the views of states. The important aspects may be outlined briefly as follows:

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16. Royal Decree No. M-27 dated 7th September 1388 Hegira reprinted in 8 International legal Materials 606 (1969). For general discussions of the deposits see Ross, "Red Sea Hot Brines Area: Revisited" Science Vol. 175 pp. 1455. (March 31, 1972); and U.N. E/4962/Rev. 2 (1971) p. 116.

The first time any state laid public claim to the continental shelf was in 1945 when, by the so-called Truman Proclamation, the United States of America unilaterally declared its rights to the living and non-living resources of the continental shelf. Although Truman did not specify the outer limit of continental shelf this action is generally blamed for having provoked a spate of unilateral claims by the Latin American states some of which decided to extended their jurisdictions outward to 200 miles beginning the same decade.[17] Then during the 1958 Geneva Conference on the Law of the Sea a definition of the continental shelf which was adopted said that the shelf of a coastal state was a natural prolongation of the continental land-mass, extending to a depth of 200 meters, or to such further depth as the superjacent water permits the exploitation of the resources there within.[18]

Thus, while the geographical shelf may generally average 200 meters in depth the additional criterion based on exploitability was dependent on technological sophistication and therefore, would change with time and expansion of knowledge. In which case, the legal continental shelf might extend to cover the entire continental margin, that is, the continental shelf proper, the continental slope, and the continental rise; which, of course, does not address the problem of where the continental rise ends. More recently the recovery of the sunken Soviet submarine in the abyssals of south Pacific, has demonstrated that technology is available to exploit resources at most depths of the sea bed; which means that most parts of the seabed are brought within the ambit of the legal continental shelf. That claim might sound absurd but it underscores the obsolesence of the present definition.

The vague definition of the continental shelf was further reinforced by the opinion expressed, by way of dictum, by the International Court of Justice in the North Sea Continental Shelf cases.[19]

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17. See discussions by Garcia-Amador, "The Latin American Contribution to the Law of the Sea" in 68 American Journal of International Law 33 (1974) and Hjertonsson, The New of the Sea: Influence of the Latin American States on the Recent Developments of the Law of the Sea (Leiden: A.W. Sijthoff 1973)

18. See some discussion by Gutteridge, "The 1958 Geneva Convention on the Continental Shelf" 35 British Year Book of International Law 102 (1959).

19. See Judgement, I.C.J. Reports (1969) p. 22.

Without providing any guidelines for the delimitation of the coastal jurisdiction the Court submitted that the continental shelf was natural prolongation of the continental land-mass and that the jurisdiction over resources therein belonged to the coastal state ipso facto and ab initio and that the state would choose whether or not to exploit the resources: if it chose not to exploit, "that is its own affair but no one else may do so without its consent".[20]

At UNCLOS III the failure of an agreement on the coastal state jurisdiction over the continental shelf has arisen from the rigid positions taken by the states which have wide continental shelves and their unbending adherence to the doctrines outlined above. They would like adoption of a rule which extends the jurisdiction of the coastal state upto the end of the continental margin. The second position adopted by states with average width of continental shelf (or no shelf at all) is that the legal continental shelf should be co-terminous with the exclusive economic zone, that is, ending at 200 nautical miles. It would mean that a coastal states with a continental shelf extending to a width greater than 200 miles would forgo the interests over the excess area. This is the position which is favoured by the Kenya delegation to the Conference. The third position seeks a compromise between the above two: it proposes that where the continental margin extends beyond 200 miles, sovereign rights over the resources of the shelf should extend to the limits of the margin but that this provision be accompanied with a revenue sharing formula: an obligation to pay part of the revenue derived from the area beyond the 200 miles into an international treasury. The revenue would then be used to defray the coasts of international administration related to law of the sea and the balance distributed to developing countries according to an agreed formula.

It seems that the third alternative offers an option which may ultimately appeal to coastal states especially those with wide shelves. The central problem may arise from the determination of the proportion of the proceeds which should go to the international treasury.

These proposals do not, however, answer the question of the criterion for determining the outer limit of the continental margin, that is, the outer limit of the "natural prolongation" of the continental land-mass. It has been proposed that the coastal state should determine the

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20. ibid.

outer limit of its continental margin; then the boundary is subject to review by an international group of experts called Shelf Boundary Review Commission.

Whatever the definition of the legal continental shelf that is finally adopted it seems certain that every coastal state will need to know its own continental shelf and adopt its own legislations and management policies regarding jurisdiction over resources therein. Needless to say, getting full data on the continental shelf and off-shore seabed areas is a costly and long process. Here again technological competence poses a serious problem since only the technologically equiped states would undertake the projects. A recent expert report pointed out that most areas of the oceans have not been surveyed thoroughly enough to produce a detailed picture of the bottom adding in any case, that "out of 106 maritime countries only 37 were considered to have a competent hydrographic survey service, 16 have only inadequate service and 53 were without any facilities".[21] Although some bathymetric surveys have in fact been carried out in parts of the east coast of Africa[22] the December 1975 meeting of the Governing Council of the newly established Regional Centre for Services in Surveying and Mapping, Nairobi, declared that available data are rudimentary and that this Centre intended to carry out, among other things bathymetric surveys along the coasts of Somali, Kenya, and Tanzania, emphasizing that "with the Law of the Sea current, it is vital that the Contracting Parties become aware of the extent of their continental margins."[23]

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21. U.N. Doc. E/4962/Rev. 2 (1971) p. 117.

22. See for example the paper by V.G. Cilek, "Review of Coastal Geology of United Republic of Tanzania", presented at the Joint IOC/FAO/UNESCO/EAC Seminar and Scientific Workshop on Cooperative Investigation of the North and Central Western Indian Ocean (CINCWIO) held at UNESCO Regional Office at Nairobi 25th - 31st March 1976. Cilek has prepared a generous "Bibliography of Coastal Geology of Tanzania" which he presented to CINCWIO. The papers are now being prepared for publication by UNESCO.

23. See Minutes of the Second Meeting of the Governing Council of the Regional Centre for Services in Surveying and Mapping, Held at the Headquarters of the Centre, Nairobi, Kenya, 19th - 20th December 1975 (Working Paper No. 4. "Proposed Study and Exec tion of Hydrographic and Geophysical Surveys of the Eastern African Coast" p. 3).

The Centre is a specialized and technical organ of the U.N. Economic Commission for Africa and is only currently consolidating its facilities and recruiting staff to begin operation this year. It is anticipated that the Centre shall cover Uganda, Kenya, Somalia, Tanzania and Malawi in its surveying and mapping of land and coastal zones.

Information arising from such "vital" surveys and mapping of the continental margins would assist in further development of national policies and management of the continental shelf. For reasons that were stated earlier, and reinforced by the suggestions of the Regional Centre for Services in Surveying and Mapping, it is neeessary that in examining the legislations and polciies being developed by Kenya, one should look also at what policies are developed by adjacent coastal states, which are also members of the Centre. This may assist in identifying subject areas where the coastal states may eventually need to develop joint strategies of coastal zone managment to ensure maximization of conservation and economic objectives and conflict avoidance.

3: Marine Fisheries: The subject of fisheries has been discussed mainly in Committee II whose task was to deal with the area of national jurisdiction upto, and including, the exclusive economic zone. As a consequence, a large part of the provisions regarding fisheries dealt with questions already discussed above.

It will be recalled that generally, the ISNT contained provisions giving coastal states sovereign rights over the fishery resources within the exclusive economic zone. This was only coupled with an obligation to allow access by third states to harvest excess stocks. The same basic principles should be understood with regard to the specific species of fish governed by the rules of the exclusive economic zone but whose movements are not confined to the zone. It may be interesting, therefore, that in the present section we should consider fisheries according to their major classifications, viz:

(a) Sedentary species, that is, "organisms which at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant contact with the seabed or the subsoil;"[24] (b) Demersal or coastal species; (c) Anadromous species, or fish that spawn in the upper reaches of rivers, then as soon as the stocks are ready, they swim into the sea and roam frequently, beyond the economic zone of the state of origin; and (d) the pelagic or highly migratory species.

24. U.N. Doc. A/CONF.62/WP.3/Part II, (May 7 1975) Article 63 (4).

(a) The sedentary species which include lobsters and other fish which are normally found on the continental shelf would present very little or no problem if only there was an agreement on the outer limit of the continental shelf and the economic zone. At present it is simply left that creatures of the continental shelf belong to the coastal state if they are within 200 miles of the economic zone. On the other hand, there is no agreement yet on the scope of the coastal state rights and duties over sedentary species on the continental shelf beyond the economic zone.

(b) The coastal species such as herring and mackerel also fall largely within the exclusive economic zone. Their concentration and abundance is generally associated with the abundance of the planktons - the oceanic micro-organisms on which the fish feed. Available maps shows that the highest concentration of these micro-organisms is largely within a few hundreds of miles width of the coastal waters. These stocks naturally wander over the coastal waters or economic zones of more than one state. In this regard the draft article 52 of Committee II's ISNT provided that "these states shall seek either directly or through appropriate subregional or regional organizations to agree upon measures necessary to coordinate and ensure the conservation and development of such stocks ...." The article adds that

> "(2) Where the same stocks or associated stocks of species occur both within the exclusive economic zone and in areas beyond and adjacent to the zone, the coastal State and States fishing for such stocks in the adjacent area shall seek either directly or through appropriate subregional or regional organizations to agree upon the measures necessary for the conservation of these stocks in the adjacent waters."

Both provisions are partinent to the situation in the western Indian Ocean. To date, there is no established permanent consultative arrangement among the states of the western Indian Ocean to ensure rational utilization of the coastal fishery resources. Kenya and Tanzania may eventually agree on some limited consultation to deal with fishing in the Pemba Channel which has been referred to above, but that is still of limited scope. A more comprehensive framework, from Kenya's position should include, at least Somalia and Tanzania but more reasonably, the full coastal stretch from Arabian Sea to the Mozambique Channel.

As regards the coastal fish stocks which also wander beyond the exclusive economic zone the situation in western Indian Ocean is more difficult because it involves almost entirely foregin and non-Indian Ocean states. In a study done for the F.A.O., Hayasi reported that Japanese, Russian and Taiwanese long-distance fishing fleets have been operating in the area since early 1950's.[25] Some of these states have shown their long-standing interests in the Indian Ocean through their membership in the Indo-Pacific Fisheries Council formed in 1948.[26] This means that the management of the coastal stocks which occur within and beyond the economic zone will require a complete rethinking of the regional framework so as to take full account of the interests of the coastal states within the region. The continuing stormy and long confrontation beteen Iceland and the U.K. illustrates how costly it can to be to try to discontinue the so-called traditional fishing opportunities however cogent the economic reasons given by the coastal state may be.[27]

(c) The case of anadromous stocks such as salmon presents quite a unique problem because the states of origin maintain that they have pre-emptive rights over the stocks. The ISNT for Committee II provides in its draft article 54 that the coastal states in whose rivers the anadromous stocks originate shall have the primary interest in the stocks and a responsibility to prescribe the conservation standards

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25. Hayasi, Stock Assessment (Rome: The Food and Agricultural Organization, of the United Nation, Indian Ocean Fishers Commission, March 1971) pp. 2, 7.

26. For text of the 1948 agreement see 120 UNTS 59 (1952). The treaty was revised in 1961; the revised text is in 418 UNTS 348 (1961). Members are France, the Philipines, Burma, U.S.A., Ceylon (Sri Lanka), Australia, China, (Taiwan), U.K., Pakistan, Korea, Japan, New Zealand and Vietnam.

27. After Iceland extended its fisheries jurisdiction to 50 miles on 1st Sept. 1972, the U.K. filed an application with the I.C.J. See International Court of Justice, Application Instituting Proceedings (filed with the Registry of the Court on 14th April 1972) "Fishing Jurisdiction" (The United Kingdom of Great Britain and Northern Ireland V. Iceland). But while the Court was still considering the issue a series of armed confrontations between the naval units of the two countries started.

In its final judgement the ICJ did not rule on whether Iceland had, unilaterally extending its jurisdiction, violated international law. The Court held that Iceland's unilateral measure was not opposable to the U.K. because the two states had an agreement regarding fisheries in that area. The Court directed that the parties were under duty to negotiate a system of fishing which was equitable to both parties. See "Fisheries Jurisdiction Case" (United Kingdom V. Iceland) ICJ Reports (1974) pp. 22-27. The disputes have not been resolved at the time of this writing. See some comments on recent events in The Guardian Weekly May 16, 1976 p. 10. The British naval frigates originally sent to escort British fishermen in Icelandic 200 miles waters were withdrawn on 31st May, 1976.

and regulatory measures. Under the draft articles, fishing for the anadromous stocks outside economic zone is prohibited except where such a rule would cause demonstrable economic dislocation to the state which has traditionally fished the stocks in those areas. The article requires that the enforcement of the regulations in the areas outside economic zone should be through regional arrangements involving states of origin and other interested states.

(d) The final type of fish considered by the UNCLOS III are the pelagic or highly migratory species such as tuna. These species migrate from one coast of the ocean to the opposite one, spending much of the year in the international waters beyond the limits of national jurisdiction. Ideally, the conservation and harvesting of the stocks should be controlled by an international authority like the one proposed for sea-bed resources - (discussed below.). However, the Conference has never considered treating fish in the international area as common heritage of mankind to be conserved, harvested and sold for revenues going into a common treasury. Instead, fish outside the economic zones will be for the benefit of whoever catches them.

The general view of the Conference, which has been pointed out above, favours establishment of regional organizations to coordinate the conservation and harvesting and perhaps also provide a regulatory framework within which the states can jointly supervise the fishery activities. This means then that the Conference might only make the general provisions as it has so far done, and leave the detailed negotiations of the regional fishery agreements to the states which can identify proper ecological regions within which they can meaningfully regulate or coordinate the conservation and harvesting of fishery resources.

This situation presents a special developmental challenge to the countries around the Indian Ocean generally and East African States in particular. As stated earlier, the highly migratory species in the Indian Ocean have been harvested almost entirely by non-Indian Ocean states. First, there was the general framework of the Indo-Pacific Fisheries Council established in 1948 with major revisions in 1961 but none of the East African states is a party to the agreement. Hayasi reported that Japanese longline fleets started operation in the Indian Ocean in 1952, while Koreans and Taiwanese fleets started fishing for tuna there in 1964.[28] At present it is well-known that Japanese and Russians have extensive fleets with factory ships operating in most parts of the Indian Ocean.

28. Hayasi. supra note 25.

When one considers fishing industry as a source of food protein and foreign exchange; and fishing as being labour intensive if properly planned, the significance of participation in that industry by the coastal states and a re-assessment of operation of the foreign fleets become rather obvious. It becomes all that more significant since the non-coastal states often lack the incentive to enforce strict conservation measures. In case certain stocks are depleted foreign fishermen readily change their fishing grounds. The reckless operation by foregin fleets has been a source of serious conflicts in Northwest Atlantic where New England fishermen accuse Polish, Soviet, German and other foreign fishermen of endangering certain stocks.

The challenge to the coastal states is therefore to determine their basic national policies or legislations and procedures of regulation that give priority to the needs and interests of the coastal states within the region. It would seem then that a study of development of national fishery industry in any single state should examine also the development of national legislations in various states within the immediate region assessing where the policies are or should be aligned regionally, then, secondly, to look at the strategies for management using the legislations to maximize regional and national benefits.

4. The Sea-bed Resources: This refers to the resources of the sea-bed beyond the continental shelf and beyond the limits of the exclusive economic zone. That implies generally that the resources in question are beyond the limits of any national jurisdiction, also designated as the "common heritage of manaking". It is perhaps fair to say that the concern for and interests in the rational exploitation of these resources was the single most important factor which led to the decision of the world community to convene UNCLOS III. Accordingly, the questions of the precise legal boundary of that international area of the seabed, and who may exploit its resources are, without doubt, some of the most difficult issues before the Conference.[29]

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29. See discussion by A.O. Adede, "The System for Exploration of the 'Common Heritage of Mankind' at the Carcas Conference'", in 69 American Journal of International Law 31 (1975).

Even though there has never in history been a universal agreement on the precise numerical delimitation of the area of national jurisdiction there has always been a general agreement that there exists an international area beyond limits of any national jurisdiction. This area is now known as res communis, or the common heritage of mankind, area subject to the control, power and use by the international community generally. The existance of such an area was clearly accepted when in 1969 the United Nations General Assembly adopted its Resolution 2467A by which the U.N. Committee on Sea-Bed was created and Resolution 2467C which called for t the establishment of an international machinery to organize and control exploration and exploitation of resources authoritatively reiterated in the "solemn" Declaration of Principles governing the Sea-Bed and Ocean Floor adopted by the U.N. General Assembly on 17th December 1970.[30] The fundamental assertion in the Declaration is that this res communis is not subject to appropriation by any person or state; in other words, it is not a res nullis or a no-man's-land where any person or state can acquire territory. It was further declared that the resources of the area would be used for the benefit of the international community as a whole, taking into consideration the special interests of the developing countries. In fact, the U.N. General Assembly adopted a special resolution - the "Moratorium Resolution"[31] by which it called upon all states to desist from any activities involving exploration and exploitation of the resources of the area until the international machinery referred to above is established. These are the fundamental principles on which the Committee I ISNT, especially draft articles 2-8 are now based.

There is a clear unanimity within UNCLOS III that the seabed beyond the economic zone and continental shelf, both as discussed above, will be the international area. So the Committee I of the Conference has the responsiblity for seeking an agreement on how the international community can best organise and exploit the resources made up largely

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30. U.N. General Assembly Resolution 2749 (XXV) reprinted in 10 International Legal Materials 220 (1971).

31. U.N. General Assembly Resolution 2574D adopted on 15th Dec. 1969 reprinted in 9 International Legal Materials 422 (1970).

of manganese nodules. There is also a general agreement that there shall be established an International Sea-Bed Authority to be the organization through which member states shall administer that area, manage its resources and all other activities in, or resulting from the area including distribution of revenues from the resources to support developing countries.[32]

Originally, there were drastic disagreements about the degree to which that International Authority would actually control activities of states harvesting the resources of the area. Negotiators strongly disagreed on the question of whether the Authority should itself be given the power and resources to carry out exploitation of the resources, so that any states or their citizens who desire to carry out similar activities would do so only on service contracts, and other forms of association with the Authority. A positive view of this proposition is taken by the developing countries (Group of 77) which have had adverse experiences with the free operation of multinational corporations and prefer planned and controlled economic activities. Their position is that the Authority should itself carry out exploitation of the resources, and to control the rate of production and marketing of the menerals. It is argued also, and particularly by developing states , land-based producers of minerals recoverable from the area of the Sea-bed whose economies depend largely on one or two minerals, that if production and marketing of menerals from the seabed was not so controlled the excess production might disrupt the market for their minerals and cause them serious economic dislocations.

A contrary position is taken by developed states which support "free market" economic policies, which are aggressively led by the United States. Simply put, the U.S. position is that the Authority should derive revenues from only the licenses. Mos U.S. policy-makers consider the discussions of the developing countries position as a waste of time. Legislators in the U.S. have introduced bills in their

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32. See one Report of the /UN/ Secretary-General, on "Possible Methods and Criteria for the Sharing by the International Community of Proceeds and other Benefits Derived from the Exploitation of the Resources of the Area Beyond the Limits of National Jurisdiction." U.N. Doc. A/AC.138/38 dated 15th June 1971. See also U.N. Doc. A/CONF. 62/ WP.8/Rev. I/Part I, articles 26, 48, 49 and 50.

Congress which, if passed, would authorize and protect U.S. citizens who are ready to select economically attractive sites in the seabed and commence mining in the international seabed area. Some Senators there have said, in fact, that they should go ahead and adopt the national legislations and forget about any further negotiations at UNCLOS III, with any eventual outcome.[33]

Should the United States adopt that legislation to be effective immediately that would perhaps spell the demise for any agreement on the orderly and internationally controlled mining of the resources of the international sea-bed area. The technologically advanced countries would commence competition to capture mineral sites in a manner reminiscent of the ancient colonial acquisition of territories.

A middle ground appears to have been found at the continuing negotiations.[34] But the sequel of the above discussions is that even though there is a general agreement about the existence of the international seabed area individual states may, and in fact should,begin thinking out what policy options they would adopt with or without the anticipated treaty. With a treaty which establishes the Authority the individual developing states should consider possible sources of technology especially training of local experts to facilitate their participation alongside with the Authority. Without the Authority every state would be on its own and should therefore still consider the training of its local people and to examine ways of gaining from the seabed resources after UNCLOS III.

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33. Such is the view of, for example, U.S. Senator Paul Fanin who said before the Senate Committee chaired by Senator Lee Metalf:

> "Let us not be distracted by expressions of 'cautious optimism', promises of intersessional work - work which is seldom productive - and the scheduling of ever-more sessions of the LOS Conference into the year 1977. The job must be done in this Congress. In the 93rd Congress, your bill S. 1134, was reported by the full Senate Interior Committee. Let us begin by taking definite action on your bill S.713 in this Congress"

U.S. Congress, Hearing before the Subcommittee on Minerals, Mineral Fuels, of the Committee on Interior and Insular Affairs, 94th Congress June 4, 1975. Part 3 p 1167.

34. See U.N. Doc A/CONF.62/WP.8/Rev.I/Part I, art. 22 and Annex I regarding Basic Conditions of Prospecting, Exploration and Exploitation.

Within western Indian Ocean states have accepted, in principle, the need to establish a regional Oceanogrphic Support Centre whose functions would be, among other things, the training of marine Scientists upto Master's and Ph.D. degrees.[35]

IV DISCERNIBLE RESEARCH TOPICS

The goals of an individual state within the above scheme of things may fall under two broad categories:

(a) To identify the range of its own national interests vis a vis the interests of other states and the international community at large, then to incorporate the principles within a national legislative framework. (b) To develop national management strategies for the implementation of the legislative principles in such a way as to avoid conflicts with other states. The provisions of the legislative enactments would show the extent to which the state is prepared to commence management conservation, exploration and exploitation of the marine resources for the good of the national population, while taking requisite measures to prevent possible social and economic consequences of expanded ocean-related activities. The two major topic areas may be further elaborated as follows:

(1) The Study of the Development of Marine Policies and Legislations:

The purpose of this part of the study is to ascertain the extent to which the country or countries under study have thought out and defined their marine policies - and how the policies are embodied in their legislative framework. It should include primarily the collection and collation of the legislative texts and policy instruments related to the conservation and development of coastal and offshore resources. We know, for example, that Kenya's major policies on fisheries are contained in the Fish Industry Act 1968, and that a legislation on the continental shelf was adopted by the Parliament in 1975.

The legislation to be sought should include the following subjects, among others:

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35. "Report of the Sub-Group on Coastal Physical Oceanography" issued at CINCWIO supra note 22.

_____ Delimitation of the territorial Sea.

_____ Rights and duties within the contiguous, resource or economic zones and the numerical delimitation of such zones.

_____ The control of pollution in the exclusive economic zone by substances and materials from ships.

_____ The control of pollution of the sea from land-based sources, including poluttions in estuaries.

_____ Marine fishery industry

_____ Mining and mineral rights in the continental shelf

_____ Mining and mineral rights in the sea-bed.

_____ Ports and harbours protection legislations.

_____ Coastal and off-shore parks and recreation facilities

_____ Shipping and merchant marine legislations, especially the conditions for awarding national flags to ships.

_____ Scientific research in the territorial sea and the economic zone.

There will be some brief analysis of selected central concepts in such legislations. This may facilitate identification of gaps or weaknesses in the legislations so that the study may perhaps hazard some policy recommendations.

It was emphasized in the general survey above that the rational management of most resources, especially in the areas of fisheries, pollution control and the exploitation of liquid minerals require bilateral or regional approaches. As already noted this was strongly emphasized in the scientific views expressed at the Seminar on Cooperative Investigation of the North and Central Western Indian Ocean in which Kenya scientists participated.[36] It seems necessary that each of the coastal states in eastern Africa should, while developing its own policies, endeavour also to get acquainted with corresponding policies in the neighbouring coastal states. Therefore, in these studies special efforts will be made to obtain corresponding texts at least from Somalia, Tanzania, Mozambique, Madagascar, Mauritius and Seychelles. Texts may also be sought from Uganda, Zambia and Malawi as land-locked states within the region which may be interested in regional arrangements such as were proposed by Kenya delegates at the UNCLOS III discussions on

36. ibid.

the exclusive economic zone.

(2) Marine Resource Management Studies: This part of the study has to do with what the country is doing or ought to do in order to realize the benefits from the uses discussed above, while avoiding adverse consequences of the expanded marine activities. It is evident then, that the scope of the studies to be undertaken here will depend largely on what is established in the first part. That is to say, this section deals with what the country does in the implementation of the national or regional policies and regulations.

The studies in this part will also be continuous and diverse in that they will examine the issues of development and management over time. There will be necessities for followup studies as developments occur in various areas of uses of the sea in order to assess the interaction between marine activities and other areas of national concerns including impacts on coastal populations.

The following broad areas of study may be discernible:

_____Fishery Industry

_____ Survey and charting of fishery resources

_____ Gear development and regulation

_____ Development of fishing vessels: motor, steam, rowing and sail

_____ Measures to protect fishing grounds from foreign and more efficient fleets (note experience in the development of Common Fisheries Policy, 1970 in EEC and resistance by Italy, France and Norway.

_____ Effects of changing fishing technology on the coastal fishing communities.

_____ Joint venture arrangements with foreign fishing interests (e.g. Kenya Fishing Industries as a joint enterprise of Ataka and Taiyo of Japan and Kenya Maritime Co. and I.C.D.C. of Kenya.)

_____ Aquactulture and biological conservation projects.

_____ Patterns of conflict management or avoidance. (note for example the Pemba Channel fishing dispute with Tanzania in 1970-71)

_____ Procedures for handling states that have fished in the sea area now to fall within limits of exclusive economic zone. Consider options for phasing out or joint ventures with Soviet, Japanese, Taiwanese and Korean fishermen.

_____ Fish processing and marketing facilities at national, regional and international levels.

_____ The role of the EAMFRO and locally available laboratory facilities.

_____ Cooperation with international organizations concerned with fishery activities (e.g. FAO, UNEP, UNESCO, IOC, ECA).

_____ Regulations of scientific research in coastal waters done by national and foreign scientists.

_____ Coastal and off-shore parks and recreation facilities.

_____ Impact of expanded coastal tourism and recreation on coastal populations.

_____ Parks and recreation versus conservation measures.

_____ The continental shelf and sea-bed resources

_____ Programmes for coastal and off-shore hydrographic surveys and charting

_____ Programmes and system for prospecting and drilling for hard and liquid minerals in the continental shelf and sea-bed.

_____ Possible environmental consequences of drilling for minerals in the coastal zone.

_____ Possible economic and social consequences of expanded mining activities on the coastal populations.

_____ Pollution control in harbour and coastal and off-shore areas.

_____ Procedures for control of effluents discharged from coastal urban and industrial centres.

_____ Procedures for the control of pollution from other land-based sources.

_____ Procedures for dealing with accidental and deliberate discharges at harbours and off-shore terminals.

_____ Arrangements for handling major spills such as the Torrey Canyon disaster.

_____ Available vessels; spraying equipments and detergents approved by marine biologists;

_____ Available bombs such as were used by the RAF and the Royal Navy against the Torrey Canyon in 1967.

_____ The role of the Kenya Navy, Army and Air Force.

_____ Coordination with other regional states.

_____ Arrangements with other developed or maritime states for assistance in case of a major spill.

_____ Arrangement for consultation with competent international organizations such as IMCO, UNEP, FAO, IOC, UNESCO in case of a major catastrophe and to deal with aftermath of the discharge.

_____ Shipping and the degree of investment in shipping industry.

_____ Specific administrative procedures for dealing with violations of the legislations.

_____ Training programmes for local marine scientists

_____ Local training facilities (existing and planned)

_____ Available local marine scientists.

_____ Those in still in training locally.

_____ Those in training abroad.

_____ The role of international agencies and support received from multilateral programmes such as TEMA in IOC.

_____ Procedures for exchange of training information with other regional or international institutions or states.

_____ Management of other coastal or off-shore installations

_____ Conservation and use of coastal mangrove vegetation (There is a marked practice of burning these for charcoal).

More subjects may be added to the above list and some researchable issues will become evident in the course of development of a variety of the above topics and sub-topics. As will be evident, the part of the study that may be done between now and 1980 will simply lay the groundwork for a continuing series of developmental and management studies in the 1980's. It may be reiterated once more that the comprehensive work on these topics will be multi- and inter-disciplinary. We intend to invite and encourage capable researchers in other disciplines to pick up aspects of the study which fall within their competence and contribute toward development of a comprehensive body of information for rational development of marine policy in the individual country or for regional cooperation.