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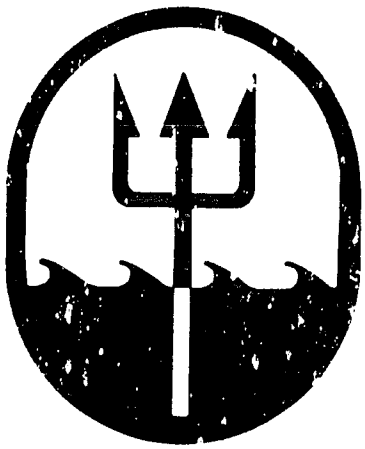

DALHOUSIE OCEAN STUDIES PROGRAMME

Re: Mr C. S
CECAF-0454
6.4

"New Directions in Ocean Law, Policy and Management"

EXPANDED MARITIME JURISDICTION: NEW PROSPECTS FOR THE WEST AFRICAN FISHERIES

by

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for

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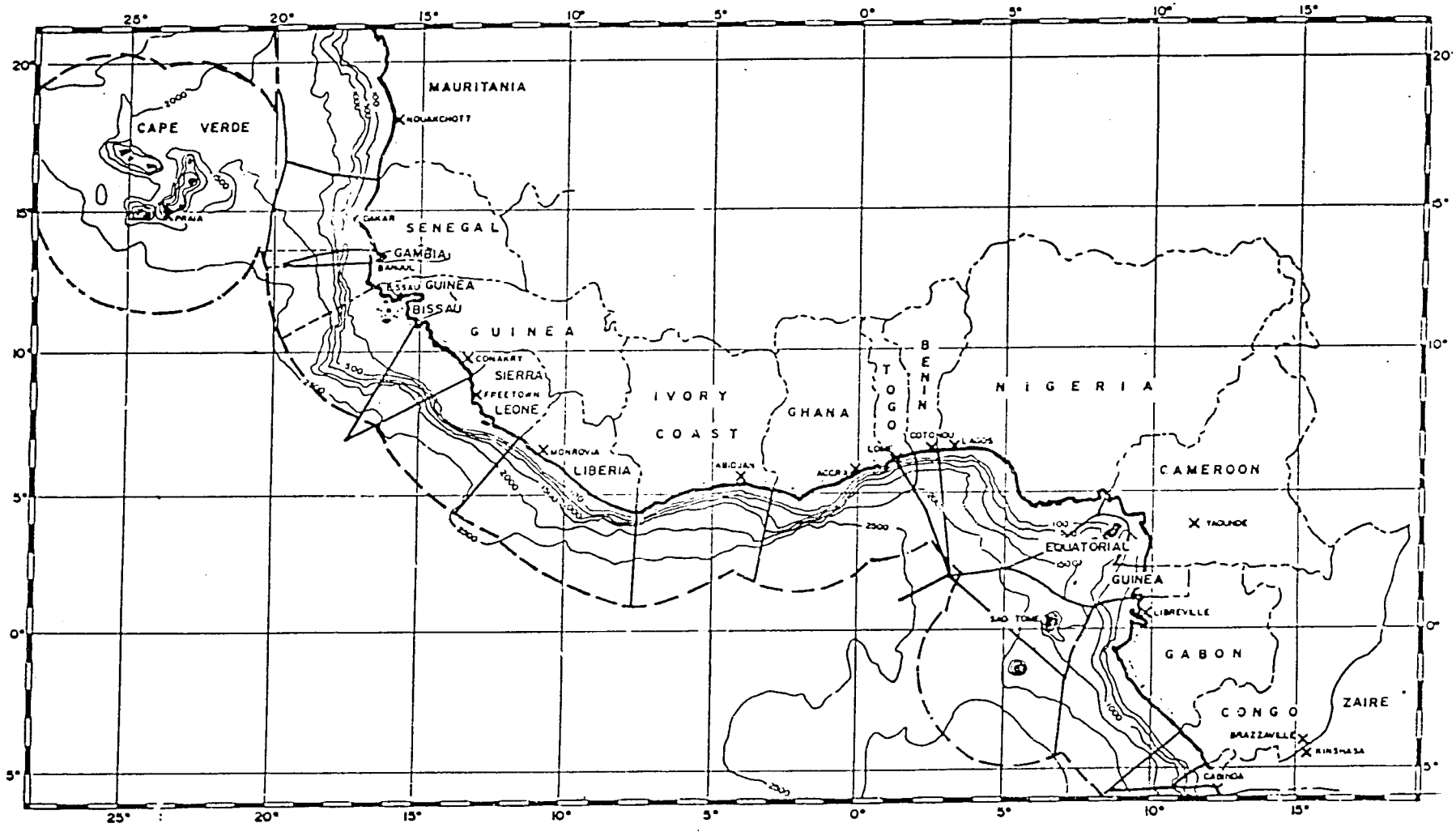
1. INTRODUCTION

The past twenty years have witnessed a revolution in internatinal thinking with respect to the law governing the world's oceans. The notion of freedom of the seas, with little or no authority over their adjacent waters accorded to the coastal state, has been superceded by a new ocean law which has permitted approximately 40 percent of former "high seas" to be brought under varying degrees of coastal state jurisdiction.

To many of the coastal states of West Africa, expanded jurisdiction offers the promise of a greatly expanded resource base in terms of minerals, hydrocarbons and living resources (See Figure 1). However, the problems associated with the effective management and exploitation of this potential are numerous and seemingly insurmountable given the limited administrative experience, infrastructure and capital resources of most of the coastal states of West Africa.

The process of determining what types of legislation and regulations will best expedite development of marine resources for the benefit of the people of the coastal state, while at the same time minimizing conflicts with neighbouring states and protecting the coastal environment, is an extremely complex, delicate and expensive process. Even the most developed countries with their vast resources and experience in ocean management are encountering severe socio-economic, administrative and political problems in managing their new areas of expanded jurisdiction.

FIGURE 1: THE 200 MILE ZONES OF WEST AFRICA (based on equidistance)



This paper will first briefly examine the marine environment of the West African coast with a focus on the region's living marine resources. This will be followed by a discussion of the Law of the Sea Convention with particular reference to its impact on fishery resource development. Thirdly, the paper will take a look at emerging state practice in the region with respect to national claims to expanded jurisdiction as well as bilateral and multilateral agreements designed to facilitate exploitation and management of living marine resources, particularly those that are transboundary in nature. Finally, the prospects for development of the regions fishery resources as a domestic food source and as a source of international exchange will be evaluated.

2. THE WEST AFRICAN MARINE ENVIRONMENT

i) Land/Sea Boundary

The marine environment of any region is a complexity of integrated processes consisting of three major components: atmospheric, marine and terrestrial.[1] Each component also consists of a dynamic set of processes which may or may not affect or be affected by processes within the other components. It is the interaction of oceanic, geologic and climatic processes that has formed the coastline of central West Africa into a number of different morphologic areas.[2]

From Mauritania to Cape Verde the shoreline is characterized by a low sandy shore with long-shore sand spits backed by large lagoons. The Cape Verte peninsula itself

consists of a group of volcanic islands which are attached to the shore by sandy peninsulas.

South of Cape Verte to Sierra Leone, the absence of a constant long-shore drift and high tidal range has drowned the river estuaries and prevented any significant sand bar or lagoon formation. This region is characterized by extensive mudflats and mangrove swamps, making access to the otherwise excellent estuarine harbours extremely difficult.

East of Cape Palmas, Liberia, the coastline runs in an east-west direction, forming the northern shore of the Gulf of Guinea. This change in orientation with respect to the waves and prevailing currents results in minimal shore line deposition and a long string of low cliffs and rocky promanatories which provide little shelter for ocean going vessels.[3]

From Ivory Coast to the east of the Niger River the continuous longshore drift and heavy surf have submerged the coastline leaving many sand bars and lagoon formations that are capable of supporting a wide range of agricultural activities. To the east of this region, the Niger River delta and its associated mangrove swamps dominate. These swamps continue as far as the eastern part of Nigeria where the change in direction of the coast is associated with the steep cliffs rising to form the base of Mt. Cameroon.

ii) Continental Shelf

The continental shelf off West Africa is extremely

TABLE 1

GENERAL DATA ON COASTAL GEOGRAPHY

COUNTY	COASTLINE (excluding islands km)	CONTINENTAL WIDTH (nautical miles)	SHELF AREA (thousand km²)
Mauritania	667	13-79	33.9
Senegal	718	8-50	23.8
The Gambia	70	41-50	3.7
Cape Verde	-	-	3.0
Guinea Bissau	300	40-105	45.0
Guinea	350	70-110	50.2
Sierra Leone	570	15-80	30.0
Liberia	537	10-35	18.4
Ivory Coast	500	11-20	12.2
Ghana	528	13-50	27.3
Togo	48	8-15	1.2
Benin	120	14-15	3.1
Nigeria	669	18-35	37.9
Cameroon	346	17-50	12.9
Equatorial Guinea	380	12-30	10.5
Gabon	739	8-40	35.4
Sao Tome and Principe	-	-	2.0

SOURCE: FAO, CIDA/FAO/CECAF Seminar on the Changing Law of the Sea and the Fisheriesof West Africa, FAO/TF/INT 180(a)(CAN).

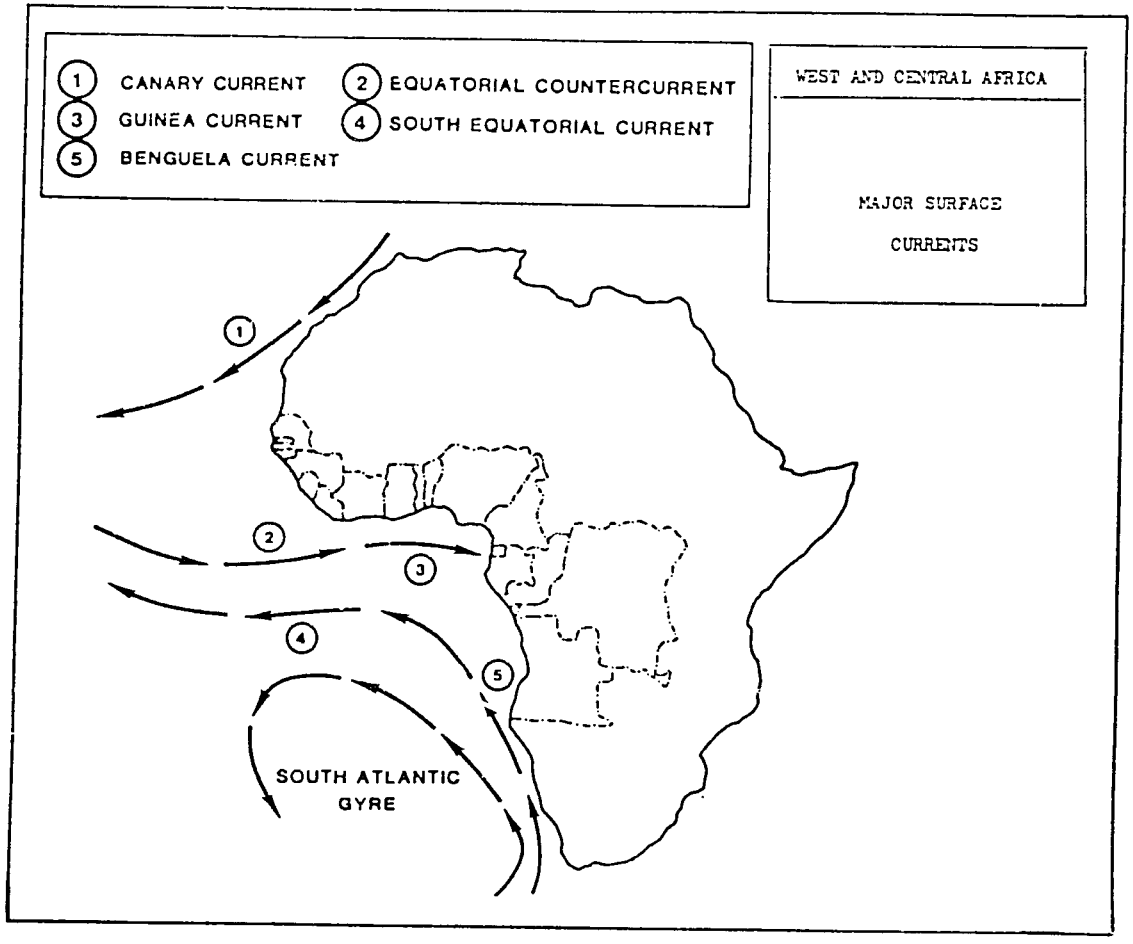
variable in its width, ranging from an average of 35 miles from Liberia to Nigeria to well over 100 miles off Sierra Leone and Senegal. The continental slope is also very steep, with the depth falling quickly to 2,500 m, except in the southern portion of the Gulf of Guinea where the drop is more gradual.[4] Table 1 shows some selected data on the shelf area of each country in the region.

iii) General Current Patterns

The major oceanic currents of the equatorial Atlantic are depicted in Figure 2. The South Equatorial Current flows easterly at approximately 5° North Latitude and a weaker, more variable current, the Equatorial Counter Current flows between the two in a westerly direction. There is also a major sub-surface current, not shown in the figure, that flows easterly beneath the equator. The broad slow moving Canary Current flows in a southwesterly direction from the northwest coast. At about 20° N. Latitude, this current divides; the northern branch becoming the North Equatorial Current, the southern branch joining the Equatorial Counter Current to form the strong, westerly flowing, Guinea Current.

Near shore, a combination of bottom topography, local weather conditions and variations in river flow cause great variabilities in the general patterns over space and time. The details of both seasonal and non-seasonal variations in the direction and speed of these currents has been the subject of numerous national and international studies but is still not

FIGURE 2



SOURCE: IMCO/UNEP "The Status of Oil Pollution and Oil Pollution Control in the West and Central Africa Region". UNEP Regional Seas Reports and Studies, No. 4, UNEP 1982.

fully understood.[5]

iv) Upwelling Areas

Upwelling, or the vertical transport of deeper nutrient rich water into the photic zone is an oceanographic feature of biological significance and it is generally acknowledged that upwelling zones are among the most productive ocean areas.

One area of strong upwelling occurs off the northwest coast and is marked by large differences between mid-ocean and coastal temperatures. The front migrates, lying between 21° N and 32° N during the summer and 10° N and 25° N during the early months of the year.[6] The seaward extension of this upwelling area varies but its effect on sea temperatures is applicable several hundred kilometers off Cape Vert, Senegal.

A second upwelling area occurs off the northern shore of the Gulf of Guinea between Cape Palmas and the Niger River delta.[7] Strong upwelling generally occurs from June through October, with a secondary short maximum during January. It should be noted, however that several anomalous years have been recorded when upwelling along the Gulf of Guinea shore has been dramatically reduced.[8]

2.2 The Fisheries Resources of West Africa

The West African fisheries are situated in the East Central Atlantic Zone -- the sixth most productive fishing area in the world. The highly migratory and multi-species nature of the resources and the fact that it is exploited by many nations

ESTIMATES OF CATCH POTENTIAL
BY MAJOR STOCKS, CECAF REGION

	Southern Zone	Northern Zone	Total
	(Thousand Tonnes)		
Pelagics	670	2,330	3,000
Demersal	160	460	620
Cephalopods	60*	140	200
Tuna	50*	115	165
Shrimp	7	8	15
	947	3,053	4,000

*Estimate based on the % distribution of other species.

Source: Based on data from Everett, et al (1980) and rounded to add up to 4 million tonnes.

TABLE 2

makes the fishery extremely complex. Artisinal and semi-industrialized fleets from West African countries, as well as industrialized fleets from African, European and Asian countries all compete for the resources.

Estimates indicate that the biological potential, i.e., maximum sustainable yield (MSY) for the entire East Central Atlantic Zone is in the vicinity of 4 million tonnes, with the richest areas existing between Morocco and Guinea in the northern part of the zone.[9]

In terms of abundance, the major species are the pelagics, which account for about 75 percent of the area's MSY. Demersal species follow, with about 15 percent; other species consisting of cephalopods, tuna and shrimp (Table 2), make up the remaining 10 percent.

The major species of the coastal pelagics, whose MSY is estimated at 3 million tonnes, are sardines, sardinella, mackerel and horse mackerel. All of these, with the exception of sardines, are distributed throughout the region, but the most productive area is between Mauritania and Sierra Leone. The demersal species, with an MSY estimated at 620,000 tonnes, consists of hake (Morocco to Sierra Leone), sea breans (Mauritania to Guinea), big eye grunter (off Senegal and Gambia) and mixed stocks (virtually all along the coast with the most productive area between Mauritania and Guinea).

The world's largest supply of cephlapod resources, consisting of octupus, cuttlefish and squid, is found in this area. Pink shrimp is the most important crustacean resource

and is found near river mouths, lagoon entrances to the sea (particularly in the large river areas from Senegal to Nigeria), and in offshore waters.

The major characteristics of the resource base in the area are as follows:

a) Most stocks are highly exploited, either close to their MSY or beyond (overexploited), with the result that only a few stocks have some potential for further development;
b) The pelagics are highly migraatory moving extensively throughout the region.
c) There is considerable intermixing of stocks within the area.

These characteristics indicate that there are, and will continue to be, considerable difficulties with the management of the resources, particularly on a single country or single species basis, which has generally been the traditional management approach.

3.0 UNCLOS III: EXPANDED MARITIME JURISDICTION

3.1 The Political and Economic Context

African states in general, and those of West Africa in particular, have a common background in three areas: colonial heritage, recent independence and under development.[10] Today, great differences in language, culture, political ideology and economics have all contributed to the persistent difficulties encountered by most efforts directed at regional cooperation.

However, with respect to some issues, in particular the law of the sea negotiations and the UNEP Action Plan, a certain degree of willingness to cooperate has been demonstrated by the states of West Africa.[11]

The basic economic characteristics of West Africa are: the dependence of the region on primary industries, particularly agriculture, for its economic growth; relatively poor infrastructural facilities, such as good transportation networks, energy facilities, etc., which are necessary for industrial development and economic diversification; a great dependence on imports of manufactured goods, food and energy (oil and gas), while exporting mainly primary products; and high levels of population growth that results in a rapidly increasing labour force with a relatively low level of education and skills.[12] These economic characteristics, accompanied by political and social unrest, as well as the language differences, have been responsible for serious developmental problems in the region as a whole.

It is against this backdrop that we will briefly examine the new law of the sea as reflected in UNCLOS III and the emerging state practice associated therewith.

3.2 UNCLOS III

3.2.1 Background

As noted above the coastal states of West Africa have a common background in three areas: recent independence, colonialism, and underdevelopment. In fact of the 49 African

states, no less than 40 became independent after the 1958/1960 Law of the Sea conferences and therefore played no part in the formation of the conventional law.[13] These conferences continued to place a great deal of emphasis on freedom of the seas, reflecting the domination of the maritime powers and their primary concern over maintaining unrestricted operation of their naval and fishing fleets. Therefore UNCLOS III was viewed by the newly independent but underdeveloped nations as a real opportunity to establish a new law of the sea designed to accommodate their interests. The African states greatly influenced the negotiations at UNCLOS III both as a group and as individual states. The 49 African states not only made up one of the dominant groups at the conference, but also constituted a significant bloc in the Group of 77.

The Convention[14] deals with many critical issues regarding the rights that coastal states may exercise in the areas adjacent to their shore. These rights and responsibilities vary depending on which of the enumerated regimes of ocean space is applicable. These regimes include: internal waters; archipelagic waters; territorial sea; and exclusive economic zone. In order to evaluate the fisheries development potential as a result of expanded jurisdiction we should first take a brief look at what rights and responsibilities accrue to the coastal state in each of the regimes.

3.2.2 Internal Waters

Internal waters are those marine areas adjacent to the shore over which the coastal state has complete sovereignty. The seaward boundary of internal waters is also the baseline from which the breadth of the territorial sea is measured. Article 5 of the Convention reaffirms the accepted practice, as set out in the 1958 Convention on the Territorial Sea,[15] which dictates that normally baselines are to be measured from the low-water line along the coast. When such baselines are drawn, no internal waters are created, as there are generally no waters landward of this line, save those areas covered during high tide periods. The Convention, however, provides for a number of derogations from this general rule, the most important of which is contained in Article 7 on straight baselines which states that in localities where the coastline is deeply indented or if there is a fringe of islands along the coast in its immediate vicinity then the baseline can be drawn by joining appropriate points.

Because of the many large rivers in the region, Article 9 is also of particular importance to West Africa. It states that if a river flows directly into the sea, the baseline shall be a straight line across the mouth of the river between points on the low waterline of its banks.

The cummulative effect of the baseline provisions is that states may include significant offshore areas within their internal waters. This is of particular importance to many West African states since the areas immediately off the coasts of

most states are often the most productive in terms of both living and non-living resources. Since the Convention accords the coastal state the greatest degree of sovereignty over its internal waters, coastal states will benefit significantly from the ability to classify more offshore areas as internal waters. In addition, the placement of baselines further seaward also has the effect of extending the outer limits of the territorial sea, contiguous zone and exclusive economic zone.

3.2.3 Archipelagic Waters

Part IV of the Convention permits archipelagic states to draw straight baselines joining the outermost points of the outermost islands. Archipelagic states are defined in article 46(b) as "a group of islands, including parts of islands, interconnecting waters and other natural features which are so closely interrelated that such islands, waters and other natural features form an intrinsic geographical, economic and political entity or which historically have been regarded as such." Once drawn, archipelgaic baselines are the point from which the breadth of the territorial sea and EEZ are measured. Inside the baseines is the regime of archipelagic waters over which the archipelagic state exercises complete sovereignty subject to traditional fishing rights (Art. 51) and innocent passage.

The importance of this regime with respect to fisheries is that within its archipelagic waters the archipelagic state is not subject to the duties and obligations as they would if they were merely part of the EEZ. The drawing of archipelagic

baselines will also tend to extend the seaward limits of the territorial sea, contiguous aone, EEZ and continental shelf regimes.

3.2.4 Territorial Sea

Article 3 of the Convention states that the territorial sea is to have a breadth of 12 nautical miles from the baseline, which could be either the normal baseline (i.e., the low water mark) the straight baseline or an archipelagic baseline. Within the territorial sea the coastal state has sovereignty over the sea as well as the seabed and subsoil. However, this sovereignty is subject to the right of innocent passage of foreign vessels. Innocent passage is a concept which has had a long and complex history in international law. For our purpose suffice it to say that the convention requires that innocent passage must be continuous, expeditious and not "prejudicial to the peace, good order or security of the coastal state".

The most important aspect of the territorial sea regime as far as fisheries is concerned is that the coastal state has complete sovereignty over management and exploitation of the fisheries therein.

3.2.5 Exclusive Zone

The development of the Exclusive Economic Zone (EEZ) concept is probably one of the most important accomplishments of UNCLOS III. The first draft article on the EEZ was tabled at the summer session of the Seabed Committee in July 1972.[16] This draft article was first developed by the Kenyan delegation

STATE RIGHTS AND OBLIGATIONS WITH RESPECT TO FISHERIES IN THE EEZ

RIGHT OR OBLIGATION	SOURCE	ACTION REQUIRED
1. Establish 200 mm EEZ	Art.57	Jurisdictional Legislation
2. Delimitation of EEZ by agreement; a provisional agreement	Art.74	Bilateral and multilateral agreement
3. Compilation and publication of charts: showing outer limits of EEZ and lines of delimitation	Art.75	Cartography
4. Establish allowable catch based on MSY	Art.61(1)	Determination of MSY
5. Ensure against over explortation through conservation and management and cooperate to this end	Art.61(2-3)	Cooperative fisheries research and management
6. Exchange of scientific information, catch and fishing effort statistics etc.	Art.61(5)	Domestic compilation of fisheries information
7. Cooperate to ensure conservation and development of stocks occuring within the EEZ of two or more coastal states	Art.63	Identification of straddling stocks and cooperative arrangements bilateral, multilateral, etc.
8. Cooperate with respect to ensuring conservation and promotion of optimum utiliztion of highly migratery species	Art.64	identification of migration routes and cooperative research and management

TABLE 3

for submission to the African States Regional Seminar on the Law of the Sea at Yaounde.[17] In 1973 the Organization of African Unity in Addis Ababa drafted a declaration which contained the concept of the economic zone and some of its principles.[18] When the first substantive session of UNCLOS III convened in Caracas the following year, the "Group of 77" stood ready to accept the EEZ concept and to support it in the negotiations.

The principle behind the EEZ was based on the notion that there were various functions to be served and that the adjacent coastal state should be the one to serve them. This functional approach to expanded maritime jurisdiction was to form the basis of the EEZ concept. In addition, the prolonged period of negotiations at the Conference made it subject to the influences of emerging state practice. Thus, state practice influenced the process of diplomacy at the Conference which in turn further influenced state practice. This interconnected cycle of stimulus-response-stimulus not only served to create a revolution in state legislative practice, but also served to accelerate the acceptance of the new concept into the existing legal framework.[19]

Under the Convention the coastal state, as custodian of the area enclosed in its EEZ, is accorded a number of rights and responsibilities. These are summarized in Table 3. Under Article 57 of the Convention, a coastal state has the right to an exclusive economic zone that shall not extend beyond 200 nautical miles from the baselines from which the territorial

sea is measured. The rights which the coastal state may exercise in this zone include:

a) Sovereign rights for:
   i) exploring
   ii) exploiting
   iii) conserving and managing all natural resources, whether living or non-living, in the
      i. seabed
      ii. subsoil
      iii. superjacent waters
b) Sovereign rights for the control of other activities within the zone such as the production of energy from the water currents and winds;
c) Jurisdiction with regard to the establishment of artificial islands; installations and structures;
d) Jurisdiction over marine scientific research; and
e) Jurisdiction over the protection and preservation of the Marine Environment.

The most important of these rights with respect to the fishery resources of West Africa is the jurisdiction to exploit, conserve and manage the living resources within the EEZ. This jurisdiction carries with it certain responsibilities. Article 61(1) gives the coastal state the right to determine the total allowable catch (TAC) of the living resources in its EEZ. In making this determination however, the coastal state must ensure that the species within

the zone are managed to ensure the maximum sustainable yield (MSY) of each species. Article 61(2) requires the coastal state to take into account the best scientific evidence available to it, and to ensure, through proper conservation and management measures that the living resources within the EEZ are not endangered by overexploitation.

Once the coastal state has determined the MSY of the living resources within its EEZ, it must then determine its own capacity to harvest these resources. Where the coastal state does not have the capacity to harvest the TAC, it is required to allocate this surplus to other states based on a number of factors including: the significance of the living resources of the area to the economy of the coastal state concerned; the rights of landlocked states; the rights of states with special geographic characteristics; the requirements of developing states in the subregion or region in harvesting part of the surplus and the need to minimize economic dislocation in states whose nationals have habitually fished in the zone or which have made substantial efforts in research and identification of stocks.

Despite this apparent encroachment on coastal state jurisdiction, the coastal state is accorded substantial control over activities within its EEZ and may pass legislation dealing with a number of activities including: licencing of fishermen and vessels; determining what fish can be caught and how much can be caught, regulating seasons and gear types, requiring catch and effort statistics and specified fisheries research

programmes; placing observers and trainees of the coastal state on foreign vessels; the landing of fish in parts of the coastal state, terms and conditions of joint ventures; requirements for the training of personnel and transfer of technology and enforcement procedures.

All of these areas of regulatory jurisdiction are important mechanisms available to the coastal state in promoting the development of their own fishing industries. However the costs, in terms of expertise and infrastructure, of designing and implementing a viable fisheries management system are considerable and must be weighed against the potential benefit to be derived.

3.3 West African State Practice in Areas of Expanded Jurisdiction

This section will take a brief look at state practice in the region. An understanding of what expansion legislation has been promulgated and what kinds of regional initiatives have been taken will provide the necessary background for examining the prospects for fishery development.

3.3.1 National Initiatives

The various national claims to expanded jurisdiction are outlined in Table 4. Seven states in the region have established baselines from which the breadth of the territorial sea is measured. Guinea, Guinea Bissau, Mauritania and Senegal have established straight baselines. Cameroon has established bay closing lines and both Cape Verde and Sao Tome and Principe

TABLE 4: National Claims to Maritime Jurisdiction

STATE	NATIONAL CLAIMS (PROMULGATED)					
	BASELINES	TERRITORIAL SEA	CONTIGUOUS ZONE	FISHERIES ZONE	EEZ	CONTINENTAL SHELF
Benin		200 nm (1976)				
Cameroon	Bay Closing Lines (1962)	50 nm (1974)				100 nm (1976)
Cape Verde	Archipelagic Baselines (1978)	12 nm (1978)			200 nm (1978)	
Gabon		100 nm (1972)		150 nm (1972)		Not Specified (1963)
Gambia (The)		50 nm (1971)	12 nm (1968)	200 nm (1978)		Not Specified (1966)
Ghana		200 nm (1977)				100 nm or Limit of Exp. (1973)
Guinea	Straight Baselines (1964)	12 nm (1980)			200 nm (1980)	
Guinea Bissau	Straight Baselines (1974-78)	12 nm (1978)			200 nm (1980)	
Ivory Coast		12 nm (1977)			200 nm (1977)	200 nm (1967)
Liberia		200 nm (1977)				200 nm or Depth of Exploitability (1969)
Mauritania	Straight Baselines (1967)	70 nm (1978)			200 nm (1978)	200 nm or Depth of Exploitability (1971)
Nigeria		30nm (1971)			200 nm (1978)	" (1971)
Rio Muni (Equatorial Guinea)		12 nm (1970)				" (1970)
Senegal	Straight Baselines (1972)	150 nm (1976)		200 nm (1976)		200 nm or Edge of Cont. Margin (1978)
Sierra Leone		200 nm (1980)				
Togo		30 nm (1971)		200 nm (1977)		200 nm (1977)
Sao Tome and Principe	Archipelagic Baselines (1978)	12 nm (1980)			200 nm (1978)	

SOURCE: U.S. Dept. of State, "Limits in the Seas", 1982.

have claimed archipelagic status and drawn archipelagic baselines accordingly.

Nowhere is the divergence in state practice with respect to the seaward limits of the territorial sea more evident than in West Africa. All states in the region have claimed a territorial sea, the breadths of which range from 12 nautical miles to 200 nautical miles with many others in between. In 1969 a survey conducted by the Food and Agricultural Organization (FAO) showed that of the 17 independent coastal states in the region, 13 claimed fisheries jurisdiction to 12 miles or less, the remainder 100 and 130 miles. Eight years later an update report showed that all but three of the states in the region had extended their fisheries jurisdiction to beyond 12 nautical miles.[20] Of the states claiming limits of 200 miles; seven (Cape Verde, Guinea-Bissau, Ivory Coast, Mauritania, Nigeria, Sao Tome and Principe and Sierra Leone) made the claim in terms of an exclusive economic zone, two claimed 200 mile fishing zones (Gambia, Senegal) and four states had claimed extended territorial sea limits to 200 nautical miles (Benin, Ghana, Guinea and Liberia).

3.3.2 Bilateral Initiatives

In the past, the activities of African fishermen beyond the boundaries of their own countries was of minor importance. The fishing, mostly artisanal in nature, was confined primarily to national coastal areas. There were some movements beyond national boundaries which were carried out under tacit agreements or de facto tolerance. The industrial fleets from

non-West African countries were active in the region but operated outside existing territorial limits.

In recent years, however, the extension of coastal state jurisdiction combined with the increasing mobility of fishing fleets and the intensification of fishing effort have resulted in many bilateral fisheries agreements. These agreements can be divided into two major categories. First, there are those agreements between a West African state and another state outside the region. Second, there are a number of agreements between states in the region.

The first type of agreement arose from the fact that resources that were previously exploited freely by the industrialized fleets were now 'owned' by coastal nations. Since estimates place approximately 99% of the world's commercial fishery stocks within 200-mile zones, negotiation of continuing access to these stocks was imperative.[21] Regardless of their long-range fishery development ambitions, the coastal states of West Africa recognized the short term advantages of entering into access agreements with the industrialized fleets. These agreements embody a full range of anticipated benefits: food, information, employment, development and income.[22]

Some agreements require the provision of fish to the domestic markets, either in the form of contributions to joint ventures or directly as an access fee. Information in the form of stock assessment research results is sought in all of the agreements. Employment is addressed directly by a requirement that personnel be trained in fishery related fields and

indirectly by the construction of facilities and the supply of equipment and services. Most agreements also seek some form of assistance or another in developing the fishery of the coastal state over the long term. This can take the form of supply and financing of vessels and gear; the development and improvement of ports; and the construction of processing and handling facilities.

As usual there are some costs to the coastal state. These take the form of monitoring and surveillance costs as well as the reduction of local opportunity to harvest a finite resource. Copes has pointed out the impacts on local fishermen that have resulted in decreased catch rates and profits:

> A foreign fishery in a coastal state's waters will often have a directly adverse effect on the operations of the domestic fleet, even if the foreign vessels are engaged in a directed fishery for surplus stocks only. If the surplus fish is part of a stock complex of a particular species that is also utilized partially by the domestic fleet, the foreign operations will reduce stock density and lower the catch power unit of effort to the domestic fleet also. If the foreign vessels are fishing for species not taken by the domestic fleet, they may still take by-catches of species utilized by the domestic fleet. They may also interfere with domestic operations by damaging domestic gear or causing a navigation hazard.[23]

The second category of agreement, those between states in the region, can be divided into two types: reciprocity agreements and those without a reciprocity clause.

The reciprocity agreements are normally made between neighbouring states with similar fishing interests and mobile

fleets. Though they may contain certain restrictions with respect to specific fishing areas and vessel size, they basically provide for mutual access to each others stocks. The agreements may also contain supplementary provisions on the development of cooperation in various sectors connected with fisheries such as: port facilities; coordination of surveillance and control activity; commercial privileges under which each state commits itself to export to third countries only such fishes for which no buyers are found in the other country.

Agreements without a reciprocity clause are used in situations where one country has abundant fishery resources but limited harvesting capacity and another country that lacks resources but has the manpower and means to fish beyond its own EEZ. These agreements are more similar to the type used with distant water fleets. In some cases access is accorded in return for payment of fees and a contribution to the development of the granting states fisheries. For example in agreements between Mauritania and Ghana and Nigeria this contribution includes the training of fisheries technicians and fishermen, as well as participation in improvement of infrastructure and the obligation to deliver a certain percentage of the catch to processing plants in Mauritania. Other agreements (e.g. Ivory Coast and Senegal) stipulate strict host country crewing requirements. In other cases, the scope of the agreement goes far beyond the fisheries sector and is more akin to an economic cooperation agreement. For

example, there is an agreement between Mauritania and Ivory Coast where Mauritania grants access to vessels from Ivory Coast. In exchange, Ivory Coast grants exempts Mauritania from all customs duties and taxes on importation for fishery products as well as other food and agricultural products and minerals.

3.3.3 Regional Agreements

There are currently 30 regional or subregional organizations in West Africa, the majority of which are in the trade and finance field.[24] Also quite common are multi-sectoral development authorities which are usually concerned with the overall development of a specific geographical area. This movement toward "collective self-reliance" is the result of a number of catalytic forces ranging from dramatic changes in the world economy to influences by external forces including: foreign governments; national and international aid agencies; private foundations; and transnational corporations.

Among this large and diverse group of organizations, several emerge as being extremely important as far as fisheries development is concerned. These are the Communitee Economique de l'Ouest (CEAO) (West African Economic Community); the Fishery Committee for the Eastern Central Atlantic (CECAF) and the United Nations Environmental Programme (UNEP).

The CEAO is a relatively recent organization brought into force by a treaty signed at Abijan on April 17, 1973, by the Ivory Coast, Mali, Mauritania, Niger, Senegal and Upper Volta. The executive organ of CEAO is the General Secretariate

located at Owagadougow. This body has been given a mandate to promote the conservation and development of fisheries resources and to harmonize the fishing legislation of its member states.[25] At its May 1976 meeting, the Council of Ministers of CEAO adopted several measures pertaining directly to the management of living resources. These measures call in particular for a complete consensus on fishing gear, the utilization of which needs to be regulated; an assessment of stocks of certain fish species, the catch of which must be limited; an in-depth study of the rights and obligations of each member with respect to fishing in territorial waters and waters for which other members have laid down regulations; a strengthening of subregional cooperation; and the adoption of measures to preserve the fisheries resources of the subregion.[26]

CECAF was created in 1969 under Article VI-2 of the Constitution of the Food and Agricultural Organization. It is composed of 29 member states, 19 of which are African coastal countries. One of the principal functions of the organization is to assist member governments in establishing the scientific basis for regulatory measures aimed at conservation of the region's living resources.[27] In 1970 immediately following the second session of CECAF a consultation on the conservation of Fishery Resources and the Control of Fishing was held. At this meeting all delegations agreed that zones should be instituted in which "coastal states would exercise exclusive fishery rights and where foreign fishing vessels would not be allowed

to operate except by obtaining permission of the coastal state through negotiations.[28]

Between the second and third session of CECAF many coastal states proclaimed extended fisheries zones of varying breadths. In response to this the CECAF created a sub-committee, open only to coastal countries, to deal with the management of resources within the limits of national jurisdiction. Its primary function was to "recommend appropriate conservation measures and to provide advice on the coordination of these measures with those in effect beyond the limits of waters under national jurisdiction".[29] Current initiatives by the sub-committee have been successful in aligning particular countries with particular fisheries issues and organizing meetings to permit the states concerned to devise management schemes.

In 1981, 14 states of the West African region, stretching from Mauritania to Namibia signed a comprehensive agreement for the protection and management of the marine environment.[30] The agreement consists of three parts:

1. Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the West and Central African Region.
2. Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region.
3. Protocol Concerning Cooperation in Combatting Pollution in Cases of Emergency.

THE CONTRIBUTION OF THE ARTISANAL AND INDUSTRIAL SECTOR TO LANDINGS AND EMPLOYMENT, SELECTED WEST AFRICAN COUNTRIES

	Artisanal Fisheries		Industrial Fisheries	
Country	Per cent of Landings	Estimated No. of Fishermen*	Per cent of Landings	No. of Fishermen
SENEGAL	67	46,000	33	3,000
GAMBIA	66	3,000	34	160
CAPE VERDE ISLANDS	75	2,800	25	337
GUINEA BISSAU	71	1,100	29	100
GUINEA	29	4,000	71	160
SIERRA LEONE	92	16,000	8	200
LIBERIA	83	2,900	17	240
IVORY COAST	33	20,000	67	510
GHANA	72	80,000	28	3,600
		175,800		8,307

*Estimated based on data from J.G. Sutinen et al (op. cit.) and on per capita.

TABLE 5

APPROXIMATE NUMBER OF LOCALLY BASED VESSELS,
SELECTED WEST AFRICAN COUNTRIES, 1978

Country	Tuna Clippers	Distant Water Trawlers	Trawlers	Purse Seiners	Gillnetters and Longliners	Total
SENEGAL	35	-	84	12	15	146
GAMBIA	-	-	4	12	-	16
CAPE VERDE ISLANDS	20	-	-	3	40	63
GUINEA BISSAU	-	-	10	-	-	10
GUINEA	-	-	16	-	-	16
SIERRA LEONE	-	-	20	-	-	20
LIBERIA	-	-	24	-	-	24
IVORY COAST	6	-	30	21	20	77
GHANA	33	18	360	-	-	411
	94	18	548	48	75	783

Source: J.G. Sutinen et al, pp. 30 & 35.

TABLE 6

Though the Action Plan does not directly address the issue of fisheries management and development, the importance of this cooperative effort towards conservation and protection of the marine enviornment cannot be overemphasized for without a healthy habitat there will be no fishery to develop.

To this point discussion has revolved around expanded jurisdiction and some of the mechanisms that are in place to deal with fishery development therein. We will now take a look at the socio-economic aspects of the West African fishery and attempt to make some realistic projections as to its potential as a source of protein and international exchange.

4.0 THE FISHERIES OF WEST AFRICA

4.1 The Structure of the West African Fishery[31]

The West African fishing industry consists of two major sectors: (1) an artisinal fisheries sector the vast majority of fishermen operate by utilizing small boats, along with primitive fishing, processing and marketing methods, and (2) an industrial sector that uses large vessels and modern fish processing plants which have well-organized marketing channels. This industrial sector is served by both a West African and a foreign fleet.

Total landings of fish, in the area from Senegal to Ghana, increased from 582 thousand tonnes in 1971 to 754 thousand tonnes in 1978. Senegal and Ghana predominated the landings from the area. During the period, they each had over 200 thousand tonnes a year and their combined landings

accounted for 73 percent of total landings in 1980. Of the other countries, only the Ivory Coast and Sierra Leone had landings averaging over 5 thousand tonnes a year. Liberia, Cape Verde Islands, Guinea Bissau, Guinea and Gambia are all relatively small fish producing nations.

The artisinal fisheries constitute the most important fisheries sector in the West African fisheries in terms of the volume of landings (see Table 5). Artisinal landings contributed over 66 percent to total landings for all the West African countries with the exception of the Ivory Coast and Guinea where the industrial sector contributd 67 percent and 71 percent respectively.

The industrial fishing sector in the region is of a small to medium scale in comparison with the large scale operations (involving, in some cases, the use of factory ships) of foreign fleets in the area. The local fleets, for the most part, exploit inshore stocks using small trawlers and purse seins. Only Ghana and Senegal have large scale distant water trawlers (Table 6).

The local industrial fleet, which had expanded during the 1970s, totalled about 800 vessels in 1978 and was crewed by about 8 thousand fishermen. Purse seining for coastal pelagics from small to medium sized vessels constitutes the most important activy of this fleet. However, a large segment of it, consisting of trawlers and tuna vessels, exploit the shrimp and tuna resources for export. Demersal fish landings are, in fact, primarily a by product of shrimping operations. Although

no studies are available on the economic performance of the industrial fleet, its expansion during the 1970s indicates that good returns and incomes were probably being realized.

4.2 Fish Marketing in West Africa

The processing, marketing and distribution of fish in West Africa are dependent on a number of factors, such as the overall demands for fish and fish products by consumers in the various countries, the supply of fish and the structure of their industries, and, resulting from the demand-supply situation, market prices for fish and fish products. In general, the demand for fish is high in West Africa, and consequently, it is the supply situation in respective countries that affects the consumption and marketing patterns.

The domestic market for fish is characterized by the following:[32]

1. The great dependence on the domestic fishery for supply, since fish imports, except for the landings by foreign fleets, are relatively low;
2. A greater per capita consumption of fish than of meat in all states for which data are available (this is due to fish prices being lower than meat prices);
3. Fish and meat scarcities exist at the same time, primarily during the rainy season from June to September, with the result that their respective price trends tend to reinforce each other; and
4. At any point in time, the pattern of fish consumption in the region is uneven.

IMPORTS AND EXPORTS OF FISH PRODUCTS, 1977-1980

COUNTRY	IMPORTS 1977 Q MT	1977 V '000$US	1978 Q MT	1978 V '000$US	1979 Q MT	1979 V '000$US	1980 Q MT	1980 V '000$US
SENEGAL	12,982	10,567	11,551	9,693	11,708	13,646	16,860	19,388
GAMBIA	300	238	300	255	300	280	300	280
CAPE VERDE ISLANDS	100	99	303	363	303	425	303	425
GUINEA BISSAU	268	140	268	152	268	157	210	298
GUINEA	2,800	602	2,800	593	2,800	675	2,800	675
SIERRA LEONE	7,774	1,484	7,774	1,617	7,774	1,606	7,774	1,606
LIBERIA	16,384	7,463	16,383	7,417	16,383	7,417	16,383	7,417
IVORY COAST	80,129	31,728	84,548	42,831	109,440	58,602	109,440	58,602
GHANA	76,600	25,668	76,600	25,668	76,600	25,668	76,600	25,668
TOTAL	197,337	77,969	200,527	88,589	225,576	108,476	230,670	114,859

COUNTRY	EXPORTS 1977 Q MT	1977 V '000$US	1978 Q MT	1978 V '000$US	1979 Q MT	1979 V '000$US	1980 Q MT	1980 V '000$US
SENEGAL	57,286	63,434	62,168	75,532	76,789	111,417	84,036	154,080
GAMBIA	17,571	1,870	23,415	2,247	16,814	2,136	17,054	4,336
CAPE VERDE ISLANDS	725	701	480	552	480	645	480	645
GUINEA BISSAU	1,647	1,542	1,647	1,679	1,647	1,724	815	3,964
GUINEA	2,400	591	2,400	582	2,400	663	2,400	663
SIERRA LEONE	4	22	4	24	4	24	4	24
LIBERIA	829	2,434	1,524	2,574	152	2,574	1,524	2,574
IVORY COAST	20,419	22,102	21,473	25,241	20,683	39,493	20,683	39,493
GHANA	2,200	637	2,200	637	2,200	637	2,200	637
TOTAL	103,131	93,333	115,311	109,068	121,169	159,313	129,196	206,416

All figures are FAO Estimates

Source: FAO, YEARBOOK OF FISHERY STATISTICS 1980, Vol. 51

TABLE 7

The trade in fish products for the years 1977 to 1980 reveals that the northern countries such as Senegal, Gambia, Cape Verde and Guinea Bissau, have a positive trade balance with regard to fisheries products, whereas those to the south, from Sierra Leone to Ghana, are net importers of fish (Table 7). The Ivory Coast and Ghana are the largest net importers in the region. The magnitude of net imports indicates that there is considerable potential for import substitution for fish in the region. However, an interesting feature of the market is that the West African states export a large percentage of domestic production, mainly, their high valued fisheries products such as shrimp and tuna, and import large quantities of relatively low valued fish from other countries to meet their domestic market needs.

4.3 Growth Prospects, Fisheries 1983-1990

The volume of fish production in West Africa remained relatively stable during the 1970s even though the value, judging from the value of products produced, increased as a result of higher prices. During the 1980s, there is the likelihood that the volume of landings will increase because of the replacement of foreign fishing vessels by local fleets and because of joint-venture arrangements with foreign enterprises, which would ensure that a certain proportion of the catch from foreign vessels would be processed in West African plants. However, the potential for fisheries development will depend on the demand and supply situation during the period.

Demand studies for fish in West Africa during the 1970s indicated an upward trend in demand due to population and income increases of about 6 percent a year.[33] However, during the later part of the 1970s, there seems to have been a downturn in demand, judging from the domestic disappearance. This was probably due to a shift along the demand schedule as a result of higher real prices, rather than to a downward shift in this schedule, which has been responsive to population and income increases. Real fish prices increased in 1981 but began to decline in 1982; the consequent expectation is that demands for fish in West Africa should increase at about the same rate as population growth for the period 1983-1990. In terms of landed weight equivalent, the demands for fish should increase from about 1.2 million tonnes in 1983 to 1.6 million tonnes by 1990 (Table 8).

To meet the demands for fish, the region will have to rely on its domestic fishing industry and on imported fisheries products. Based on an MSY of 950 thousand tonnes for the region and a regional fisheries policy aimed at displacing the foreign fleet by domestic fleets during the period, it is assumed that regional landings would probably keep pace with the rate of growth of population. However, the regional supply situation resulting from this indicates that the region's fleet could attain its MSY by the end of the 1980s, after which there will be an increasing reliance on imported products. The demand-supply situation for the period suggests the possibility that demand could exceed the supply situation in the region,

TABLE 8

PROJECTED DEMAND-SUPPLY SITUATION FOR FISH
IN WEST AFRICA'S GULF OF GUINEA REGION 1983-1990

	Regional Demand	Regional Supply	Net Imports	Products Produced	Value of Products Produced	Employment in the Fisheries Sector
	('000 tonnes landed weight)			('000 tonnes product weight)	($US million 1983)	'000
1983	1230	800	430	210	350	730
84	1270	830	440	215	380	740
85	1320	850	470	220	420	750
86	1360	880	480	230	450	760
87	1410	910	500	240	490	770
88	1460	940	520	244	540	775
89	1510	950	550	250	560	780
1990	1560	950	610	250	590	780

with the result that real price increases for fisheries products are likely during the period.

The expansion projected for the West African fisheries would increase output and employment from this sector during the period 1983-1990. The volume of products produced from the domestic industry could increase from 210 thousand tonnes, valued at US$ 350 million, in 1983 to 250 thousand tonnes, valued at $780 million (in constant 1983 dollars) by 1990 an average rate of real growth of nearly 9 percent a year for the industry. Total employment, i.e., in the primary, secondary and tertiary sectors, could increase from 730,000 to 780,000 during the period. The fishing industry can therefore be a growth industry during the period but its growth prospects will begin to diminish towards the end of the period as the regional MSY is attained. This could lead to attempts to find alternative sources of fish by either aquacultural or maricultural activities or the utilization of underutilized species.

CONCLUSION

The development potential of the coastal states of West Africa could be increased by a rational and integrated approach to the development of the region's fishery resources. If one superimposes the complex physical and political geography of the region atop the dynamic and transboundary nature of the region's fisheries resources, it is easy to see that the road to their successful management and development lies in a

cooperative regional approach. The living marine resources of the region know no boundaries and the system designed to regulate their exploitation must recognize this fact.

The Law of the Sea Convention recognized that this type of situation would exist in enclosed or semi enclosed areas. Article 123 provides that states bordering on enclosed or semi enclosed seas should cooperate with each other in the exercise of their rights and in the performance of their duties under the convention. To this end the convention provides that they shall endeavour directly or through an appropriate recognized organization:

> (a) to coordinate the management, conservation, exploration and exploitation of the living resources of its sea;
>
> (b) to coordinate the implementation of their rights and duties with respect to the protection and preservation of the marine environment;
>
> (c) to coordinate their scientific research policies and undertake where appropriate joint programmes of scientific research in the area;
>
> (d) to invite, as appropriate, other interested states or international organizations to cooperate with them in furtherance of the provisions of this article.

In conclusion, expanded jurisdiction does not guarantee a healthy and profitable fishing industry. The transboundary nature of the region's fishery resources and fishing practices requires the adoption of a cooperative institutional structure not only to manage these resources but also to permit and encourage intra-regional trade and marketing. However, the

socio-economic, political and cultural diversity of the states in the region combined with the ethnic diversity within the various states, implies that no single unitary approach to fishery development is possible. Solving this seemingly irreconcilable paradox will require a great deal of ingenuity and cooperation by the states in the region. They will not be able to do this alone and the developed countries must coninue to support activities to this end.

FOOTNOTES

1. Classification of the Coastal Environments of the World, Part II Africa, Technical Report No. 3 Office of Naval Research Geography Programme, U.S. Government, February 1973. See also Pritchard, R.M., Africa: The Geography of a Changing Continent (New York: Africana Publishing Corp., 1971) at p. 16.

2. See UNEP, "Environment Management Problems in Resource Utilization and a Survey of Resources in the West African Region," UNEP/1G.22/INF.6, 16 January 1981.

3. Ibid.

4. See, Uchipi, E. et al., "Continental Margin Off Western Africa: Senegal to Portugal" (1976) 6(5) AAPG Bull. 809 at pp. 814-825 and Emery, K. et al.

5. See, "Continental Margin Off Western Africa: Angola to Sierra Leone" (1975) 59(12) AAPG Bull., 2209 at pp. 2210-2220.

6. See, Wooster, U.S., A. Bakum and D. McLain, "The Seasonal Upwelling Cycle along the Eastern Boundary of the North Atlantic" 34(2) Journal of Marine Research (1976) pp. 131-141 and Bakum, A., "Guinea Current Upwelling" 271 Nature (1978) pp. 147-150.

7. See, Physical Oceanography of the Tropical Atlantic

During GATE, A. During, F. Ostapoff and J. Merle eds. (Univ. of Miami, 1980, available from IOC, UNESCO).

8. Supra note 6.

9. See, Gulland, J.A., The Fish Resources of the Ocean, Rome: FAO (1971). See also, Everett, G.V. et al., "A Summary Overview of Fisheries in the CECAF Region" CECAF/TECH/80/21,Dakar, (1980).

10. See, Ferreira, P.S., "The Role of African States in the Development of the Law of the Sea at the Third United Nations Conference" 7 Ocean Dev. and Int'l Law Journal, No. 1-2 at p. 89.

11. For a more detailed discussion on regional cooperation in these and other areas see, Renninger, John P., Multinational Cooperation for Development in West Africa, Pergamon Press, 1979.

12. See, Mitchell, C. and P. Underwood "The New Law of the Sea: Prospects for Marine Resource Development in West Africa" (Dalhousie Ocean Studies Programme, 1983 in press).

13. Supra note 10 at p. 90.

14. Third UN Conference on the Law of the Sea, UN Doc. A/CONF.62/122, 7 October, 1982.

15. See 516 U.N.T.S. 205.

16. "Draft Articles on the Exclusive Economic Zone Concept" (UN Doc. A/A.C. 138/A.C. 11/L.10).

17. The results of this Seminar were the Conclusions in the Report of the African States Regional Seminar on the Law of the Sea, Yaounde, 1972 (U.N. Doc. A/A.C.138/79). Seventeen African states attended the Yaounde Seminar.

18. See, T. Clingan, "The Emerging Law of the Sea: The Economic Zone Dilemma" (1971), 14 San Diego L. Rev. 530 at p. 539.

19. See Mitchell, C. et al. "The Integration of Marine Space in National Development Strategies of Small Island States: The Case of the Caribbean States of Grenada and St. Lucia," Dalhousie Ocean Studies Programme, Halifax, Canada (1982).

20. See, FAO, "CIDA/FAO/CECAF Seminar on the Changing Law of the Sea and the Fisheries of West Africa," FAO/TF/INT 180 (a)(Can) at p. 55.

21. Gulland, "Developing Countries and the New Law of the Sea," Oceanus Vol. 22 (1979), pp. 36-42.

22. For an excellent discussion of the relative cost and benefits of these types of agreements see Black, William L. "Soviet Fishery Agreements with Developing Countries" 7 Marine Policy (No. 3) 1983 at p. 163.

23. See Copes, P. "The Impact of UNCLOS III on Management of the World's Fisheries" 5 Marine Policy No. 3, July 1981, pp. 217-228 at p. 224.

24. See Renninger, John P., Multinational Cooperation for Development in West Africa, Pergamon Press 1979 at p. 25.

25. Carroz, S.E., "Regional and Subregional Arrangements for the Management of Living Resources off the Coast of West Africa" in CIDA/FAO/CECAF Seminar on the Changing Law of the Sea and the Fisheries of West Africa, 1978, Doc. FAO/TF/INT 180(a)(Can) at p. 30.

26. Ibid.

27. Ibid. at p. 25.

28. Ibid. at p. 26.

29. Ibid.

30. Conference of Plenipotentiaries on Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region, Final Act doen at Abidjan, 16-23 March 1981, UNEP IG.22/7.

31. This section is based on research done in preparation for Mitchell, C. and P. Underwood supra note 12.

32. Ibid.

33. FAO, Sutinen et al. "The Fisheries of West Africa and