Twenty years of the Exclusive Economic Zone in Africa: Resource exploration, exploitation and management

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Almost twelve years after it was opened for signature, the 1982 United Nations Convention on the Law of the Sea (the Convention or LOSC) is now in force. On 16 November 1993 Guyana became the sixtieth state to ratify it. In terms of article 308(1) of the LOSC, 'the Convention shall enter into force 12 months after the date of deposit of the sixtieth instrument of ratification or accession'. One hundred and fifty-seven states had signed the convention on 10 December 1982 at Montego Bay, Jamaica. This included states at all levels of economic development as well and all shades of ideological persuasion. Nonetheless, the developing states of Africa, Asia, Latin America and the Caribbean presently make up the majority of the sixty ratifying states. To be more precise, only exceptions are Iceland, former Yugoslavia and Malta. The fact that most of the ratifying states qualify as developing states is regarded as evidence of the 'unsatisfactory nature' of the text of the convention seen from the perspective of the major developed states.[1]

To African states, the convention is an embodiment of their achievements in the field of the international law of the sea. Principal among these achievements are the expanded rights of coastal states, both in terms of jurisdiction and in terms of maritime area, as embodied in the concept of the exclusive economic zone (EEZ) in Part V of the convention.[2] It is generally believed that most aspects of this concept, with which African states have been strongly associated, have become part of customary international law independently of the convention.[3] In the circumstances, it is understandable that of the sixty

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[1]IA Shearer 'The United Nations Convention on the Law of the Sea' (1994) 68 *Australian Law Journal* 308.

[2]These elements are discussed further below.

[3]In the *Case Concerning the Continental Shelf (Libya Arab Jamahiriya/Malta)* (1985) ICJ Reports 4, the International Court of Justice declared that 'the institution of the exclusive economic zone, with its rule on entitlement by reason of distance, is shown by the practice of states to have become a part of customary law'. This fact, the court added, is incontestable. It makes the concept of the EEZ applicable independently of the provisions in the convention: par 34. In 1980 Judge Oda noted the irresistibility of the concept of the EEZ. In his view, and in the history of international law, scarcely has 'any other concept ... ever stood on the threshold of acceptance within such a short period'. The *Case Concerning the Continental Shelf*

ratifying states, twenty-seven or forty-five per cent are African. The eagerness with which African states have ratified the convention may be indicative of the esteem in which they hold their achievements in this regard.

These achievements followed a persistent support given by African states to the concept of extending coastal state maritime jurisdiction up to two-hundred nautical miles. Until the articulation of the EEZ, the general maritime practice of African states could not constitute a precedent for such an extension of jurisdiction. In this regard, a common element in the maritime practice of African states was the manner in which most of the coastal states extended their jurisdiction over various distances soon after achieving independence. Nevertheless, with the exception of Guinea in 1964, no African State had before 1970 claimed a territorial sea of more than fifty nautical miles. Maritime extensions made by African states all ranged between six and fifty nautical miles. The Proclamation On the Extent of the Territorial Waters of the United Republic of Tanzania 1963 extended the Tanzanian territorial sea to twelve miles.[4] In 1973, on the basis that there was no uniformity on the extent of the territorial waters of states in international practice, the limits to the Tanzanian territorial sea were further extended to fifty nautical miles.[5] Ethiopia had a twelve-mile territorial sea from 1953,[6] while Libya extended its territorial sea to twelve miles in 1954.[7] In 1958, Egypt extended its territorial sea to twelve miles,[8] and Nigeria followed suit in 1967, later further extending it to 30 miles in 1971.[9]

There had, however, been a persuasive practice of two-hundred nautical mile claims in Latin America by Chile and Peru in 1947. The practice was followed by Costa Rica, El-Salvador and Honduras in 1950. Ecuador made a similar claim in 1951. These practices were persuasive because they were made by Latin American states in situations similar to African states. The common denominators linking the two groups of states are, for example, subjugation, poverty, economic dependency and scientific and technological inferiority. Before the Latin American claims, the United States of America (USA) had enacted the Anti-Smuggling Act of 1935 which empowered the US President to delimit zones in the high seas beyond twelve miles to prevent smuggling.[10] The Panama Declaration of 1939 had also established a security zone of

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(Tunisia/Libya Arab Jamahiriya) 1982 ICJ Reports 18 228 par 120. See also the court's assertion in par 100; *Case Concerning Delimitation of the Maritime Boundary in the Gulf of Maine (Canada/United States of America)* 1984 ICJ Reports 1 par 94.

[4]EEE Mtago 'The Exclusive Economic Zone and Tanzania: Considerations of a developing country' (1984) 14 *ODIL* 1 3.

[5]United Nations Legislative Series *National legislation and treaties relating to the law of the sea* (1976) 31. See also Mtago n 4 above at 3.

[6]UNCLOS II Annex and Final Act (1960) UN Doc A/CONF19/4.

[7]*Ibid.*

[8]*Ibid.*

[9]Statement by the Nigerian delegate during the Plenary Session. *Third United Nations Conference on the Law Of the Seas (UNCLOS III) Official Records* (1974) I 139.

[10](1935) 49 Statute 517; 19 USC #1701–1711.

between 300 and 500 miles around the Americas for neutrality purposes during World War II.[11] In 1945 the US had also claimed the right to a fishery conservation zone outside the three miles of its territorial sea[12] as well a right to the 'natural resources of the ... continental shelf beneath the high seas but contiguous' to its coast.[13]

What set African states apart in the context of the development of the EEZ was the enthusiasm with which they embraced the transformation from the traditional claims of between three and twelve mile coastal state jurisdiction, to the revolutionary two-hundred nautical mile sovereign right of the EEZ. They lent their weight to the EEZ concept at UNCLOS III. They also initiated, in large numbers, the practice of maritime claims with the name and general features of the EEZ.[14] The latter followed a resolution of the Organisation of African Unity (OAU) which, in 1971, urged its member States to

> take all necessary steps to proceed rapidly to extend their sovereignty over the resources of the *high seas adjacent to their territorial waters and up to the limits to their continental shelf*.[15]

Observers have noted that the push given by African States to the two hundred nautical mile maritime claims was the 'turning point' in the forging of the EEZ concept. As often happens, one observer has written, the new African converts to the cause of broad claims became more radical than the original leaders of the cause they had adopted.[16] It is further significant that an African, FX Njenga, has been credited with the conception of the exclusive economic zone.[17] This article sets out to examine how African states have grappled with

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[11]AL Hillock 'The origin of 200-mile offshore zones' (1977) 71 *American Journal of International Law* 494 497.

[12](1945) 10 Federal Regulation 12,304, 59 Statute 885.

[13](The Truman) Presidential Proclamation 2667 10 Federal Regulation 12,303 (1945). Sometimes these practices have been cited as the precedents for the later Latin American Practices mentioned earlier.

[14]According to Warioba, Prime Minister and First Vice President of Tanzania, the sudden appearance of the practice of the EEZ in Africa soon after the concept had been agreed upon by African States was a deliberate attempt to present the conference with a *fait accompli*. Interview with the author at the Prime Minister's office in Dar-es-Salaam, Tanzania, March 1989.

[15]Par 2, Resolution on the Permanent Sovereignty of African Countries over their Fisheries Resources off the Shores of Africa 1971 CM/Res 250 XVII (emphasis added).

[16]RG Pohl 'The Exclusive Economic Zone in the light of negotiations of the Third United Nations Conference on the Law of the Sea' in FO Vicuna *The Exclusive Economic Zone, a Latin American perspective* (1984) 37.

[17]It was at the meeting of the Asian-African Legal Consultative Committee that Njenga gave life to the EEZ. He called it the Economic Zone. He submitted that '... the territorial waters limit of twelve miles could be generally acceptable *provided* a further control over adjacent waters is added over which a coastal State can exercise limited jurisdiction. This zone may be called the "Economic Zone" to emphasise the limited nature of the exercise of sovereignty therein. Within this area the coastal State would have the right to regulate and control fisheries if it so wishes, and enact and enforce regulations to prevent pollution. But all the other freedoms of the high seas — freedom of navigation, freedom to lay submarine cables, freedom to fly over high seas etc — would remain unaffected. The extent of such a zone may differ from ocean to ocean depending on the ecological or economic factors in the area and

their new-found rights and obligations in maritime practice, which until the mid-1970s, had been largely alien to African coastal states. The article shows that within the framework of their constraints, African sates have made progress, particularly in fisheries. Available evidence shows, nonetheless, that when their efforts are viewed in the context of international developments in marine and maritime activities there is a long way to go before there will be any semblance of parity between African states and states on other continents.

The article is divided into parts A and B. Part A examines the background which African states in the exploration and exploitation of the resources of the sea before the advent of the concept of the EEZ and discusses the intermediate efforts which African States made to counteract their deficiencies in capital and technology. The discussion in Part B of the article focuses on the endeavours that have followed on the enthusiasm with which African states embraced the concept and practice of the EEZ and highlights some of the factors which have mitigated against the efforts of African states to develop their capabilities in resource exploration and exploitation.

PART A

CAPABILITY PRE-1970

International law has always recognised the rights of a coastal state to exercise some form of control over some portion of the seas adjacent to its land.[18] What remained contentious until the LOSC was the quantum of the control or jurisdiction and the extent of the sea over which this control could be exercised.[19] Contemporary international law has also always recognised the

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consequently it may not be necessary to prescribe a uniform limit. Taking into consideration the needs of the developing countries as a whole, particularly for fisheries, we should propose that such a zone may not extend beyond 200 miles.' Asian-African Legal Consultative Committee (1972) 2 *Brief of Documents on the Law of the Sea* Thirteenth Session, Lagos (Nigeria) 19–26 January 1972 184. The properties that Njenga mentioned for the Economic Zone have all been included in Part V of the LOSC, in particular arts 56 and 58 of the convention.

[18]Fulton has traced the history of coastal states' entitlement to exercise some jurisdiction over some extent of the neighbouring seas to the Italian jurists Bartolus of Saxo-Ferrato (1357) and Baldus Ubaldus (1400). These two jurists declared the law to be that a coastal State had jurisdiction to apprehend and punish delinquents on the seas just as it had on its land. According to Bartolus, this jurisdiction extended to a distance of one hundred miles from the coast (or less than two days journey) over the seas. Baldus reduced the distance to sixty miles, a distance which was supposed to be equal to one day's journey from the coast. TW Fulton *Sovereignty of the sea, an historical account of England to the dominion of the British seas, and of the evolution of the territorial waters: with special reference to the rights of fishing and the naval salute* (Reprint 1976) 539–540. See the account of this development in BG Heinzen 'The three-mile limit: Preserving the freedom of the seas' (1958–59) 11 *Stanford Law Review* 597; BL Florsheim 'Territorial sea — 300 year old question' (1970) 36 *Journal of Air Law and Commerce* 73; PT Fenn Jr 'Origins of the theory of territorial waters' (1926) 20 *AJIL* 465; PT Fenn Jr *The origin of the right of fishery in territorial waters* (1926) 22.

[19]Consistently, states have exercised sovereignty over their territorial sea although its extent remained indeterminate for a long time. The concept of contiguous zone emerged, followed by the concept of sovereign rights over the continental shelf. The concepts of the fishery zone and the preferential rights of fishing were propounded by the International Court of Justice in the *Fisheries Jurisdiction Case*

dichotomy between the rights of the coastal state over the superjacent waters, and its rights over the seabed.[20] It was within the context of these elements of international law that on independence most African states extended their jurisdiction over various distances. Despite this phenomenon, marine exploration on an economic or commercial scale by African states was virtually non-existent before the mid-1970s. Although there was marine exploitation, it was rudimentary. In 1958, before foreign fishing in the waters of African states had begun in earnest, the total catch in the East Central Atlantic was 400 000 metric tons and half of this came from Morocco's sardine fishery.[21] Ten years later, the catch by foreign fishing vessels alone had risen to 1 002 million tons. In 1972 the total catch was estimated at 2,9 million tons. Of this, non-African fishing activities were responsible for 1,95 million tons.[22] Since then, fears have been expressed that many stocks are showing signs of over-exploitation and that the rate of expansion of fisheries cannot be maintained for many more years.[23]

Early records show that fishery industries in Africa were peripheral. Although there has been industrial tuna fishing on the Indian Ocean since 1952, this has been conducted by Japanese, Taiwanese and Korean vessels.[24] Ghana has had one of the longest traditions in sea fisheries in Africa. Relative to other African States, Ghana is also considered as having had the highest degree of mechanisation and the most advanced fisheries development plans.[25] However, in 1965, Ghana had only some 2 000 canoes and five stern trawlers of 1 300 to 1 500 metric tons each.[26] There were 67 000 men wholly or partially engaged in fishing and their total catch for the previous year was estimated at 91 000 metric tons.[27] Nigeria, one of the most populous states in Africa with an area of 350 000 square miles and a seaboard of over 600

(United Kingdom of Great Britain and Northern Ireland v Iceland) 1974 ICJ Reports 4 par 52.

[20]This dichotomy may be traced to the emergence of the concept of the continental shelf. The International Court of Justice asserted in the *North Sea Continental Shelf Cases (Germany/Denmark; Germany/Netherlands)*, that art 2 of the 1958 Convention on the Continental Shelf had established, or in continental shelf constitutes a natural prolongation of a state's land territory into and under the sea. And that the State's right in the shelf exists *ipso facto* and *ab inttio* by virtue of its sovereignty over the adjacent land. In customary international law, the coastal state exercises 'sovereign rights' over the continental shelf for the purposes of exploring and exploiting its natural resources. Art 3 of the Convention on the Continental Shelf reiterates that these rights do not affect the legal status of the superjacent waters as high seas or that of the airspace above those waters.

[21]JA Crutchfield and R Lawson *West African fisheries: Alternatives for management* (1974) RFF Programme of International Studies of Fishery Arrangements RFF/PISFA Paper 3 2.

[22]*Ibid.*

[23]*Ibid.*

[24]Instituto De Investigacao Pesqueira (1987) 16 *Revista De Investigacao Pesqueira* 44.

[25]Food and Agricultural Organization of the United Nations, *Report on fisheries education in Ghana, Sierra Leone, Nigeria, Tanzania, Kenya and Uganda* FAO Fisheries Report no 35 (1966) 7.

[26]*Ibid.*

[27]*Ibid.*

miles, had in 1964, less than a dozen fisheries development officers, three fisheries biologists and three master fishermen competent to run training schemes.[28] Traditional marine fisheries were estimated at 25 000 tons in 1961.[29]

In Tanzania, fishing is almost exclusively by canoes and small sailing craft.[30] In 1963, only thirty-seven craft (out of a total 5 300) had engines. Marine catch was estimated at 6 400 tons in 1961.[31] In Kenya, marine fisheries yielded an average of 5 000 tons through the efforts of an estimated number of 5 500 men using primitive methods.[32] In Sierra Leone, using dugout canoes only, fish production was put at 21 500 tons in 1962.[33] There was only one active indigenous Sierra Leonean fishing company and only one professional officer in the country.[34]

No African state had claimed any rights to any resources in the submarine areas around the continent of Africa before the 1958 Geneva Conventions.[35] This is understandable, if account is taken of three important factors. The first, that few African states were independent and all seaward claims reflected their status as colonies. The second, the level of technology available on the continent could not be utilised for any meaningful exploration or exploitation of areas other than the immediate vicinity of the coastal areas. The third important factor relates to the nature or morphology of the submarine area around the continent. On the entire coast of Africa there is a substantial fall-off on the seaward side at a small distance from the coast.[36] On the eastern coasts, for example, the shelves are so narrow that they are barely trawlerable and therefore have only limited commercially viable exploitation prospects.[37]

The 1962 Minerals Act of Ghana typifies the claims to natural resources in the submarine areas made soon after the 1958 Convention. It provided that the entire property in and control of all minerals in, under or upon land covered by the territorial waters and of the continental shelf are vested in the President on behalf of the Republic of Ghana.[38] No limits were set to the continental shelf. But in 1973, by an amendment to the original law,[39] one hundred nautical miles, or the distance that admits the exploitation of natural

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[28]AR Longhurst *Report on the fisheries of Nigeria* (1962) 12.

[29]*Ibid.*

[30]FAO Fisheries Report no 35 nn 25 28 above.

[31]*Ibid.*

[32]*Ibid* 37.

[33]*Ibid* 12.

[34]*Ibid.*

[35]UNCLOS II n 6 above.

[36]United Nations Environment Programme (UNEP), *Environmental problems of the east African Region*, (1982) UNEP Regional Seas Reports and Studies no 12 17; See also UN/FAO Report submitted to the OAU *The Third United Nations Conference on the Law of the Sea and its implication for fisheries* (1976) 8 20.

[37]UNEP Reports and Studies n 36 above at 23.

[38]Art 2.

[39]Territorial Waters and Continental Shelf Decree 1973.

resources, was set.[40] Various other claims were made by the Gambia in 1966; Ivory Coast in 1967; Liberia in 1969; and Equatorial Guinea in 1970.

Intermediate efforts

Standing at such a low threshold of exploration and exploitation of sea resources; being so deficient in capital; and so inferior in technology[41] it is small wonder that African states embraced the principle of the common heritage of mankind as propounded by the Maltese UN Ambassador Arvid Pardo in 1967.[42] It is even less surprising that African states had, before the emergence of the EEZ concept, considered mechanisms to ensure that their deficiencies in capital and technology would not disadvantage them in the overall scheme of the exploration and exploitation of resources beyond the limits of their national jurisdictions.

The UN Food and Agricultural Organisation (FAO) had, in 1971, at its Regional Conferences on African fisheries, drawn the attention of African states to the nutritional and commercial value of fish and fisheries. The FAO also high-

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[40] *Ibid* art 2 read with art 5.

[41] Africa is home for 30 per cent of the world's 188 states. Thirty-two of a total of fifty-three states there belong to the least developed states. This is 70 per cent of the world's total of 46 such least developed States. B Kwiatkowska *Ocean affairs and the law of the sea in Africa: Towards the 21st century* (1992) 2 states that Africa: 'possesses the lowest share of scientific and technological capabilities of any region in the world; it has the largest number of least developed, land-locked, islands and most seriously affected countries; it has a vast majority of populations living in rural areas; and it suffers large expense due to actual and threatened natural disasters'. While other developing states on other continents can develop and manage their own resources, the continent of Africa is the only one that is overwhelmingly composed of the states 'which need large amounts of aid, in terms of money, equipments, and personnel to enable them to develop and manage their coastal resources and to obtain food and employment for their populations'. See DM Johnston & E Gold *The economic zone in the law of the sea: Survey, analysis and appraisal of current trends* (1973) Law of the Sea Institute, University of Rhode Island, Occasional Papers Series 17, 22; R Hamlisch *Methodology and guidelines for fisheries development planning, with special reference to the developing countries of African region* (1988) 56–7; AA Mawdsley 'Law of the sea: The Latin American view' in G Pontecorvo *The new order of the oceans, the advent of a managed environment* (1986) 158.

[42] The ambassador's proposal was accompanied by an explanatory note which alluded to the fear that the rapid technological progress was speeding towards making it possible for the areas beyond the continental shelf to become capable of national appropriation. Pardo thought that it was necessary to take steps that would forestall the 'militarization of the accessible ocean floor' and to make necessary arrangements for the exploitation of the immense resources for the benefit of mankind. He suggested further that the area be declared the common heritage of mankind in order that the resources did not become the private property of only the technologically advanced countries. Quoted in S Sda *The law of the sea in our time — II The United Nations Seabed Committee 1968–1973* (1977) 3. A similar call had been made a year before, in 1966, by President Lyndon Johnson of the US. A newspaper report quoted him as saying that under no circumstances must the international community allow the prospect of a rich harvest of mineral wealth to create a new form of colonialism on the seas. He added: 'We must be careful to avoid a race to grab and hold the lands under the high seas. We must ensure that the deep seas and the ocean bottom are, and remain, the legacy of all human beings.' New York Times, 14 July 1966 10.

lighted the dangers posed by foreign fishing activities.[43] In fact, the OAU Panel of Experts on the Law of the Sea urged the OAU to take initiatives on matters relating to jurisdiction of its member states over marine fisheries. The report of the panel stated that

> Having considered all the available scientific information and also considered the role that fisheries development can play in the economic development of African states, the Panel suggests that fishing in the area of the sea up to the 600 metre isobath should be reserved exclusively for the coastal state. Where the eventually agreed limit of the territorial waters is not enough to encompass this zone, the waters between the edge of the territorial sea and the 600 metre isobath should be declared an exclusive fishing zone.[44]

The experts had found that the resources of the seas around Africa needed 'urgent protection and conservation from the excessive commercial exploitation being undertaken by non-African countries'.[45] Furthermore, the panel found to its dismay that a 'considerable portion of the fish caught which would otherwise be used for human consumption in the protein deficient African countries, was reduced to fish meal for non-African markets'.[46] It stated that the only recourse available to the continent in the circumstances, was the extension of national protection of the fish resources to 'cover known exploitable fish stock' surrounding the continent. Noting that the measures then in place in the African states, presumably relative to 'extending national protection' were inadequate and negatively diverse, the experts called for a 'common stand' by African states in adopting a limit to the 'exclusive fishing zone for the whole of the African continent'.[47] This they believed would ensure the sound development of fishing activities in Africa.[48]

On another front, and, in recognition of the potential of the law of the sea as an instrument for the enhancement of their development on various levels, African states' representatives on the Seabed Committee, in mid-1972 advocated 'the founding of a new law of the sea and the establishment of an equitable regime from whose benefit social and economic conditions of African peoples may improve'.[49] African states saw this as a natural progression from the UN Declaration of Principles of the Sea-bed and Ocean Floor and Subsoil thereof Beyond the Limits of National Jurisdiction (Resolution 2749 (XXV) of 1970). With this in mind, they advocated the elaboration of an international machinery for the control of all resources

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[43]NS Rembe *Africa and international law of the sea: A study of the contribution of the African states to the Third United Nations Conference on the Law of the Sea* (1980) 119.

[44]*Report and Recommendation of the Panel of Scientists on the Problem of the Sea-Bed and Fisheries Resources in Africa* Lagos, 14–16 October 1971 6.

[45]*Ibid* 5.

[46]*Ibid.*

[47]*Ibid.*

[48]*Ibid.*

[49]Seabed Committee-African Group *Draft report on the seabed regime* (1972–3) 3. Archives of the OAU, OAU Secretariat, Addis Ababa Ethiopia (OAU Archive Materials 1).

beyond the territorial sea.[50]

The competence of the machinery envisaged by African states would extend to the

> exploration and exploitation of the resources of the regime, peaceful uses of the area, scientific research, and the preservation of the marine environment and prevention of pollution resulting from the exploration and exploitation of the resources of the area. It would also cover the sharing of the benefit derived from the area as a common heritage and deal with the economic effects resulting from exploitation of the resources of the area taking into consideration the particular interests of developing countries, whether coastal or landlocked.[51]

African states had considered a choice between a weak and a strong regime of international machinery. The strong regime would have strong powers of management and regulation including powers of direct exploitation.[52] The weak regime, on the other hand, would have administrative powers in the allocation of licences for the exploration and exploitation of the blocks of the area, make rules, recommend standards and practices and collect fees and royalties to defray its expenses and distribute income to states.[53] African states together with most developing states were in favour of the former.[54] There were also some States who thought it would be a good idea to supplement the international machinery with an African regional arrangement. It was thought that this would localise the peculiar problems in economic, social and political fields.[55] It was advocated further that whatever choice was made, the regime, in whatever form it emerged, had to include an 'appropriate and effective international machinery which would ensure that benefits promised to African States accrued to them'.[56]

These ideas were superseded by the concept of the EEZ. There was, among other factors, a sudden realisation that although broad claims of coastal state jurisdiction would not make poorer states equal to richer states, it would allow the poorer States to gain control over whatever resources they might have within the areas claimed which hitherto had been subject to freedom of

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[50]*Ibid* 3.

[51]Seabed Committee-African Group *Draft report on the international machinery* (1972) 2. Archives of the OAU, OAU Secretariat, Addis Ababa Ethiopia (OAU Archive Materials 2).

[52]What had not been made clear was whether the machinery, which would possess full legal personality with the necessary privileges and immunities, should reserve for itself the exclusive rights of exploitation or whether it would reserve some rights to states. The latter approach was recommended by this report. *Ibid* 6.

[53]*Ibid* 4.

[54]*Ibid* 2.

[55]Sea-Bed Committee — African Group *Draft report on regional arrangement* (1973) 2. Archives of the OAU, OAU Secretariat, Addis Ababa Ethiopia (OAU Archive Materials 3). According to this report, the regional arrangement would be set up as part of the international machinery. It was thought to be unrealistic not to recognise, as other regions had done, 'the particularities of a geographical, geological, social and economic nature' of Africa. The other regional arrangements referred to were the Santiago, Montevideo and Lima Declarations as well as the North Sea and the Adriatic regional arrangements. *Ibid*.

[56]OAU Archive Materials 1 n 49 above at 3.

the sea.[57] A Tanzanian delegate pointed out to the author, it is better to have international law backing for jurisdiction over the area than to have to rely on the sovereignty of another state or authority. He added that beside the potential for conflict, such an arrangement may breed over-dependence on the one hand and complacency on the other.[58]

The desire of African land-locked and geographically disadvantaged states (LL/GDS) to share in the resources of the seas beyond the territorial seas culminated in the compromise embodied in the conclusions of the African States Regional Seminar on the Law of the Sea held in Yaounde, Cameroon from 20–30 June 1972.[59] Part of the conclusion was that maritime areas beyond the territorial sea would be open the to all African states, including 'land-locked and near land-locked' states.[60] To be effective, the rights of the LL/GDS to explore the living resources of the EEZ, 'shall be complemented by the right of transit'.[61] The only limitation placed on the participation of the LL/GDS in this brand of the EEZ, was the requirement that the enterprises of the LL/GDS in the exploration and exploitation would have to be 'effectively controlled by African capital and personnel'.[62] The 'conclusions' of the seminar in this respect were reaffirmed by the 1973 Organization of African Unity (OAU) Declaration on the Issues of the Law of the Sea.[63] The declaration stated that 'on the basis of African solidarity', LL/GDS would be 'entitled to share in the exploitation of the living resources of neighbouring economic zones on equal basis as nationals of coastal States' within 'such regional or bilateral agreements as may be worked out'.[64]

Subsequently, the issue of equal sharing with LL/GDS in the resources of the EEZ was quietly dropped, thus sacrificing the economy of scale that would have accompanied regionalisation. The need for the establishment of corridors of transit through other states raised the important question of security of states. In addition, African coastal States became conscious of the fact that internationalisation of the concept of the EEZ was its most important element to them at that early stage. Unless the EEZ-concept was recognised internationally, African states would be unable to enforce its establishment and there would therefore be nothing to share. In the circumstances, regionalisation of the concept with the right of LL/GDS as an integral part, would be counter-productive since it would render the EEZ unattractive to coastal

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[57]M Dahmani *The fisheries regime of the Exclusive Economic Zone* (1987) 23.

[58]Author's interview with Warioba, Prime Minister and First Vice President of Tanzania at the Prime Minister's office in Dar es Salaam (Tanzania) March 1989.

[59]Reproduced in the *Report of the Committee on the Peaceful Uses of the Sea-bed and the Ocean Floor Beyond the Limits of national Jurisdiction* General Assembly Official Records Twenty-Seventh Session Supplement 21 (A/8721) 73, 74. UNCLOS III Official Records.

[60]*Ibid.*

[61]*Ibid.*

[62]*Ibid.*

[63](1973) UN Doc A/AC 138/89 4.

[64]*Ibid* 6.

States outside Africa.[65]

In 1972, the OAU, in its Resolution on the Environment,[66] called on its member states to extend their 'sovereignty over the fisheries resources along the whole of their continental shelf'. The purpose was to ensure better control and more rational conservation of those resources 'for the benefit of the African economies'.[67] By 1976 Guinea,[68] Mozambique[69] Somalia[70] and Senegal,[71] had made resource claims that would, in terms of the breadth claimed, resemble the EEZ. Mozambique claims 'sovereign power' in an area two hundred nautical miles from its baseline.[72] It makes no mention of either EEZ or territorial sea. Guinea[73] and Somalia asserted territorial sea rights over two hundred nautical miles.[74] Senegal claims similar breath for an EEZ[75] and a 150-mile territorial sea.[76] In all cases, fishing is especially protected. All other resource claims on the continent were made after the EEZ concept had found some form of general consensus at the negotiation phase of the convention. This occurred particularly around 1977, after the submission of the Revised Single Negotiating Text (RSNT).[77] Much later, the maritime claims of Cape Verde, Gabon, Ghana, Guinea-Bissau and Tanzania were tailored to the substance of Part V of the LOSC.

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[65]Author's interview with Warioba n 58 above. The Prime Minister explained that when LL/GDS in Africa teamed up with other LL/GDS from the developed states, the question of 'equal sharing' which, hitherto, had been peculiar to Africa on the basis of its solidarity, became crucial to the international acceptability of the basic EEZ concept. Since the developed states as well as Asian and Latin American states took their securities seriously, and since they would not go along with Africa's notion of sharing, it became clear that regionalisation of the concept with any special characteristics was not in the best interest of Africa. See also *Report of the rapporteur of the Committee of African Experts on the law of the sea* which met in Kampala from 10–17 July 1975 4–5. The issues discussed with the author were all raised in this report but they were not resolved by the experts. Instead, they were left to the OAU Council of Ministers to take appropriate decision *ibid* 5.

[66]OAU Doc CM/Res 281 (XIX) 1972.

[67]*Ibid* See also the OAU Resolution on the Permanent Sovereignty of African Countries over their Natural Resources, (1971) CM/Res 245 (XVII).

[68]Art 2 Decree No. 426/PRG of 31 December 1965 amending Decree No 224/PRG of June 1964 Concerning the Limit of the Territorial Waters of the Republic of Guinea Amended in 1965.

[69]Art 2 Mozambique Council of Ministers Decree Law 31/76 of August 1976.

[70]Art 1, Law 17 of 10 September 1972, Law on the Somali Territorial Sea and Ports.

[71]Act 76–89 of July 1976 Establishing a Sea Fishery Code.

[72]Note 69 above art 2.

[73]Note 68 above art 2.

[74]Note 70 above art 1(1).

[75]Note 71 above art 2. The content of the law however would seem to suggest that the area is intended as a fishery zone rather than an EEZ.

[76]The treaty between Senegal and the Gambia reproduced in M Nordquist, SH Lay & KR Simmonds *New direction in the law of the sea, Documents* (1980) VIII 107.

[77]UN Doc A/CONF 62/WP 8/Rev 1/Part II 6 May 1976.

PART B

EXPLORATION, EXPLOITATION AND MANAGEMENT OF RESOURCES IN THE EXCLUSIVE ECONOMIC ZONE OF AFRICAN STATES

The LOSC recognises the right of every coastal state to claim an EEZ of not more than two hundred nautical miles from the baseline from which the breadth of the territorial sea is measured.[78] The general rights which a coastal state may exercise over the resources and the economic activities of the EEZ are laid down by article 56 of the LOSC in the following terms:

> 1. In the exclusive economic zone, the coastal State has:
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> (a) sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the sea-bed and of the sea-bed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, current and wind ...

By virtue of article 56(3) all coastal state rights with respect to the sea-bed and subsoil will be exercised in accordance with the coastal state's rights in the continental shelf as in Part VI of the convention. The dual regime which the convention establishes means that every EEZ would have a continental shelf but the reverse is not necessarily true.[79] In the superjacent waters, the coastal state has sovereign rights over all free floating living resources (fisheries) as well as non-living resources of the superjacent waters (various minerals which can be extracted from sea water). This is governed by Part V of the LOSC. The coastal state also has sovereign rights over the natural resources of the continental shelf as provided for under article 77(1). These resources consist of

> the mineral and other non-living resources of the sea-bed and subsoil together with living organisms belonging to the sedentary species, that is to say, organisms which, at the harvestable stage, either are immobile on or under the sea-bed or are unable to move except in constant physical contact with the sea-bed or the subsoil.[80]

In the *Libya/Malta case*,[81] the International Court of Justice, after considering the relevant provisions of the LOSC, asserted that the EEZ and the continental shelf are linked together in modern international law. In essence,

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[78]Art 57.

[79]An EEZ cannot exceed 200 nautical miles, but a continental shelf may be 200 miles or more, depending of course, on the geographical location of the sea relative to the coastal state. The continental shelf may, by virtue of article 76, and, depending on the circumstances, extend up to, first, 200 nautical miles where the continental margin is less than that distance; to the continental margin if that is beyond 200 nautical miles; and then up to a maximum of 350 nautical miles. Thus, it is possible for a coastal state to have a continental shelf well beyond the limits of its EEZ. Moreover, although a state may have a continental shelf without necessarily having an EEZ, the reverse is not possible as every EEZ is composed of the superjacent water on the one hand and the sea-bed and subsoil beneath it on the other hand (article 56 paragraphs (1)(a) and (3)). See also FA Vicuna *The exclusive economic zone, regime and legal nature under international law* (1989) 69; DJ Attard *The exclusive economic zone in international law* (1987) 139.

[80]Art 77 (4).

[81]Note 3 above.

although the rights possessed by a state in both institutions are the same, the two remain mutually independent of one another and, contrary to other views expressed in some quarters, it was the court's opinion that the regime of the continental shelf has not been absorbed by the EEZ.[82]

Sovereign rights over the exploration and exploitation of non-living resources

The arrangement of the Convention which makes a clear distinction between the EEZ and the continental shelf is not adequately reflected in the legislation of most African states. At its conception, some African states had thought that the EEZ would not differ in substance from the concept of the continental shelf.[83] Others thought that the EEZ would replace the continental shelf.[84] Neither of these ideas dominates the practice of African states. Some states have EEZ legislation and still retain their continental shelf legislation in a manner that makes the two inconsistent.[85] Others show a clear intention to treat the two jurisdictional zones separately. South Africa, for example, has a law on the continental shelf. It also claims an exclusive fisheries zone of two hundred nautical miles.[86] Ghana's legislation[87] makes separate claims for the continental shelf and the EEZ. In fact article 9 of the Maritime Zone (Delimitation) Law of Ghana specifically repealed the Territorial Waters and the Continental Shelf Decree of 1973. The distinction also occurs in the Angolan legislation.[88]

Generally, African states have not placed a great deal of emphasis on the exploitation of non-living resources. The continental shelf on the Indian Ocean side of Africa has been described as 'sediment starved'. Because of its youthful divergent margin, it is typically narrow, with abrupt and structurally complicated edges'.[89] It has an average width of between fifteen and twenty-

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[82]*Ibid* 33.

[83]Mr Kabongo (Zaire) stated at the Second Session of the Second Committee of the UNCLOS III that: 'A 200-mile economic zone, if established, would, in practice, not differ in substance from the concept of the continental shelf. The right of the coastal state over the exploration and exploitation of the resources within the relevant economic zone would necessarily cover the mineral resources of the continental shelf, which henceforth should be delimited in accordance with the criterion of distance and not that of exploitability.' *Third United Nations Conference On the Law of the Sea (UNCLOS III) Official Records* (1974) 2 146.

[84]For example, Mr Ochan (Uganda) suggested at the 18th meeting of the Second Committee of UNCLOS III, that the concept of the continental shelf should be revised. In his view, the revision should take the form of replacing the concept of the continental shelf with that of the 200-mile economic zone, because the latter is more practical. *UNCLOS III Official Records ibid* 151.

[85]See, for example, the views expressed by LC Christy 'Fisheries legislation in Mauritius' *Regional project for the development and management of fisheries in the southwest Indian Ocean* FAO Rome (1986) 2.

[86]Sec 7 of Act 87 of 1963 and sec 3 of Act 87 of 1963 as amended by Act 98 of 1977 respectively.

[87]Maritime Zone (Delimitation) Law 1986.

[88]Decree 12-A/80 of 1980.

[89]United Nations Environmental Programme (UNEP) *Oil spills and shoreline clean-up on the coasts of east African region* UNEP Regional Seas Reports and Studies 57 (1985) 19-20.

five kms. Generally, the sea floor drops off rather steeply to depth of over 4 000m as for example along the eastern coast of Madagascar. There is, on most headlands and straight stretches of coastlines, virtually no shelf because of steep drop-off beginning only a few kilometres out to sea. These areas are not easily trawlerable and seabed resource exploitation is minimal. Thus in Somalia, for example, between the low latitudes, the shelf is between sixteen and twenty kms wide. In Tanzania the width of the shelf varies between six km and sixty-four km at areas around Mafia, Zanzibar and Pemba Islands. The continental shelf of Madagascar is even narrower and steeper than that of the mainland, with the 500m and 2 000m contours being located just some twelve km and thirty-two km off Toamasina.[90] In Seychelles, the continental shelf represents five per cent of the EEZ and is less than two hundred metres deep.[91] On the Atlantic side of the continent, the position is not much better. From the Zaïre river to the south Angola borders the shelf averages about four km. In the northern part of Senegal, the shelf is also narrow but widens to about 40 km at the Senegal river estuary.[92]

The eastern side of the continent is also characterised by strong currents and waves. Its fauna and flora is pelagic and varies from plankton to whales. Larger stronger swimmers like the sailfish, marlin, tuna and barracuda are to be found in this region. The biomass, and therefore productivity, decreases with depth and there is stratification in species. Off Madagascar and in the deeper, colder waters is the rare chambered Nautilus which is recorded in only one other place, the Palau Islands in the Pacific.[93]

The exploration and the exploitation of non-living resources in Africa has concentrated mainly on petroleum and natural gas. The actual exploration and exploitation of these resources are, however, almost wholly in the hands of foreign multinationals. Thus, the infrastructure such as the corporations, the oil pipes, the oil terminals, the projects and the programmes are usually in good order. Major oil production on the continent is concentrated in the hands of Egypt (40,25 per cent); Nigeria (32,13 per cent); Angola (9,46 per cent) and Gabon (8,01 per cent). Other important producers are Congo, Ivory Coast, Tunisia and Zaïre.[94] In 1983 Liberia concluded agreements with AMOCO Liberia Exploration Co, a wholly owned subsidiary of Standard Oil Corporation of the USA, to explore and exploit oil in four of Liberia's nine

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[90]UNEP Report and Studies No 12 n 36 above at 17–21.

[91]United Nations Environmental Programme (UNEP) *Socio-economic activities that may have an impact on the marine and coastal environment of the east African region* UNEP Regional Reports and Studies No 51 (1984) 31.

[92]United Nations Environmental Programme (UNEP) *The marine and coastal environment of the west and central African region and its state of pollution* UNEP Regional Seas Reports and Studies No 46 (1984) 2–3.

[93]United Nations Environmental Programme (UNEP) *Conservation of coastal and marine ecosystems and living resources of the east African region* UNEP Regional Seas Reports and Studies No 11 (1982) 19.

[94]United Nations Department of International Economic and Social Affairs Ocean Economic and Technology Branch, *Challenges of marine resources development for developing countries under the new law of the sea* (1984) 13.

offshore blocks.[95] Seychelles started active offshore oil exploration in 1977 when three oil companies were awarded forty-six blocks (each block being 685 sq km). Seismic surveys, together with ship-borne magnetic and gravity surveys, were conducted in the licensed areas during 1977–1979. In 1981 three wells were dug in the western shelf but no commercial hydrocarbons were found.[96]

In Tanzania, while the sedimentary value parameter is excellent, the record of hydrocarbon recovery is poor and disappointing. Although exploration began in 1966 and twenty-two wells had been drilled, no hydrocarbon or gas worth any commercial endeavour has been found.[97] Ethiopia, Mauritius and Kenya have been pursuing a policy of encouraging multinational investments in petroleum and gas in their states as well.[98] The bulk of the gas exploited in the continent is exported. The foreign currency derived from its exploitation therefore depends on the world market forces. Ninety per cent of what is known to be Africa's reserve has not yet been exploited. The ratio of exploratory wells to economic fields discovered has been estimated as one in eight. This is regarded as an indication of the lesser overall risk in exploration capital expended to fields discovered in African offshore areas. Gas exploration, exploitation and production is led by Nigeria. Other important producers are Egypt, Ghana and Gabon.[99]

With respect to the exploration of other non-living resources, solar evaporation of brine in tidal ponds is undertaken to obtain crude salt in the North African states as well as Madagascar, Mauritius, Kenya and Mozambique. Total production of salt on the continent amounted to 3,4 million metric tons in 1986.[100] There is exploitation of rutile in Sierra Leone on a minor scale. Sierra Leone is also embarking on a policy of the exploitation of placer minerals like diamonds. Scientists have also recently drawn attention to the importance of cobalt-rich ferromanganese crusts. These, sometimes found within the EEZ, are associated with seamount and guyot. There is potential for these metals in the EEZs of Cape Verde, Guinea-Bissau and Seychelles. Hydrothermal deposits are also found in both the Atlantic and the Indian Oceans as well as the Red Sea.[101]

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[95]Survey Report *National capabilities for the exploration, exploitation and development of the marine resources by African states* Economic Commission for Africa (ECA) (1984) 13.

[96]UNEP Regional Seas Report No 51 n 91 above at 45.

[97]*Ibid* 117.

[98]ECA Survey Report n 95 above at 9–11.

[99]*Ibid* 11.

[100]Economic Commission for Africa (ECA) *African technical capabilities for the exploration, exploitation, development of the resources of the sea* Consultancy Report (1986) 20.

[101]Report of the UN Department of International Economic and Social Affairs n 94 above at 26.

Sovereign rights over the exploration and exploitation of living resources

Fishing is the *sine qua non* of the concept of the EEZ.[102] It has, traditionally, been recognised as one of the most important maritime right of states.[103] In contemporary international law of the sea, experts have asserted that fishing ranks second only to navigation in gross product obtained from ocean resources or the use of ocean space. In this regard, the preoccupation of states with fishing has not been no less emphatic among African states. On the contrary, they have been almost over-bearing in their assertion of control over living resources. In addition to claiming sovereignty and sovereign rights in the variety of terms noted above, African states have re-emphasised their claims by specifically prohibiting fishing or the exploitation of resources. Thus, for example, Gambia not only prohibits foreign vessels from fishing without authorisation, it also restricts their entry into its fishing waters.[104] Under the Angolan law,[105] it is unlawful for foreign vessels to fish, prepare to fish, commit acts prejudicial to fishing or damage or destroy fishing gear legally installed in the sea.[106] Seychelles,[107] Morocco,[108] Mauritania,[109] Mauritius,[110] Kenya,[111] Guinea-Bissau,[112] Equatorial Guinea,[113] Tanzania,[114] and Comores[115] all give fishing or exploitation of resources separate treatment apart from their main maritime jurisdictional claims.

The emphasis that African states have placed on their rights to fisheries in their

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[102]Judge Oda dissenting in the *Tunisia/Libya case*, has no doubt that the EEZ has essentially been designed to reserve for the coastal state the right to exercise jurisdiction for the purpose of the exploitation of fishery resources. In n 5 above at 231.

[103]Grotius had used fishing and navigation to justify the concept of freedom of the seas. In fact according to Reisenfield, the very cause of the protracted dispute between Grotius and the English writers on the concept propounded by Grotius was its connection with, and bearing on international claims with respect to fisheries. S Riesenfield *Protection of coastal fisheries under international law* (1942) 9.

[104]The relevant portion of the Fisheries Act of 1977 provides: '20.(1) No foreign fishing vessel shall enter fishing waters under the jurisdiction of Gambia, unless authorised to do so by the terms of a permit...or any international agreement in force ...'.

[105]Note 88 above.

[106]*Ibid* art 2.

[107]Art 7(2) Maritime Zone Act 15 of 1977.

[108]Art 6(3) Act 1-81 of 18 December 1980 promulgated by N Dahir 1-81-179 of April 1981, establishing a 200-nautical-mile Exclusive Economic Zone of the Moroccan coasts.

[109]Art 193(1) and 194(5), Law 78.043 establishing the Code of the Merchant Marine and Maritime Fisheries of 28 February 1978.

[110]Note 55 above art 7(2) read with art 9(a) and (b).

[111]Par 2 of the Schedule to the Presidential Proclamation of 28 February 1979.

[112]Art 4, Law 3/78 on the Extension of the Territorial Sea and Exclusive Economic Zone of May 1978.

[113]Art 14, Act 15/1984 of 12 November 1984 on The Territorial Sea and Exclusive Economic Zone.

[114]Art 10, Territorial Sea and Exclusive Economic Zone Act 1989.

[115]Law 82-005 Relating to the Delimitation of the Maritime Zones of the Islamic Federal Republic of the Comoros of 6 May 1982 art 2.

EEZ is not backed up by a capability to exploit the said resources. Their deficiency in science, technology and capital affect the provision of fishery infrastructure, mechanisation of artisanal fishing and manpower development.[116] Three other major factors have been identified as the additional causes for the disparity between their words and their actions. The first is the absence of data on fish stock and the quantity of catch that has occurred in their waters. This is essentially due to lack of fisheries management objectives and programmes. A report on the survey conducted on behalf of the United Nations Economic Commission for Africa (ECA) has asserted that in Africa:

> The research component needed for rational exploitation of the living resources is greatly deficient. Quite often, development programmes are planned on the basis of scanty baseline data, yet no provision is made for a research component to generate fresh data that will improve forecasts of input and outcomes. Information and communication are really weak links in the chain of capabilities for living resources exploitation in the region ... .[117]

Some states have begun taking corrective measures to remedy this shortcoming. For example, Sierra Leone and Liberia have asked for and obtained the assistance of the Food and Agricultural Organisation of the United Nations (FAO) in the reorganisation of their fisheries sector. The term of reference was for the FAO

> to study existing legislation and institutions affecting fisheries, and prepare, in consultation with appropriate national authorities, general proposals for the revision and possible harmonisation of fisheries legislation in the two countries, and for improving the administration of that legislation ... .[118]

Sequel to the studies conducted and the recommendations made, a draft legislation was submitted to Sierra Leone.[119] Article 12 of the draft legislation requires the Director of Fisheries to base management and development plans for fisheries on

> (c)... sound management principles and the best scientific information available to be gained through national and international research programmes.[120]

Article 11 of the draft legislation provides that:

> (2) Each management and development plan, so far as practicable with available information shall:
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> (a) identify the fishery resources and estimate the potential average annual yield;

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[116]Chapter III on Natural Resources in The Lagos Plan of Action for the Economic Development of Africa 1980–2000, developed by the Organisation of African Unity (OAU), states: 'The major problem confronting Africa in the field of natural resources development include lack of information on natural resource endowment of large and unexplored areas and the activities of transnational corporations dealing with natural resource assessment; lack of adequate capacity (capital, skill and technology) for the development of these resources...'

[117]ECA Survey Report n 95 above at 6.

[118]ER Fidel *Legal and institutional aspects of fisheries management in Sierra Leone* (1978) 1.

[119]ED Evans *Report of mission to draft comprehensive fisheries legislation for Sierra Leone* Regional Fisheries Law Advisory Programme (CECAF), Food and Agricultural Organisation of the United Nations (1981).

[120]*Ibid* 36–7.

(b) assess the present state of exploitation of the fishery resources and, taking into account all relevant biological, social and economic factors determine whether the fishing efforts should be increased, remain the same or be decreased, and if sufficient information is available, determine the total annual catch that may be allowed from each fishery ... .[121]

Similar projects were undertaken on behalf of Guinea-Bissau, Somalia, Kenya and Mauritius. Congo, Ivory Coast and Senegal began collaboration in fishery research with Office de Recherches Scientifiques et Techniques Outre-Mer (ORSTOM) of France in the mid 1980s. Surveys of fisheries resources have also been carried out by some African states under bilateral or multilateral arrangements with organisations such as the Indian Ocean Commission on Fishery (IOFC) or the Committee for the East Central Atlantic Ocean (CECAF) a subsidiary of the FAO or the United Nations Environment Programme (UNEP).

The effect of the paucity of data is not limited to management or administrative objectives of fisheries. In Guinea-Bissau for example, lack of data and under reporting is believed to have led to severe disruption of any stock conservation measures and neutralised resource management efforts of the government. The documented evasion of data collection processes and under reporting by foreign fishing fleets also affects the income that African states can generate from licensing foreign fishing. For example, in 1986, Mauritian revenue from licensing arrangements from foreign fishing was US$6,25 million. According to the Crown Agent, the expected revenue from the licensing arrangement with forty-three factory trawlers, ice-fish ships and small vessels was about US$28 million.[122] Similarly, Guinea received less than US$2 million for licences sold against cash payment or fish delivered for local consumption by foreign fishing fleets under licensing arrangements in 1985. The resources available to these vessels were estimated at 135 000 tons a year and they were worth US$66.6 million. It was estimated that Guinea should have received a revenue of approximately US$10 million from its licensing fees for the exploitation of these resources.[123]

The second factor which reduces the ability of African states to exploit their resources is the use of destructive or wasteful fishing practices. This involves the use of inappropriate fishing gear such as fish traps and gill nets. A more seriously destructive practice is the use of explosives like dynamite and the use of spearguns. A Tanzanian national report compiled by Kamukala indicated that there is still widespread use of explosives in Tanzania.[124] This practice has the effect of killing fish and destroying corals and mollusca. An intensive use of explosives for fishing decimates the environment which takes years to recover. One expert has pointed out that marine communities are prone to degradation when marine conditions change beyond a certain tolerance level.

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[121] *Ibid* 36.

[122] Grown Agents *Study of Mauritanian fisheries sector* (1985) 71 74.

[123] VM Kaczynski 'Foreign fishing fleet in the Sub-Saharan west African EEZ, the coastal state perspective' (1989) 1 *Marine Policy* 5–10.

[124] UNEP Regional Seas Report and Studies No 51 n 91 above at 109.

The use of spearguns was found to be adversely affecting the marine resources in Mauritius. As a result the speargun has been banned and permits for its importation are no longer granted. The spearguns in use are being confiscated and compensation paid to their owners.[125]

A third factor is the inadequacy of the infrastructure necessary to support effective resource exploitation. For example, in several African states there are no fishing harbours, mining ports or oil terminals with specialised berths, fuelling, loading and unloading facilities. These are usually shared with general cargo. Roads, rail lines and other transport networks and transportation facilities necessary to move resources to markets and storage are, in a lot of cases, lacking as well.

In spite of these difficulties, it is clear that some progress has been made in the exploitation of living resources since the institutionalisation of the EEZ. Experts have noted that after the introduction of the EEZ, African states in the sub-Saharan West Africa were able to increase their share of resource harvest in that region from thirty-five per cent to approximately fifty-two per cent. Since the mid 1980s their harvest has stabilised at an increase of fifty per cent and in some cases even less. There has also been a corresponding decline in the harvest by distant water fishing states. This latter fact can be ascribed to the effect of the exercise of sovereign rights over wider maritime areas which has made it possible for African states to introduce licensing fees.[126]

Mauritius, which had claimed an EEZ in 1977, tolerated unauthorised fishing in its waters by foreign vessels under licence from Seychelles. Now it has adopted a new approach to its fisheries industry. Since the early 1980s it began harnessing the explosive growth in tuna purse-seining in the western Indian Ocean and directing it towards the use of Port Louis as a trans-shipment and bunkering base.[127] The success of this enterprise has led to a Japanese assisted expansion of the port to enable it to better accommodate fishing vessels. The Mauritian fishing effort is limited to one purse-seiner. Its operation, which used to be seasonal, has now been expanded to cover the whole year. In addition, there have been fishing arrangements with France, Spain and the European Economic Community (EEC) in place since 1984. Marine capture in Mauritius has improved from 3 100 tons in 1970 to 17 952 tons in 1987.[128]

In west and central Africa, the richest fishing grounds are associated with desert coasts and relatively low population areas. These areas are situated in the upwellings that occur in the north-west frontal zone and the upwellings in the Benguela current regime. (See MAP 2 below.) Thus, Nigeria, Ghana and Ivory Coast with large populations have relatively smaller fishery resources but

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[125]*Ibid* 262.

[126]Kaczynski n 123 above at 3.

[127]PJ Derham & LC Christy *Licensing and control of foreign fishing in Mauritius* (1984) 2.

[128]Food and Agricultural Organisation of the United Nations *Source book for the inland fishery resources of Africa* (1990) 1 CIFA Technical Paper 18/1 136.

more active fishery industries. On the other hand, Mauritania, Senegal and the Gambia with smaller populations have larger fishery resources with only small industrialised fisheries. There is also an important upwelling off the coast of Somalia during the south-west monsoon, but the area remains generally unexploited.

Mauritania with a coastline of 450 km and a population of 1,32 million had a marine catch of 21 000 tons before its first EEZ legislation in 1978. Its marine catch in 1987 was 93 000 tons. Senegal, with a land area of 1 961 923 sq km and a coastline of five hundred km produced 169 200 tons in 1970, 35 000 tons in 1976 and, in 1987, production fell to 28 000 tons. The Gambia has a population of ,55 million in an area of 11 300 sq km and a coastline of 80 km. Its continental shelf area, within 200 nautical miles is 5,700 sq. km. When the Gambia declared an EEZ in 1977, its fishing production rose from 9 000 tons in each of the previous three years, to 22 131 in 1977 and then to 27 724 tons in 1978. From 1982, there was a fall in production to 11 676 tons in 1987. With eighty million people, Nigeria has the largest population on the continent. It has a coastline of seven hundred km and a continental shelf area of 61 500 sq km. Its fishing efforts in 1970 were estimated to amount to 105 990 tons. Its best effort was in 1986 when its production rose to 161 515 tons. Ghana is one of the most mechanised countries on the continent and it has one of the longest traditions in sea fisheries. It has a population of 10,48 million people. Its coastline is six hundred km long and its continental shelf is 63 600 sq km. Its marine catch in 1970 was 141 500 tons. This rose to 317 817 tons in 1987. There was also an improvement in the fishery production of the Ivory Coast from 55 500 tons in 1970 to 74 253 tons in 1987. The Ivory Coast has a population of 5,5 million people and a continental shelf area of 43 900 sq km.[129]

As a reflection of the value of the EEZ to African states, the developments just noted may be regarded as a breakthrough in resource sharing between African states and other non-African states. This is particularly true when the developments are set against the background, noted above, of the modest beginnings of African states before the introduction of the concept of the EEZ. It is noteworthy, however, that in spite of the progress, the effect of the exercise of sovereign rights over living resources on the social and economic development of African states has remained negligible. Nineteen African states, some of them large producers, have remained, between 1980 and 1985, net importers of fish and fish products. The largest ones are Egypt, Nigeria and Ivory Coast. Gabon produced 14 000 metric tons of fish in 1984. This has been calculated to constitute sixty per cent of its fishery needs. It therefore has had to import 40 per cent of its domestic needs. In Mauritania, fish and fish products accounted for only eleven per cent of the total export value in 1982. In Senegal and Gambia for the same period, it was twenty-two per cent and thirteen per cent respectively. In Morocco fisheries exports came third behind agricultural produce and ore. In 1987, fisheries exports accounted for only

[129] *Ibid* Vol 1-3.

3,5% of total exports in Guinea-Bissau. Its total income from 224 licences issued in 1985 was 364,9 million PG which amounts to only 5,5% of the total revenue of that state. Furthermore, the efforts made by African states are eclipsed when set against their resource potential on the one hand, and the accomplishments of the distant water fishing states in the Atlantic and the Indian Oceans on the other hand. Thus, a report from Guinea to the intergovernmental meeting on aspects of the application of the provision of the United Nations Convention on the Law of the Sea held in 1984 under the auspices of the ECA, states that Guinea had an agreement in terms of which the fleets of the USSR fish in the Guinean waters without any obligation to pay fish but sells 10 000 tons of fish annually, paid in convertible currency. According to the report:

> This fish represents more than 75% of the controlled national supplies and it is, therefore, particularly impossible to terminate the contract in spite of the disadvantages before finding a replacement source.[130]

In Somalia the fishery potential is estimated at 2 million tons *per annum* for lantern fish alone. Only a fraction of between 1 and twenty per cent of other species is currently being exploited. The local mode of exploitation is artisanal. *Houri* (a 2–3m plank boat propelled by paddles or a small lantern sail), the *mashua* (an up to 12m sailing boat) and *beden* (a 6–10 m sawn plank boat propelled with oars and sail) are used for fishing activities along a 3,200 km coastline. In addition there are between two and ten trawlers operating within the two hundred-nautical mile territorial sea of Somalia. In all 4 000 full-time fishermen are involved. It is estimated that Somalia averages 14,000 tons of fish *per annum*. Industrial fishing by foreign vessels accounts for 8,000 tons of the total catch. Only between twenty-one and thirty foreign vessels were licensed to fish between 1983 and 1985 in the Somali waters. The Somali government is aware that large scale illegal fishing goes on in its territorial sea, but lacks the necessary infrastructure to combat it.

Artisanal fishing, which predominates in Sierra Leone is steady in its yield at between 50 000 and 60 000 tons of fish a year.[131] Fishermen operate from open boats with narrow beams.[132] Some of these boats are fitted with outboard engines, others are not. On the other hand, industrial fishing by foreign vessels has increased sharply. It is estimated that fish catch by foreign vessels under licences increased from 4 500 tons in 1975 to 100 000 tons in 1980.[133] Only 25 per cent of this total was landed in Sierra Leone.[134] Illegal fishing and poor systems of reporting even by licensed fishing vessels have made it impossible for the Sierra Leonian government to determine the true scope of fishing in its territorial sea.[135]

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[130]ECA Survey Report n 95 above at 10.

[131]Evans n 119 above at 2.

[132]TR Brainerd *Report on an expert consultation on monitoring, control and surveillance systems for fisheries management* FAO (1981) 52.

[133]Evans n 119 above at 2.

[134]Brainerd n 132 above at 52.

[135]*Ibid.*

Kenya's coastline is approximately four hundred kilometres long.[136] Up to 7 600 fishermen make up the manpower of its artisanal fishing industry.[137] Approximately 2 000 'locally built vessels' are employed by the fishermen. Only 10 per cent of these vessels are mechanised. It is estimated that only 4 000 tons of fish are landed annually.[138] Licensing of foreign fishing vessels is negligible.[139] It is generally believed that large scale illegal fishing by foreign vessels occurs in the Kenyan EEZ.[140] It is believed that in Guinea-Bissau, about 8 000 families depend wholly or partially on fisheries for their livelihood.[141] As in all the above cases, the principal mode of exploitation is artisanal.[142] Local fishing efforts — artisanal and industrial — produced 4 608 tons of fish in 1985.[143] On the other hand, foreign vessels under licence in the same year, employing two hundred people reported a catch of 80 000 tons.[144] In 1986 the catches were 2 541 and 17 732 for local fishermen and the foreign vessels respectively.[145] It is believed that there is a high rate of illegal foreign fishing in the coastal waters of Guinea-Bissau.[146]

Even in Morocco where there are four hundred trawlers including 150 deep sea refrigerator vessels; 450 sardine boats; 1 600 long-line vessels, artisanal fishing still plays a prominent role in the state's fishery activities. For this purpose, there are 6 000 boats with or without motor.[147] More than one million tons of fish was caught in the Moroccan waters, but only 300 000 tons employing over 100 000 people, was landed in Morocco.[148]

What all these states have in common is the labour-intensity of their fishing activities. The states put in so much work and reap so little because of the low level of their technology. This makes no economic sense[149] since it brings no advantage to the coastal state. It is also a common element that illegal fishing goes on in all their jurisdictions and they are generally powerless to combat it. To a certain extent, the relationship between African states and the

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[136]LC Christy *Fisheries legislation in Kenya* FAO Technical Report No 29 (1979) 2.

[137]*Ibid.*

[138]*Ibid.*

[139]*Ibid.*

[140]A Okola Interview with the author at the Ministry of Justice, Nairobi Kenya (1989). See also CO Okidi *Kenya's marine fisheries, an outline of policy and activities* Occasional Paper No 30 (1979) 33–34.

[141]R Rackowe *Review and evaluation of the fishery sector in Guinea-Bissau and considerations in regard to future investment* FAO (1988) 5.

[142]*Ibid.*

[143]*Ibid* 7.

[144]*Ibid.*

[145]*Ibid.*

[146]*Ibid.*

[147]ECA Survey Report n 95 above at 15.

[148]*Ibid.*

[149]AW Koers 'Fishery proposal in the United Nations Seabed Committee: An evaluation' (1972) 2 *Journal of Maritime Law and Commerce* 183 188.

developed states benefits both parties in the access licensing arrangements.[150] The developing states get some fish and some foreign currency while the developed states obtain access to the living resources of African states on payment of fees.[151] It is hard on African states that whatever foreign currency is generated from foreign fishing licences, the foreign currency 'recycles' into buying spare parts, fishing gear and equipment from the developed states.[152] More significantly, the access licensing arrangement is not a viable alternative to self-sustaining capabilities.[153] Joint ventures have not fared much better either. For effective contribution towards the economic development of African states, joint venture relationships with the developed states require what African states cannot provide capital injection and the technical and commercial know-how for playing an effective part in the management of the venture.[154]

It is harder still that freedom of navigation makes the violation of fishery laws possible. Since, supposedly, only minimum interference is possible for all vessels, including fishing vessels generally,[155] enforcement of fishery laws becomes more arduous. The consequence of frequent violation of fishing laws is to make licensing of foreign fishing unattractive. This deprives the developing states of the foreign currency they can derive from licensing of foreign fishing. More importantly, it makes the determination of the state of the marine resources more difficult.[156] In turn, the whole basis of the resource rights

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[150]See generally on this SKB Mfodwo, BM Tsamenyi & SKN Blay 'The Exclusive Economic Zone: State practice in the African Atlantic region' (1989) 20 *ODIL* 445–499.

[151]Experts believe that there are some advantages to be gained from this type of relationship: 'they can be set up quickly, the terms can be renegotiated relatively easily and frequently, and they can be discontinued when necessary. They can also, if proper catch reporting systems are in force, provide essential information on the resources available for fisheries development.' R Hamlisch *Methodology and guidelines for fisheries development planning, with special reference to the developing countries of African region* (1988) 58.

[152]Rackowe n 141 above at 2.

[153]As already noted, one of the major objectives of the concept of the EEZ is to give a solid basis to developing states for economic development. But as Hamlisch n 151 above at 58 has pointed out, the access licensing arrangement may be good as an interim or supplementary measure, it does 'not lead directly to the development of national fisheries'. According to F Mirvahabi 'Significant fishery management issues in the Law of the Sea Conference: Illusions and realities' (1977–8) 15 *ODIL* 493 509, reliance on this system is a recipe for disaster, particularly in relation to conservation measures in the EEZs of the developing states . 'The fees may be extremely high in the case of abundant fishing zones, or low in the case of a fishing area with less attractive fish species. In both instances, the outcome would be congestion of fishing vessels in the area and application of the conservation measures of the flag states.

[154]Hamlisch n 151 above at 48.

[155]WT Burke 'National legislation on ocean authority zones and the contemporary law of the sea' (1981) 9 *ODIL* 289–22; WT Burke 'Exclusive fisheries zone and freedom of navigation' (19832–3) 20 *San Diego Law Review* 595–23.

[156]To quote Mirvahabi n 153 above at 508: 'A sophisticated conservation program needs an adequate budget and sufficient data, both of which probably cannot be provided by most developing coastal states whose fisheries are based on small-scale operations. Lack of sufficient data and statistics may also cause problems for a developing coastal state, even in adopting its allowable catch formula.'

of African coastal states is threatened. These circumstances contrast sharply with the expectations of African states in the development of the concept of EEZ.

Sovereign rights and jurisdiction over functional rights

In addition to resource rights, coastal states possess certain functional rights in the EEZ. By virtue of article 56 of the LOSC the coastal state has sovereign rights over the production of energy from water, winds and current in the EEZ. A coastal state may exercise these rights in one of two ways. It may use the elements directly for the purpose of exploration and exploitation of natural resources, or, it may use the elements for economic purposes unconnected with its natural resources. For example, it may use the elements completely separately for the sole purpose of generating energy either for its own use or for a commercial enterprise that would benefit it. It may generate various forms of energy for sale to other states. It may allow other states to generate energy on the payment of a licence fee.

The convention also makes a general grant of exclusive jurisdiction 'as provided for in the relevant provision of the Convention with regard to

> (i) the establishment and use of artificial islands, installations and structures.[157]

The particulars of the jurisdiction are spelt out in Article 60 which states that

> 1. In the exclusive economic zone, the coastal state shall have the exclusive right to construct and to authorise and regulate the construction, operation and use of:
>
> (a) artificial islands;
>
> (b) installation and structures for the purposes provided for in article 56 and other economic purposes;
>
> (c) installation and structures which may interfere with the exercise of the rights of the coastal state in the zone.
>
> 2. The coastal state shall have exclusive jurisdiction over such artificial islands, installations and structures, including jurisdiction with regard to custom, fiscal, health, safety and immigration laws and regulations.

Few African states have drawn the distinction between their sovereign rights over resources and their exclusive jurisdiction over functional rights of the EEZ. With minor differences in the wording of their legislation, Equatorial Guinea, Kenya, Mauritius and Seychelles have done so.

The attention of African states is being drawn to some non-conventional sources of marine energy that can be harnessed within the context of African states' sovereign rights over functional activities in the EEZ.[158] One of these sources is the Ocean Thermal Energy Conversion (OTEC) which is a way of converting solar energy absorbed by the ocean into electric power. An encouraging experiment for the exploitation of this resource was conducted

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[157]Art 56(1)(b).

[158]Report of UN Department of International Economic and Social Affairs n 94 above at 28–34.

off the coast of Abidjan, Ivory Coast. Because of the presence of an ocean canyon close to the shore, Ivory Coast is considered one of the most attractive sites for the development of OTEC.[159] In future, it will be possible in East Africa to use near-shore shallow waters for thermal energy conversion with great efficiency because of the possibility that the pressure of low grade geothermal sources there may improve the thermal gradient. Other African states with potential OTEC resources are Comoros, Kenya, Madagascar, Mauritius, Mozambique and Seychelles.[160]

Another functional activity that can benefit African states in the future is the harnessing of the wave energy. Already, this is generally used to power buoys and lighthouses. Although it is renewable, wave power is intermittent and wave amplitude is highly variable and seasonal. These are draw backs in consistent wave power supply. Because further developments are considered possible, African states are closely monitoring technological progress in this area. Tidal energy operates on the same principles as hydroelectric power generation. It is economically feasible in areas where the tidal range exceeds two metres. It has a potential for commercial exploitation in France, China and the USSR. It is not, however, presently exploited in any African state. Salinity energy can also be exploited. Its power is generated when the osmotic pressure difference between two solutions of different salt concentration — fresh (river) water and salt (ocean) water — is separated by a semi-permeable membrane. The generation of salinity energy is capital intensive and therefore, for the moment, not exploited by any African state on commercial basis.

Jurisdiction over marine scientific research

All states, irrespective of their geographic location, and all competent organisations have the right to conduct marine scientific research (MSR).[161] Article 56 of the LOSC makes the general grant of jurisdiction to the coastal state. Article 246 details the content of that jurisdiction. It provides that the coastal state in its EEZ and continental shelf would have the right 'to regulate, authorise and conduct marine scientific research'. These competencies are subsequently amplified. By virtue of article 246(2), research can only be undertaken with the consent of the coastal state. The channelling of the discretion follows in paragraph 3 of the same Article. 'Coastal states' provides the paragraph, 'shall in normal circumstances, grant their consent' whenever such activities are sought to be undertaken for 'peaceful purposes and in order to increase scientific knowledge of the marine environment for the benefit of all mankind'.[162]

Article 246(4) provides that 'normal circumstances' may exist in spite of the absence of diplomatic relations between the coastal state and the researching state. The convention, in article 246(5), outlines the circumstances under

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[159]*Ibid* 28–29.

[160]*Guide to OTEC for developing countries* United Nations Publications No E 83 IIA 21 (1984).

[161]Art 238.

[162]Emphasis added.

which a coastal state may withhold consent in its own discretion. These circumstances arise when the research project

(a) is of direct significance for the exploration and exploitation of natural resources, whether living or non-living;

(b) involves drilling into the continental shelf, the use of explosives or the introduction of harmful substances into the marine environment;

(c) Involves the construction, operation or use of artificial islands, installations and structures referred to in articles 60 and 80;

(d) contains information communicated pursuant to article 248 regarding the nature and objectives of the project which is inaccurate or if the researching state or competent international organisation has outstanding obligations to the coastal state from a prior research project.

The coastal state has some rights that relate to the research activities in its EEZ. It is entitled to information;[163] it has a right to lay down the conditions under which the activities may be conducted;[164] it has the right to participate or be represented in the project;[165] and it has the right to order the cessation or suspension of the research activities.[166]

The discretion to consent to MSR is not open-ended. Rules, regulations and procedures made to govern MSR must be reasonable (article 255). A coastal state may not withhold its consent for MSR in areas beyond two hundred nautical miles, if such areas have not been earmarked for exploration and exploitation (article 246(6)).[167] There is a presumption of consent, if a coastal state belongs to, or has an agreement with an international organisation conducting research in its EEZ (article 247). Consent is implied if a coastal state does not act on a request within four months of the request being made (article 252). In a limited way, the discretion of the coastal state to suspend or terminate a project may be challenged (articles 264 and 297(2)).

It is difficult to generalise about the attitude of the African states to MSR. It is not, however, difficult to see that there is no uniformity in their perception of MSR. A few states conform to the requirements of the convention. Most seem uncertain in their approach. What can be said with some degree of certainty is that not many have claimed much more than the convention allows and no state in Africa explicitly prohibits MSR.

There are obvious signs that training and research in marine science have progressed in some African states, particularly in fishery sciences. Thus thirteen coastal states have research institutions and centres dealing mainly with fishery sciences. Marine science research and training are most advanced in Egypt. It has eight institutions dealing with different disciplines of oceanography and fisheries. The faculty of science of the University of

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[163]Art 248.

[164]Art 249.

[165]*Ibid.*

[166]Art 253.

[167]This is, of course, subject to the rights of the coastal state in its continental shelf art 246(7).

Alexandria includes a Department of Oceanography.[168] There is a Hydrology/Fisheries Unit at the University of Nigeria, Nsuka and a Nigerian Institute for Oceanography and Marine Research in Lagos, Nigeria. There is a Fisheries Research Centre in Albion, Mauritius. There is also an Oceanology Group in the Faculty of Science of the Umar Bongo University, Libreville, Gabon. In Sudan, there is an Institute of Oceanography in Port Sudan established under the Council for Scientific and Technological Research in 1971. Its objectives include

> - Scientific investigation with a view to describing and understanding marine phenomena
> - Exploitation of organic and inorganic resources near, in or under the sea
> - Prediction and control of phenomena affecting the safety and economy of marine coastal activity
> - Training of Sudanese personnel in all fields of marine science both locally and abroad
> - Carrying out of detailed geological and geophysical mapping of the Red Sea, Western coast and bottom areas of Sudanese territorial waters.[169]

Seventeen African coastal states have no institutions dealing with either fisheries or oceanographic research and training. Nonetheless, in almost all cases there are plans afoot to improve the situation.

Jurisdiction over management rights

The LOSC makes a general grant of rights to protect and preserve the marine environment in article 56(1)(b)(iii). The specifics of these rights and the obligations they entail are spelt out in Part XII of the convention. Article 193 makes it clear that the exercise of sovereign rights in relation to natural resources must go together with the 'duty to protect and preserve the marine environment'. States are enjoined, 'individually or jointly as appropriate'.[170] to take all measures necessary to protect the environment in the course of their own activities or the activities they consent to in their EEZs.[171] States must ensure that in the course of exercising their rights to protect the environment, other states are not inconvenienced.[172]

Another dimension of management is the right and obligation created by the convention to conserve the resources of the EEZ. The general right to conserve the resources of the EEZ is granted in Article 56(1)(a). The obligations that go along with these rights are laid down in articles 61 to 70. In the first paragraph of article 61, the coastal state is granted the specific rights to determine the allowable catch of the living resources of the EEZ. The exercise of this right is intended to achieve two closely related objectives. The first objective is that the resources should not be endangered by over-

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[168]ECA Consultancy Report n 100 above at 14.

[169]Institute of Oceanography, Port Sudan, Council for Scientific and Technological Research *Report of the period 1982–1986* 1.

[170]Art 194.

[171]Art 194(2). These and other injunctions are spread throughout Part XII from art 192 to art 237.

[172]Art 194(2) par 4.

exploitation. The second objective is that the coastal state must:

> maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors, including the economic needs of coastal fishing communities and the special requirements of developing states and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standard, whether sub regional or global.

As a means of achieving these objectives, a coastal state must conserve and manage the relevant resources, 'taking into account, the best scientific evidence available to it', (paragraph 2 of article 61). These objectives are designed to lead to another objective in article 62: the management of resources in a manner that promotes 'the objective of optimum utilisation of the living resources of the' EEZ. All of these provisions are intended to facilitate an equitable distribution of the living resources between the coastal state and, on one the hand, those states whose nationals have habitually fished in the zone or which have made substantial efforts in research and identification of stocks (article 62(3)), and on the other hand, the land-locked and geographically disadvantaged state (LL/GDS) under articles 69 and 70.[173]

States are generally reluctant to make direct commitments to their obligations. African states have not behaved any differently in this regard. However, most African states have made international commitments outside their EEZ legislation. An example of this occurs in the Rabat Declaration adopted by African states bordering the Atlantic Ocean on 30 March 1989. The declaration established a basis for a regional cooperation among twenty-two African states for the purpose of organising and developing expanded and diversified fisheries management among the states of the region. The legal framework for the achievement of these objectives is contained in the Regional Convention on Fisheries Cooperation Among African States Bordering the Atlantic Ocean 1991.[174] Article 12 of this Convention provides that:

> Parties shall intensify their efforts at the national, regional and international levels, directly or with the assistance of competent regional or international organisations, to ensure the protection and preservation of the marine environment as well as the management of the coastal areas of the Region.
>
> To this end, they shall promote the strengthening of bilateral, sub-regional and international cooperation mechanisms dealing with the protection and preservation of the marine environment and coastal areas as well as the intensification of their activities, while taking into account the relevant international standards and regulations on the subject.

Another example is the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters (1972) which many African states have signed. The objective of this convention is to control pollution of all seas by

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[173]Promoting an objective of optimum utilisation makes it possible for the coastal state to determine its own capacity. This subsequently enables the state to declare surplus if it cannot harvest the entire allowable catch, art 62(2) and (3).

[174]This convention represents the first time African states have organised themselves to the exclusion of all other non-African states for the purposes of asserting control and cooperating among themselves over fishing activities in the maritime areas of the region.

dumping and to encourage regional agreements as supplements to the Convention.

Scientific knowledge about the state of the resources in the waters of African states, an element of crucial importance in management strategy, is generally considered inadequate. Thus, one commentator has described the available data on the fishery activities of African states as 'proximate'.[175] He admits, however, that what is available does present 'a reasonably reliable impressionistic picture'.[176] Various international organisations have been working towards establishing a more credible data especially for the purposes of reinforcing and improving the conservation of coastal and marine resources and ecosystems of African states. The FAO alone, for example, has established regional and sub-regional fishery bodies to facilitate collaboration and cooperation in fisheries development and management efforts. In Africa, there are: the General Fisheries Council for the Mediterranean (GFCM) which coordinates the activities of some African and other states bordering the Mediterranean Sea; the Fisheries Commission for Eastern Central Atlantic (CECAF); and the Committee for the Development and Management of the Fisheries of the South West Indian Ocean (SWIO) and (4) Committee for Inland Fisheries for Africa (CIFA). The FAO also has a Regional Office for Africa (ROA) in Accra, Ghana, to lend additional support to the efforts of its overall coverage.[177]

Notable among the efforts of the international organisations is the introduction of the World Conservation Strategy (WCS) prepared by the International Union for the Conservation of Nature (IUCN) with the advice, cooperation and financial assistance of UNEP, the FAO and UNESCO. Principal among the objectives of WCS is the stimulation of a more focused approach to the management of living resources and the provision of policy guidelines on how this can be carried out by policy makers, conservationists and development practitioners. Several African governments played an active part in its launching in 1980 and several governments have formally endorsed its objectives. Seychelles is one such government. In 1982, Seychelles created the National Environment Commission, a body corporate independent of government, to formulate national policies and coordinate all environmental matters. The commission set up six sub-committees on various issues related to conservation to write reports as a prelude to the formulation of a National Conservation Strategy (NCS). These activities are intended to replace the 1971 White Paper on the Conservation Policy of the Seychelles.[178] Nigeria also adopted a National Conservation Strategy for Nigeria in 1986. In addition, Nigeria has established a Federal Environmental Protection Agency (1988) to

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[175]R Lawson, & M Robinson 'Artisanal fishing in west Africa: Problems of management implementation' (1983) 7 *Marine Policy* 279 280.

[176]*Ibid.*

[177]Other organisations that can be alluded to include UNEP, the International Maritime Organisation (IMO), the Ocean Economics and Technology Branch of the United Nations (OETB) and the International Hydrographic Organisation (IHO).

[178]UNEP Regional Seas Reports and Studies No 51 n 91 above at 34.

establish national environmental guidelines, standards and criteria in the areas of water quality, effluent discharge and hazardous substance discharge control. There is also a Natural Resources Conservation Council Decree promulgated in 1989. The task of the Council, set up pursuant to the Decree, is to coordinate matters concerning the conservation of natural resources, formulate national policy on natural resources conservation, monitor the activities of conservation agencies and carry out research and other activities to enhance conservation efforts in Nigeria.

For a conservation measure to be successful, there is a need for a state or, in the case of shared stock, a group of states to make laws which would prohibit, or at the very least control, all activities which may affect the characteristics of natural ecosystems. Policy requirements in this regard may take various forms. A law may be directed at general fishing activities as in the case of the Gambian legislation noted above, or it may take a broader and more purposeful approach by protecting specific maritime areas as, for example, by creating marine zone parks, marine reserves or wild life conservation areas. In this regard, it has been suggested that the highest priority for immediate conservation action should be given by African states to critical habitats of commercially viable species. These have been listed as estuaries, mangrove forests, coral reefs, seagrass beds, submarine banks and plateaux, rocky reefs and upwellings. All these are considered important habitats for fisheries and they are all in need of conservation management.[179]

Some problems have been identified as being responsible for the inability of African states to take effective marine conservation measures. Firstly, African states have had no clear policies geared towards the protection of marine resources in spite of discernible adverse status of some of those resources. Secondly, there are no established institutional structures available in African states to deal with conservation matters as, in most cases, conservation issues are attached as appendages to pre-existing ministries. Thirdly, specialists in conservation are not available or are inadequately trained for that purpose. Fourthly, all of these problems are, in various ways, related to the scarcity of the financial resources necessary to set up the framework for solving the problems.[180] UNEP has found twenty protected marine areas in Seychelles alone. 20 more are shared among Comoros, France (Reunion), Kenya, Madagascar, Mauritius and Mozambique. The total area under protection in these states is estimated at 0,5% of the total continental shelf area of the East African Region. This is a negligible fraction of the total EEZ of the states of that region.[181] Interests being protected within this limited area include coral reefs (Kenya, Seychelles and Mozambique); islets with nesting seabirds (Kenya, Mauritius); turtles (Mozambique, Madagascar, Seychelles); fishing grounds

[179]United Nations Environmental Programmes (UNEP), *Marine and coastal conservation in the east African region* UNEP Regional Seas Reports and Studies No 39 (1984) 3.

[180]*Ibid* 8–9.

[181]*Ibid* 43–4.

(Mauritius); and seagrass beds (Mozambique).[182] Tanzania and Somalia have no protected marine areas.[183]

Meanwhile, it is believed that coconut crabs and dugong are extinct in Mauritius as well as in Seychelles. About fifteen species are endangered in the waters of some African states. These include the Zanzibar suni in Tanzania; black lemur and aye in Madagascar; and the blue whale in Tanzania, Mozambique and Madagascar. Six species are considered commercially threatened. Some of these have been identified as the pearl oyster in all the east African states except France (Reunion); trochus in Madagascar; spiny lobster in all the east African states; black coral in Mauritius and Seychelles; whip coral in France (Reunion), Mauritius and Seychelles. Loggerhead turtle in Kenya, Tanzania, Mozambique and Madagascar, wattle crane in Mozambique and dugong in Somalia, Kenya, Tanzania and Mozambique are some of the five species which have been categorised as vulnerable.[184]

In addition to national efforts, international commitments can be called in to fill any vacuum that may be left.[185] At regional level, the relevant treaty that may serve this purpose is the OAU's African Convention for the Conservation of Nature and Natural Resources (1968). Its central theme is the undertaking of individual and joint action for the conservation, utilisation and development of natural resources for the present and future welfare of mankind, from an economic, scientific, educational, cultural and aesthetic point of view.[186] Article 3(4) of the Regional Convention on Fisheries Cooperation Among African states Bordering the Atlantic Ocean 1991 provides that:

> Parties shall endeavour to adopt harmonised policies concerning the conservation, management and exploitation of fishery resources, in particular with regard to the determination of catch quotas and, as appropriate, the adoption of joint regulation of fishing seasons.

Article 4 provides further that:

> Parties undertake to exchange information on their activities regarding the assessment and conservation of highly migratory species and coordinate their actions in this area within the competent international organisation.

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[182] *Ibid* 56–58.

[183] *Ibid* 43.

[184] *Ibid* 125–127.

[185] The exercise of management rights has international (sub-regional, regional and global) implications. These offer other dimensions by means of which the exercise of the rights can be enhanced. Art 50 of the Third ACP-EEC Convention 1984, pledges to foster the development of fishery resources in Africa and other developing states. Cooperation in that area, the provision says, will promote the optimum utilisation of the resources. At the same time, the parties recognise the rights of LLS to participate in the exploitation of the resources in conformity with the current international law. International organisations such as the United Nations Environmental Programme (UNEP) are providing avenues for the acquisition of scientific and technological capabilities and information. Other organisations whose objectives would have similar effects are the UNESCO, the FAO, the IOC and the IMCO. See for example UNEP's *Action plan for the protection and development of the environment and coastal areas of the west and central African region* UNEP Regional Seas Reports and Studies No 27 (1985) 1.

[186] See the Preamble.

The recognition of these obligations and the determination to discharge those obligations conveyed by this convention satisfy the general demands of the Law of the Sea Convention.[187] Others sources of obligation are the Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central Africa Region (1981), and the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (1985). At international level, the relevant treaties to which African coastal states have become party are the International Convention for the Conservation of Atlantic Tuna (1966); the Convention on the Conservation of Living Resources of the South East Atlantic (1969); and the Treaty on the Prohibition of Emplacement of Nuclear Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and the Subsoil Thereof (1971).[188]

CONCLUSION

With a duality of rights, the LOSC has established two mutually independent, but complementary regimes in the EEZ. Concurrently, the LOSC recognises a certain amount of fusion in the rights of the coastal state. In addition, the coastal state is granted exclusive functional rights as well as the exclusive right for the management of the living resources of the EEZ. All African states which are geographically capable of doing so, have claimed resource rights. However, only a few have made references to functional rights although some do have potential for such activities as OTEC. On the other hand, there is some progress in the management activities of African states generally. Most states have now put in place policies, legislation and programmes for the protection of the marine environment as well as for the conservation of resources. The legislation of African states, however, does not adequately distinguish between the EEZ and the continental shelf. There is, nonetheless, some reflection of the distinction in the practical application of their sovereign rights.

Generally, African states have a narrow and steep continental shelf which in east Africa does not yield much by way of mineral resources. African states, particularly on the west coast, which have the potential for the exploitation of non-living resources, have concentrated, mainly, on the exploration and exploitation of hydrocarbon and gas in their continental shelves. Tangentially, there is hardly any African state whose exploration and/or exploitation activities in this area are wholly indigenous. The preponderance of the efforts of African states, however, is directed at the exploitation of fisheries. In this area, as in all the others, financial constraints have adversely affected policy implementation, provision of infrastructure necessary for the development of

[187]In fact the Preamble to the African Convention noted the LOSC and particularised the provisions of the latter convention which encourage 'the conclusion of regional and sub-regional agreements on fisheries as well as other relevant international treaties'.

[188]These commitments may not satisfy all the requirements of the convention. They will however go a long way in setting the pace towards the satisfaction of the remainder of the requirements.

fisheries and the availability of adequately trained personnel. Thus, the progress that is noticeable in the area of fisheries can be so regarded only when the activities of African states are contrasted with their humble beginnings in industrial fishing. Relative to their potential and relative to the state of technology at international level, there is clearly a need to do considerably more than has been done so far if the EEZ is to fulfil its role in the social and economic development of African states.