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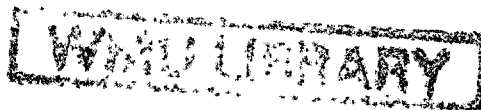
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WORLD MARITIME UNIVERSITY.

Malmoe - Sweden.

FISHERY MANAGEMENT IN THE CONTEXT OF TANZANIAN
ADMINISTRATION OF MARITIME RESOURCES.

By

Tuvako Nathaniel Manongi.

TANZANIA

A dissertation submitted to the World Maritime
University in partial fulfilment of the requirement for
the award of the Master of Science Degree in General
Maritime Administration (Msc. GMA).

1992.

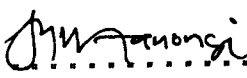
FISHERY MANAGEMENT IN THE CONTEXT OF TANZANIA'S

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I certify that all the materials in this dissertation which is not my own work has been identified and that no material is included for which a degree has been previously conferred on me.

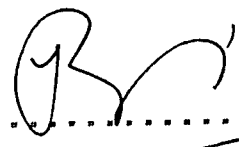
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DEDICATION.

To my wife, love and best friend, Upendo;
My daughter, Leila;
My sons Timon and Msafiri; and,
To our still born baby whose love, on this earth,
we will never come to know and appreciate.

Acknowledgments.

In a work such as this, one is invariably indebted to a lot of people and institutions for their various contributions towards making it all possible.

I am grateful to my sponsors, the then International Centre for Ocean Development (ICOD), and now, the Canadian International Development Agency (CIDA), for their belief not only in the common heritage of our oceans but also in the practical transfer of technology through education. I will always be touched by the opportunity, through me, extended to my country.

The Food and Agriculture Organization (FAO) in Rome; The Ministry of Agriculture, Fisheries and Food in England; and, the fishing industry in Boulogne - France, where FROM-NORD co-ordinated field visits, for invaluable insights into the practical and theoretical concerns relating to the management of "our" fisheries as we aspire for economic development.

I acknowledge with gratitude the questioning approach of my Course Professor, Professor T. Sampson, for his "willingness to learn" which helped to broaden my perspective. I am indebted to Mr Boixel for his practical support and encouragement. The open consultations with him where a deeper focus on the issues was always urged, and for the assistance in coordinating some of the thoughts.

Lastly, it is my hope that this work will bring an enhanced understanding of the issues facing the Tanzanian administration in the management of our ocean resources, and, in a small way contribute to its improvement.

ABSTRACT.

What are or should be the economic and developmental objectives of Tanzania's regime for the exploitation of her fisheries? How suitable are the traditional techniques for managing access in the context of her social - economic outlook? What are the prospects for alternative strategies? Can these strategies be appropriately employed in the context of the UN Law of the Sea Convention, and within the existing institutional framework? What real or potential benefits does Tanzania obtain or stand to obtain in the light of an access regime suitable to its socio-economic setting?

**Fishery Management in the Context of the Tanzania's
Administration of Maritime Resources.**

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INTRODUCTION

In 1973, almost a decade before the conclusion of the United Nations Convention on the Law of the Sea, the United Republic of Tanzania proclaimed the extension of her territorial sea from 12 to 50 nautical miles. It was not surprising however that in making this declaration the expressed objective was claimed, amongst other, as an effort to keep foreign fishing vessels away¹. There was no doubt that the interest which the government was trying to preserve by this undertaking was essentially an economic interest.

The advent of the 1982 United Nations Convention on the Law of the Sea, which Tanzania has since ratified, and which reverted her territorial sea claim to the pre-1973 twelve nautical miles but augmented by a 188 nautical miles Exclusive Economic (fishery) Zone was a highly welcome development. For Tanzania, like many other states, the extended national jurisdiction while presenting a new and unprecedented opportunity to harvest the benefits of the living and non-living resources off her shores, it also exposed her to equally new and unprecedented challenges in relation to her strategies and policies for fisheries management in the context of her development objectives.

In as much as different countries have reacted differently in their attempt to harvest the perceived fortunes attendant to the extended maritime jurisdiction, this study seeks to examine and evaluate, the assumptions and approaches - legal and economic which Tanzania has resorted to in pursuit of the interest of her people and in conformity with her obligations under the 1982 UN Law of the Sea Convention.

Further, because the primary interest for Tanzania's extension of her marine territorial jurisdiction was

economic, an examination is made to evaluate the extent to which the establishment of the 200 nautical mile EEZ has contributed to the economic development of Tanzania on account of the ability of the government to manage this vast area it secured. Here the study also seeks to identify short and long term opportunities available to the country and cautions against overly ambitious objectives.

Given the fact that, at least for Tanzania and the other countries in the region, the short term potential attendant to the new jurisdiction seems largely to rest on its living resources, the immediate focus of interest would thus rest on the nature and the effect the existing management regime has placed on the exploitation and development of these resource and, the extent to which this has been or could be of benefit to the country.²

The underlying assumption here is that Tanzania has the interest and indeed the obligation to manage access to these resources both by its local and foreign fleets. In the process, though, she has to ensure that these resources do not only contribute to the betterment of the welfare of her fishermen but also institute a conservatory regime to ensure the sustainability of these resources.

This understanding, for renewable resources and particularly fisheries, raises issues whose implications go far beyond the simple confines of national boundaries and consequently call for a review of the regional and international measures designed to assist in the management of these resources. Here the countries comprising the South West Indian Ocean (SWIO) become the primary focus of Tanzania's efforts towards a broader management regime.

The first chapter discusses the background against which Tanzania's fishery management has been taking place. It also introduces the approaches which the study will focus. The second chapter dwells on the theoretical framework for the management of fishery resources and points out some strategies thought to provide the discipline for effective

management in the context of the Tanzanian fishery. In the third chapter, challenges facing the management of the Tanzanian fishery are examined in the light of the background provided in the preceding chapters. While in the fourth chapter the potential and possibilities presented by a broad approach to the management and exploitation of the resources is examined and evaluated.

Ultimately, having evaluated both the constraints and prospects, this study in chapter five, offers some alternatives and recommendations considered not only objective but relatively cost effective as part of a strategy for both Tanzania and the region towards the beneficial and sustainable exploitation of her living marine resources.

CHAPTER I.

A Definition Of The problem.

1.1. The Premise: UNCLOS III.

The United Republic of Tanzania was an avid participant in the negotiations leading to the adoption of the Law of the Sea Convention in 1982, at Montego Bay, Jamaica. The Tanzanian contribution, while more conspicuous in the Second Committee where its Chief Delegate, Mr. Joseph Warioba, was elected Chairman, was no less committed to the sub committee dealing with fisheries where, as circumstances demanded, a fisheries expert, such as Mr. Libaba, was included as a member of the delegation. This involvement was further pronounced within the ranks of the Afro - Asian Legal Consultative Committee (ALCC), the Organisation of African Unity (OAU), and within the developing group of countries commonly known as the Group of 77, as they all in different ways tried to protect and promote their varied interests in the then evolving law of the sea.

Here, in an evaluation of fishery management in Tanzania, it is instructive to examine what constitutes its primary interest in relation to the ocean during the formulation of the UN Law of the Sea Convention. The immediate advantage this offers has to do with the degree to which, given its initial interest, the conclusion of the Convention may have influenced Tanzania's subsequent actions or inactions.

It is interesting that while there was sufficient precedence in relation to claims for exclusive fishery zones being masqueraded as attempts to conserve fisheries, many

developing countries did not choose to make such pretences.³ Most likely this position was dictated upon by their apparent limitations in technological and economic capabilities to support a claim of such grandeur.

For Tanzania however, the extension of her coastal jurisdiction was more appealing and significant in terms of the economic opportunities it offered or protected.⁴ For her, and many other similarly developing countries, this preoccupation was so strong that the management and conservatory "regime" provided by the 1958 Convention on Fishing and Conservation of the Living Resources of the High Seas was not acceptable even as a basis for further negotiations and modifications; and rightly so!

Consider Article 7 of that Convention which provided that any coastal state may, with a view to the maintenance of productivity of the living resources of the sea, adopt unilateral measures of conservation appropriate to any stock of fish or other marine resources in an area of the high sea adjacent to its territorial sea, provided that negotiations to that effect with the other states concerned have not led to an agreement within six months. Quite harmless!

However, Article 7 paragraph 2 provides that such measures shall be valid as to other states only if the following requirements were fulfilled:

- i) that there is a need for urgent application of conservation measures in the light of the existing knowledge of the fishery;
- ii) that the measures adopted are based on appropriate scientific findings;
- iii) that such measures do not discriminate in form or in fact foreign fishermen.

That the 1958 Convention favored the technological and scientifically developed nations was a matter of no dispute. That most developing countries were then either under colonial bondage or not represented militated against

its acceptability amongst many in the General Assembly of the UN when it was thought necessary to open a new alliance in the management of ocean resources.

Behind these efforts to find acceptable international standards for the management of world living and non - living resources, could be discerned a thinking amongst developing countries that they should not be denied mandate to exercise control of expanded maritime jurisdictions solely on account of their scientific shortcomings. In essence while many amongst major developed fishing nations wished to subject national jurisdiction to scientific capabilities, developing countries clamored for that right inspite of their being aware of the importance of scientific capabilities to adequately exploit and manage the same. This concern, while important, was nevertheless, of secondary importance.

Consequently, Part V, Exclusive Economic Zone, of the Law of the Sea Convention resulted as the best compromise giving coastal states a variety of legal privileges ranging from sovereign rights, jurisdictional rights and simple rights. To a larger extent however this compromise indicates the complex nature of the legal regime surrounding the EEZ but also the intensity of the competing claims involved. This new regime has also been categorised as *sui generis* representing a unique package where both coastal and other states have rights.⁵

What was significant in the compromise establishing the EEZ is that while as per Article 56 of the 1982 Convention coastal states, amongst whom many were also developed states, secured sovereign rights for exploring, exploiting, conserving and managing the natural resources of the EEZ, other states were able to secure and preserve traditional rights such as the freedom of navigation.

To countries like Tanzania the benefits attendant to the exploration and exploitation of the non-living resources of her EEZ remain important in the long run. However in the

short term fishing offers the most attractive and more feasible alternative. The critical balance though rests between its needs for food and revenue, and its obligation to ensure that this resource base is not only exploited fruitfully but sustainably.

Crucial to this undertaking therefore are the provisions of Article 61 & 62 of the 1982 Convention, the thrust of which are closely examined in Chapter II. These oblige coastal states to ensure that resources are properly managed so as to avoid over exploitation. To developing countries, and Tanzania in particular, these seem to be the objectives filled with the most difficulties and frustrations. This is due to two apparently contradictory reasons. On one hand, while Tanzania may wish to secure the potential benefits of its ocean resources for exploitation, either by its local or foreign fleets, or in a joint venture basis, she can invariably only do so rationally when she has the knowledge about the state of the stock. Otherwise Tanzania stands to loose economically, and also risks mismanagement of her resources which are placed in jeopardy.

On the other hand, though Tanzania remains acutely aware of the relevance of the technical aspects related to the management of resources, she is at the same time constrained by the very financial benefits she is seeking to obtain from the resources.

This is not to say that the vicious circle cannot be broken. Indeed while existing constraints are a reality there is yet another reality. Any resource improperly managed would not in the long run serve the interest of the people and the country. Basic to this realisation lies the truth that, within its own modest capabilities, there is potential enough to develop and administer an operational scheme for acquiring information about the state of the stock which would, with time, develop to serve both its resource and economic interests.

1.2. The Structural Setting of the Industry.

The United Republic of Tanzania represents an area of 945 100 sq km, a 1988 population estimate of 25 million, and a per capita income of about 147 US dollars.⁶ It also represents one of the 42 countries considered by the United Nation as least developed amongst the developing countries.

Located between latitudes 2 and 12 South, and longitude 30 and 40 East, Tanzania has a coastline of about 800 km, an EEZ adjacent to that of Kenya in the north-east, Mozambique in the south-east, and opposite that of the Comoros and the Seychelles on the east. Tanzania is part of the West Indian Ocean and is also a member of a group of countries comprising the South West Indian Ocean (SWIO) including Comoro, Kenya, Seychelles, Somali, Madagascar, Mauritius and Mozambique. Tanzania is further endowed with three inland lakes, namely: Victoria on the north-west; Tanganyika on the west; and, Nyasa on the south-west.

While Tanzania claims a territorial sea of 12 nautical miles she has a rather very limited continental shelf characterized by a sharply falling edge. This shelf varies in length to a minimum of six kilometers at two points including Mafia and Zanzibar Islands. The northern Island, Pemba, does not form part of the shelf and is in fact separated by a deep channel of about 56 kilometers wide and 800 to 1000 meters deep. Because of the sharp drop of the shelf, the 200 meter line is fairly close inshore and as a consequence fishing activities have also largely been confined within this inshore belt and around the Islands of Zanzibar, Pemba and Mafia.

Even within this belt, however, further limitation on fishing activity such as trawling is imposed by significant coral formation. These coral reefs have, nevertheless, proven useful breeding and feeding grounds for inshore fishes though the reefs have also suffered from silt deposits occasioned by

the five major rivers; Pangani, Wami, Ruvu, Rufiji and Ruvuma from whose mouths the richest shrimp grounds in the country are available.

The absence of an up-welling current along the western coast of Tanzania's Indian Ocean has also contributed in making this side of the ocean very limited in plankton growth and hence of general low productivity compared to other oceans. This is further exacerbated by the common fact that tropical seas compared to temperate ones are not as productive.

The Traditional Sector. It is from these fishing grounds estimated to be over 12 000 sq km.⁷, that the majority of the country's marine fishing effort is concentrated and largely conducted by an artisanal sector. In 1986 this artisanal sector accounted for about 90% of all the total marine catch for mainland Tanzania of about 46 985 tonnes and employing about 12 000 fishermen.⁸ This activity is scattered all along the coastline and around Zanzibar and Pemba where the sector employed about 15-16 000 with reported catches of about 25 000 tonnes.⁹ In this regard, principal target species include snapper, kingfish, sharks, rays, shrimps, lobsters, sea cucumber and seasonal runs of migratory fish such as tuna and baracuda king.

With this effort and limitations fishermen use a wide variety of fishing gear designs and methods. Communities in and around the coast are known to use a variety of methods and, not unusually, devote their attention to one method of preference for either general use or for a specie target.

Most unusually though is the fact that often, inspite of years and at times generations of engaging in fishing, these fishermen do not generally own the gear. In many cases both the gear and the boat may belong to an individual within or without the community who is not engaged in fishing. Such owners are normally only entitled to a certain percentage of the value of the catch or a specific amount of money on a weekly or monthly basis agreed to in advance. This has

expectedly given rise to private individuals who have invested in buying and supplying boats, nets motors etc, to fishermen in some of these communities and have themselves remained as mere beneficiaries of an appropriate part of the value generated by their investment.

While this has served to employ fishermen who otherwise may have remained unemployed it has nevertheless failed to give any substantive benefits to the fishermen involved in terms of improving the quality of their lives and working environment. Their pattern of expenditure has largely remained hand to mouth with very few able to break out of the "leasing" dependence. Not surprising therefore incomes amongst fishing communities in Tanzania have in many occasions been below those of other agricultural communities. This gives rise to questions about the success of government policies in this sector. What turns out as being interesting though is that this pattern of limited or negative gains to such communities is not peculiar to Tanzania but has also been observed in other developing countries of Southeast Asia.¹⁰

It is equally of interest to observe that while the number of artisanal fishermen and fishing boats has been on the increase (Table. 1) the welfare of this community has remained relatively unchanged. This has very significant implications to the broad developmental goals of the government.

The observed increases could be misleading. For one, it does not necessarily mean the sector is doing well, and for another it could well represent an increase on the number of families dependant on the subsistence sector both of which do not augur well to any development objectives. These numbers may only suggest an untold story. They also do reveal something about the vulnerability of the Tanzanian artisanal sector. Between 1978 and 1981 there appears to have been a dramatic decline of those engaged in fishing, from around 10 000 to 5 000. And yet in 1983 these numbers shot up to above 13 000. It is further surprising that inspite this recorded

Table 1
Annual Marine Fish Catches & Other Statistics.
1978 1984

Years	1978	1979	1980	1981	1982	1983	1984	1985	1986
Artisarnal Fishery:									
Catch Weights (tonnes)	46708	33104	29593	32716	23669	33371	39810	=	45501
No. of Fishermen	9799	8120	7596	4755	13499	na	13783	=	12619
No. of Boats	4498	2906	2238	3001	3433	3556	3690	=	3690
Industrial Fishery: (TAFICO & DARFISH)									
Catch Weights (tonnes)					608	1115	1081		1483
No. of Vessels					na	10	10		10

Statistics Section, Fisheries Division Tanzania.

Source: L. B. Nhwani. Summary of Fisheries & Resources Information.

decline catches per boat were not affected in 1981 but in 1982.

It has been suggested that this shift from the fishery was due to excessive reef damage occasioned by dynamite fishing which was also a result of gear shortage in the market. That, in a way, the fishermen engaged in killing the goose that laid the golden egg. However, the fact that the return to fishing was almost threefold questions the capacity of the reefs to regenerate and therefore to support the influx. It can also be questioning the exactness of the entire data base.

It remains of interest to determine the occupation to which these migratory or part time fishermen would take refuge to during recessions or difficulties. And to explore why that other sector remains a mere sector of refuge and not an alternative substitute to an otherwise unattractive sector. However, because most fishermen have no special skills, peasant farming could be the activity of engagement during these hard times. Petty trading or hawking is yet another possibility.

Dynamite fishing is reported as a regular occurrence along the coast and fishermen, while not willing to admit their involvement, would nevertheless pretend to sympathize with those "compelled" to resort to this method on account of gear shortage or its high cost. While it is an illegal activity,¹¹ and its intensity a matter of public concern, the seriousness of its destructive effects cannot be witnessed by the level of prosecutions against real or suspected culprits. As seen from the legal end where defaulters are brought to face the consequences of the law, the reported regular occurrences can only be far in between.

Another important element related to this artisanal sector is the type of boats generally used. Individual fishermen operating without "leased" boats would most often use a small outriggered canoe able to carry about three persons. Co-operatively owned vessels or those belonging to

richer fishermen, are relatively better and bigger and are able to carry up to eight people. Boats are of various types: mtumbwi which is a dugout canoe propelled by paddling; ngalawa, which is a dugout canoe with sails and fitted with outriggers for stability; mashua, which is a planked boat of about 5 - 10 meters in length fitted with sails; and, boti, which is a motorised boat.¹²

Most of these boats are constructed largely out of tree trunks which when added to tree felling as source of wood for fish smoking have contributed to the problem of logging and thus deforestation in coastal areas. While it should not mean that at the moment boat construction should be stopped it still demands that in the long run both the fishermen and the government need to face up to the problem. To the government there is a greater need in relation to its forest policy to find suitable alternatives both for purposes of upgrading the efficiency of the fishery sector and its general economic objectives.

The type of gear commonly used in the artisanal fishery of Tanzania vary from handlines, gill nets, basket traps, shark gill nets, beach seines, cast nets, long lines, to fixed (tidal) traps.¹³ It should be noted that some communities would prefer one gear over the rest for one or another specie. The greatest disadvantage of some of the gear rests in their indiscriminate nature of catching everything that tries to pass through - adult and juveniles alike.

For economic reasons most of the marine artisanal activities have been concentrated around major towns such as Dar-es-salaam, Tanga, Zanzibar, Pemba, Lindi and Mtwara where it has been possible to reach bigger consumer populations. Here it has also been possible to secure higher values for landed fish on account of higher incomes enjoyed by urban dwellers. It has also, due to constant high demand for fish when landed, reduced spoilages arising from storage deficiencies. At some point, especially during the early

80's, the most relatively successfully artisanal communities were those organized into fishing co-operatives. Today for some reason most have disintegrated.

Industrial Fishing: While the artisanal sector has with great effort tried to meet the needs for fish as the main source of animal protein to a growing segment of the coastal population, there has been in the last decade a growth of a local commercial fleet comprising about six purse seiners and ten trawlers. These have, to a great extent, attempted to meet the demand of the export market.

Purse seining activity has tended to concentrate in the north and around Zanzibar while trawlers have targeted shrimp as the specie of preference and thus concentrated along the Rufiji, Wami and Ruvu deltas. Most of the fleet is medium sized about 10 to 25 meters and 30 to 90 grt. with the exception of two trawlers owned by the Tanzania Fisheries Corporation (TAFICO) of 32 meters and 150 grt.

Foreign operators in the Tanzania Fisheries sector over the years were largely restricted by a deliberate government policy which favored joint ventures with the state owned corporation, TAFICO. However, the local private sector involvement in the industry has been expanding from the late 70's having realised the potential value of prawns could in foreign markets. The Licensing Unit of the Fisheries Division indicate 12 foreign owned trawlers were authorised to operate with three mother ships as of November 1990.

Following the promulgation of an investment promotion policy in 1990 there has been an influx of interested foreign applicants seeking authorisation to either operate independently or on joint venture basis. Most of these have interest in the crustaceans, particularly shrimp and lobster, and off-shore pelagics such as tuna.

For Tanzanian fisheries, shrimp remains the leading specie for the foreign market. Export figures for the year 1991 may reveal values which had never been recorded before.

Because crustaceans are not a specie of choice and preference for most of the local population, the export growth of these crustaceans does present a conflict with the local market when shrimp trawlers discard by-catches which are of interest to the artisanal fleet. At the same time this export is earning the country invaluable foreign exchange.

It would be wrong though, to assume that the commercial fleet has expanded, without certain conflicts arising. The existence and operations between the traditional sector and the thriving industrial fleet has not been without skirmishes. There are two reasons for this. One has been that artisanal fishermen along Bagamoyo in the Wami and Ruvu deltas are convinced that the operation of "big vessels" while trawling for shrimp "chases" species of their preference. The second reason is that there are some artisanal fishermen interested in the crustaceans and this competition for crustaceans seems a loosing battle.

It however seems that the government has yet to see the worst of this delicate balance of interests. As the growth and diverse uses of these fishing grounds continues to expand, so does the potential for conflict. This is further heightened by the fact that within their own localities fishermen tend to think the local government agency responsible for resolving such conflicts is either helpless or in alliance with the "big vessel" operators.

Further fishermen have expressed concern about growing encroachment into areas of their traditional activity by "big vessels" belonging to "wakubwa" that is, big shots. The danger these attitude may pose when left unchecked is that any conflict resolution mechanism which may be instituted could very quickly loose its credibility to the detriment of the government administration and its fishing interests.

Yet, the potential rapid expansion of the industrial sector cannot be ignored. While Table 1 suggests a doubling of catches within a period of four years between 1982 and

1986 this can only be accepted as being very conservative given that it only represents reported catches of two entities, TAFICO and DARFISH, to the exclusion of a number of other private operators who had secured licences during this early entry period.

Marketing: Because the local fishing industry cannot presently be classified as strong (though the potential is certainly so) the marketing and distribution side of the industry has over the years remained relatively weak. As a consequence, while the Tanzanian population is relatively more active in fishing than their immediate neighbors of Kenya, the Tanzanians have comparatively earned less than the Kenyans.¹⁴

In this regard, Tanzanian geography has acted both as an advantage and a disadvantage. The extended coastline, while giving a relatively bigger fishing area, has also dispersed potential markets, especially due to existing poor communications infrastructure. Still the country's population offers an advantage in terms of the potential market for the fishing industry.

Though demand for fish for human consumption has notably been on the increase especially around major cities due to among other things the rise of beef prices, the structure of the operations of the artisanal sector which has largely been responsible for satisfying this aspect has remained unchanged.

Fish has over years been landed and sold on the spot either directly to consumers or to middlemen. Where fishermen have to market the product themselves, often after a long night out at sea, on small canoes or boats, there have been claims by the fishermen that they are merely landing to get a fair return of their labour and product so as to be able to retreat for rest as soon as possible.

For those that are able to have family members assume trading after landing they are also faced with difficulties relating to storage. Most of the landing sites do not have

cold storage facilities and thus fishermen or traders have to rely on ice bought from vendors in town which, given the high tropical temperatures can only last for so long. Consequently, and most often on a days end, when demand is not sufficient to exhaust the available supply, fish prices are comparatively lower than at any time of the day. This usually results in lower incomes occasioned by throw-away prices and at times even spoilages.

It is true to say that public investment in terms of upgrading the basic infrastructure for fishery development has been glaringly lacking, resulting in a very poorly equipped marketing structure to properly support this sector. This has had manifold disadvantages especially to the artisanal fishery and the other areas of business activity which could gain from the prosperity that this sector of the economy could enjoy and generate.

These limitations and possibilities are given detailed attention in Chapter III where it is argued that unless the government deliberately undertakes certain measures, the opportunities offered by the fishery sector can only remain an illusive idea for the people and the government's own development plans.

1.3. The Issues.

In Tanzania, the importance of the fresh water fishery cannot be neglected while examining the fishery sector. Over 80% of the total fish landings for 1986 estimated to be about 386 000 metric tones came from the three major lakes; namely, Victoria, Tanganyika and Nyasa. (Table 2).

While this study does not focus on the fresh water catches both sectors have largely suffered similar constraints and many of the potential prospects to be found in the marine sector should find validity in the former segment as well.

Nevertheless both segments indicate one unavoidable trend. Tanzania's growing population, estimated about 25 million in 1988, and a growth rate of about 3.2%, should by the year 2000 be around 38 million. Without getting into the impact of the governments population policy, this expansion would inevitably dictate an increased demand for fresh and marine water resource based protein. This would consequently bring pressure to bear upon these resources given that, in African terms, Tanzania already has a high fish consumption per capita standing at 14.1 kg per year in 1988,¹⁵ and the countries ranking as the 39th country in global catch statistics.¹⁶ Most fortunately, Tanzania fishery can potentially make a great contribution not only to the country's food supply but also to the general economic well being of her people. If properly managed fisheries could maintain and even expand its contribution to the economy, as shall be discussed in Chapter III, by acting as a catalyst to other downstream economic activities that are currently not existing.

In budgetary allocation terms the sector has not received prominence and may seem to occupy a rather inferior position. It nevertheless, though, plays a significant role in the economy of the country. And for the marine sector this role, and its potential are even more conspicuous. Table 2

TABLE 2.

FISHERIES INDICATORS
198 1986

Year		No Of Fishermen	No Of Fishing Vessels	Catch (m. tons)	Value ('0
1980	Fresh Water	38.821	14.162	204.048	709.957
	Marine Water	7.596	2.238	29.365	235.277
	Total	46.417	16400	233.413	938.634
1981	Fresh Water	40.175	17800	221400	858900
	Marine Water	4.755	3.614	35.586	279.981
	Total	44930	21.414	256.986	1138861
1982	Fresh Water	43.472	21.375	157.428	1457312
	Marine Water	13.499	3.434	52.901	510.018
	Total	56.971	24.809	21.329	1967330
1983	Fresh Water	45.904	205.706	1744033	1744033
	Marine Water	9.495	34.485	460.888	460.888
	Total	55.399	240.191	2204922	2204922
1984	Fresh Water	43.822	18100	237.203	2685678
	Marine Water	13.783	3.556	40.89	6.955
	Total	57.605	21.656	273.093	2692633
1984	Fresh Water	48.39	17.924	257.904	4342151
	Marine Water	11.392	3.045	42.847	1676269
	Total	59782	20.969	300.751	6018420
1986	Fresh Water	58.505	18.712	339.106	6026908
	Marine Water	12.619	3690	46.984	1672741
	Total	71.124	22.402	386090	7749659

Source: Ministry of Lands Natural Resources and Tourism:
Fisheries Division.

indicates that, between 1981 and 1986, while marine sector catches averaged around 40 000 metric tons, their value had more than trippled. This has though to be seen in the context of the export of high priced species such as shrimp valued in foreign currency while those marketed locally were affected by the devaluation of the shilling.

In Tanzania, therefore, while the artisanal sector accounts for most of the production, its improvement presents a great challenge. The government's attempts to manage the resources have had to contend with competing priorities - at times due to natural calamities of drought and famine. This has ironically limited the potential benefit of this sector during times when increased production and proper management could have assisted in alleviating some of the hardships occasioned by such calamities.

A broad review of the structure of the fishery reveals its complex nature. It considerably varies in technology and methods of application, from traditional dug out canoes to small trawlers and purse seiners. In some areas motorised canoes are in competition with non-motorised ones -at times successfully but more often in distrust. Yet in some areas, particularly in remote areas, success at fishing is under a great disadvantage due to difficulties in reaching markets and availability of gear.

The operations of the industrial and foreign fleets in Tanzania have not had a very long history, giving rise to the need for a closer examination of their activities, their problems and the prospects they offer to the country. Apart from the activities of TAFICO, either in sole operation, or in a joint venture effort with a Japanese firm, industrial fishing activity have largely concentrated on the inshore fishery grounds for shrimp. The advent of a new government policy promoting foreign investors has also seen the increase of applicants for joint ventures in the fishery sector. While this raises possibilities for the local entrepreneurs, hitherto precluded from generating foreign exchange, it also

gives rise to serious resource and technical management concerns of relevance both to the artisanal and commercial fleets.

The significance of this study therefore rests on the concept that the desirability of proper resource management transcends economic settings and, consequently, for countries such as Tanzania (with relatively limited resources), the demand and the urgency for an appropriate and effective management regime for the exploitation of her living marine resources is made all the more pressing.

There are a number of issues relating to the developmental objectives of the government policies on the fishery sector and the legal and administrative regime these have generated that need to be examined to ensure comprehensive assessment of Tanzanian fishery management schemes.

The first issue therefore is that when a fragile traditional fishery sector operates alongside a relatively stronger and aggressive commercial sector, the former, unless deliberately protected by specific management tools, may risk destruction at great cost both to those who depend on the sector for their livelihood as well as to the government.

The second issue, arising from the first, is that resource implies benefits, and when no real benefits are perceived by those whose activities are the target of government regulation, the best of such management objectives may most often remain unattainable.

The third issue concerns the appropriateness of the application of traditional fishery management strategies. While most of these have been effective and time tested in developed economies, their application to less developed economies with different structural settings, while not totally irrelevant, need be approached with caution.

The fourth issue concerns the benefits assumed to derive from an extended fishery jurisdiction. When these benefits are largely seen in terms of monetary value, the effects in

the long run, both to the people, the resources and the government can be more detrimental than developmental.

The last issue concerns the possibility that, as Tanzania and other coastal states increase the use of their marine resources, the potential for conflict, locally and regionally becomes greater. This leads to an examination of the benefits which might be derived by translating national management regimes into bilateral and regional programmes.

The Methodology: In examining the stated objectives and issues about this study, attention is given to a discussion of various aspects of fishery management as practiced by the different participants including the government. Developmental issues of relevance to Tanzania are highlighted, problems inherent in the resource are reviewed and, broad legal issues pertaining to access by foreign fleets, joint ventures, reciprocal enforcements, etc, are put into a Tanzanian perspective.

Because effective fishery management constitutes a challenging undertaking even in the developed economies, some insights experienced and obtained in field studies of fishery activities especially with the Ministry of Agriculture, Food and Fisheries in England, the fishing industry including research institutes in Boulogne - France, and the Food and Agriculture Organization (FAO) in Rome, will be useful.

In this context the primary yardstick would constitute the government's own "fishery policy", key and relevant domestic legislations such as the Fisheries Act of 1973, and, the Territorial Sea and Exclusive Economic Zone Act, 1989.

As a backdrop to this dissertation, the influence and effect of the 1982 UN Law of the Sea Convention is examined or explained so that the entire approach, in terms of the assumptions, analysis and conclusions, are better understood.

References and Notes.

1. Nehere P. A. Maritime Resource Economics Vol. 5 # 4 1988, p 285, observes that the law of the the sea had been substantially motivated by evidence of widespread depletion of fish stocks due to heavy fishing pressure and habitat degradation.

2. Miles. E. L, 'Introduction' p. XVIII, In Management of World Fisheries: Implication of Extended Coastal State Jurisdiction. University of Washington Press, 1989, suggests that as a result of the extended maritime jurisdiction benefits accorded coastal states may be classified as 1) income (fees), 2) landing of fish in local ports, 3) training of fishermen on board, 4) financial and economic cooperation, 5) cooperation in training and research, 6) trade facilities, and, 7) joint ventures.

3. The United States in two landmark declarations:
 - i) The Truman Proclamation of 1945 on the Continental Shelf declared that "having concern for the urgency of conserving and prudently utilizing its natural resources, the Government of the United States regards the natural resources of the subsoil and sea bed of the continental shelf beneath the high seas but contiguous to the coast of the United States as appertaining to the United states, subject to its jurisdiction and control". (Proclamation No. 2667); and,
 - ii) "Policy of the United States with Respect to Coastal Fisheries in Certain Areas of the High Seas" providing that "In view of the pressing for conseration and protection of fishery resources, the government of

the United States regards it as proper to establish conservation zones on those areas of the high seas contiguous to the coasts of the United States wherein fishing activities have been or in the future may be developed and maintained in a substantial scale. Where such activities have been or shall be developed and maintained shall be subject to the regulation of the United States." As quoted by S. N. Nandan; "The Exclusive Economic Zone: A historical perspective" p 175, in Essays In Memory Of Jean Carroz, The Law Of The Sea. FAO, 1987.

4. Ajomo, M. A. "Third World Expectations" In New Directions In The Law of The Sea. Churchill, Simmonds and Welsh, eds. London, The British Intitute of International and Comparative Law, 1973. Where it is suggested that Third World countries (Africa, Asia and Latin America) felt that much of customary international law was a by - product of western culture and European institutions and therefore of benefit only to countries which established the rules.
5. Nandan S. N. The Exclusive Economic Zone: A Historical Perspective. In The Law and the Sea. Essays in Memory of Jean Carroz. FAO 1987 p 188.
6. The Least Developed Countries. A Statistical Profile. UNCTAD, 1990. p 43.
7. Nhwani, L. B. Summary of Fisheries and Resources Information for Mainland Tanzania. Tanzania Fisheries Research Intitute - Kigoma, 1990.
8. Ibid.
9. Jiddawi N. S. & Pandu V. M. Summary of Fisheries and

Resources Information for Zanzibar, Ministry of Marine, Tourism and Forestry - Zanzibar, 1990.

10. Fishery, Sector Policy Paper. The World Bank, Washington 1982, p 38. In Malaysia where per capital income is the highest in the region, 73% of the fishermen households live below the official poverty line.
11. Section 25 of the Fisheries (General) Regulations, 1973. Made under the Fisheries Act, 1970.
12. Nhwani L. B. op cit.
13. Ibid, Number of gears and types by statistical region.
14. Fisheries Development In Africa: Their Status and Potential For Development. p. 17 Value of Fisheries Trade. Table 2. Fifteenth FAD Regional Conference for Africa, Mauritius, 26 April - 4 May 1988. Doc. ARL/88/4 Feb. 1988.
15. International Centre for Ocean Development (ICOD), World Fisheries. 1991. (Map)
16. Ibid.

CHAPTER II

Concepts and Implications.

"Sustainable Development has been defined as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' and implies 'the maintenance, rational use and enhancement of the natural resource base that underpins ecological resilience and economic growth'" ¹.

2.1: Managerial Concepts and Policy Implications.

The fact that the process concluded by the adoption of the Law of the Sea Convention resulted in a drastic new approach to the management of ocean resources is fairly well accepted. The immediate and indeed the most significant aspect associated with this change, for developing coastal states such as Tanzania, was the demise of the hitherto tradition of open access to ocean fisheries.

Open access or the "unrestricted right to fish" which has been described as "one of the oldest traditions of fishing"² had also proven as being the most destructive approach towards the depletion of the living resources of the ocean. Indeed it was this old tradition which Tanzania was up against in 1973 when she extended her territorial sea to an area 50 miles from her shores. It is also the realization of this situation that countries, at times alone and at times

jointly, undertook to formulate measures as a response intended to arrest circumstances otherwise potentially destructive to the socio-economic needs of their populations and industries.

The conclusion of UNCLOS III, as pointed in the previous Chapter, formalized and internationalized two major aspects in relation to attempts made to exploit and conserve ocean resources. First, the creation of the EEZ gave coastal states exclusive jurisdiction over extended jurisdiction, but, secondly, placed an obligation on these countries to undertake management measures designed to conserve these resources.

It is however of relevance to note here that, to a greater extent, the needs and demands for conservatory policies were more in response to pressures brought upon the resources of some major coastal fishing countries such as the United States but more generally in relation to the increase in fishing effort both in the north Atlantic and Pacific Oceans.³

While there was a complementarity of interest between major fishing nations to whom conservation was as important as jurisdiction, many developing nations were preoccupied with jurisdictional concerns believing that conservation would emerge in the context of the authority a state obtains over a maritime area, with the result that managerial ability has remained one of the most challenging obligations assumed by developing countries in relation to the EEZ.⁴

Fundamental to the obligation of a coastal state such as Tanzania to properly manage the living resources within her EEZ are the provisions of Article 61 and 62 of UNCLOS 1982. The first stage as per article 61(1) places a requirement that a coastal state should "determine the allowable catch of the living resources in its exclusive economic zone". This, as per sub paragraph 3 is to be undertaken on a 'maximum sustainable yield' basis. In a large measure, this is a complicated exercise for Tanzania. Complicated because of

both the technical and financial limitations which the country would have to contend with.

Further, while paragraph 3 gives a maximum sustainable yield criteria it also, however, provides for this with a caveat, namely, "as qualified by relevant environmental and economic factors". On the overall whatever efforts assumed by the administration sight should not be lost of the fact that "sustainable development is generally the goal, at least in theory, of most fisheries management today" ⁵

While the concepts of Maximum Sustainable Yield (MSY), Optimum Sustainable Yield (OSY), Maximum Economic Yield (MEY) and Total Allowable Catch (TAC) are amongst the cornerstones of fisheries management as provided by the 1982 Convention, they are grounded on critical assumptions of certain basic knowledge and research, and , in the case of Tanzania , further complicated by the interplay between the more predominant artisanal fisheries on one hand, and the emerging industrial sector on the other.

It is not denied nor can it be that the essence underlying the provisions of both article 61 and 62 constitutes the need to see that fishery resources are exploited in a manner which would ensure the long term protection of the needs and interests of the coastal states. It is also undeniable that any management regime can only be properly implemented and successful when supported by an appropriate knowledge of the fishery stock, its dynamics and the regular collection of information on landings and prevailing economic conditions (Keen.EA 1988). Yet in terms of stock assessment the only comprehensive but limited surveys that are known to have recently been conducted in Tanzanian waters are those undertaken in 1982/83 by the R/V Dr. Fridtjof Nansen and m/v Mafunzo ⁶.

These surveys though were very limited in that the main area of focus was the exploration of the potential yields for small pelagic and the inshore fishing grounds were thus excluded from the survey. Consequently in terms of the

management interest of the Administration they have largely been compelled to work, even to date, with estimate figures extrapolated from this not so recent survey. This presents two basic disadvantages. One, the survey is itself outdated, and, two, its reliability could be highly unreliable particularly with regard to the inshore grounds whose biological dynamics are essentially different than the offshore grounds. It has nevertheless been of considerable use in relation to the latter grounds. Proving that information is a basic tool for fishery management and that lack of the same exposes the administration and ultimately the country to a lot of disadvantages.

But in the settings of Tanzanian artisanal fisheries sector, how best can this information be obtained and applied for management purposes? how can the Administration determine the MSY? The basic problem lies in the fact that all too often, fishery statistics, given the extended coastline and the existing communication difficulties, are either non-existent, or so inaccurate that no meaningful use can be made of them.

While the following chapter examines some of the approaches Tanzania should adopt it should be said here that, without the benefit of the necessary stock assessment data, the capability of Tanzania to determine her MSY would remain highly doubtful. Any approaches though should take into account that even with the best skills and resources, such assessment would not only take considerable effort running through a number of years but will also require a firm commitment of the policy makers and their appreciation of the usefulness of this exercise and its implications to the developmental objectives the country has placed upon itself.

Kesteven (1983) underlines this point by emphasizing that "developing countries with valuable fishery resources need fishery science in self defense and positively to their own advantage". He further proposes that this kind of fishery science must be locally generated giving the country

or countries a better claim to their data which may thus be placed to use with all the confidence involved in its generation.

This understanding is basic towards appreciating the essence of extending jurisdiction over fishery resources to coastal states which were then expected to manage them in a manner which is to ensure efficiency of exploitation. If under "open access" these resources could be not be managed effectively it would follow that under national jurisdiction the ills associated with over exploitation and disregard of conservatory needs would be minimized and thus enable countries to keep retain the advantages of better managed resources. The reality though does not present such a simple alternative.

Professor Pontecorvo makes one important observation of relevance to the Tanzanian approach in the pursuit of its economic interest in its fishery. He argues that the benefits for coastal from extended fisheries jurisdiction are potentially considerable; that, they can however as easily disappear if the acquired resources are not accompanied with effective management •. Thus while Tanzania may have lended its support towards claims for an extended fishery jurisdiction it remains very important for her to take the next step, cautiously and purposely, towards building up a system which would accord her the biological and economic knowledge of her resources.

This ability does not only have managerial implications but may also have far reaching effects. While article 62 obligates a coastal state to ensure the optimum utilization of the resources by determining its capacity to harvest the same, it also provides that where its capability does not allow harvesting the TAC the surplus should be made available to foreign states. So access by foreign fleets may either be denied because the coastal state has the ability to harvest its TAC or granted when that capability is not commensurate to the total allowable catch.

However what seems to be a shortcoming in relation to the provision of article 62 is the fact that while it provides for a situation where a country is unable to exploit its allowable catch, it does not similarly provide for a situation where a country is unable to determine its TAC. While this would seem the essence upon which the other provisions of the article would effectively spring upon, it is only largely left to general provisions about joint cooperation in scientific research.

In the examination of any fishery management concepts however it would seem that the inevitable approach, like any other managerial approaches, must dwell and do with the identified objectives for which the particular concept to be applied is but a mere tool. This should be crucial because an analysis of any preferred managerial concept does not seem to be without its detractors. Both economists and biologists are understood to be in contention about one approach against another. Fishery Economists Christy and Scott, and Biologists Larkin and Sisswine are said to be critical of the relevance of MSY as a management objective ⁹.

And yet fishery management is inevitable. Managerial concepts are only tools of application for preferred results or objectives. It must be realized that for Tanzania, and particularly for its artisanal fishery, the need for fishery management arises from the fact that, the fishing effort would otherwise continue to increase until a point where, at least, there is no economic yield remaining in the fishery.¹⁰ In response to this, fishermen will decrease in numbers as return and stock diminishes, which may just be what happened to the artisanal sector in 1981. (Table 1).

Troadec (1983) explains this relationship or consequence vividly. When fishing effort increases in any fishery, artisanal or industrial, the immediate result is a corresponding increase on total catches. However this increase steadily slows down, that is, increasing though at a decreasing rate. At some point along the curve, the maximum

level is reached (MSY) subsequent to which any further effort results in fairly decreasing catches.

Keen, in a chapter titled the "Strange Productivity Curve" where he examines what has been called the "tragedy of the commons" observes that while 95% of world fisheries have been brought under national jurisdictions following the 1982 Convention "the incentive to overfish and to fish wastefully, and the lack of incentives to invest to improve overall productivity of the resource, remain unchanged"¹¹.

In explaining the strangeness and tragedy associated with fisheries, Keen points out that unusually the law of supply and demand does not work well with fishery resources hence the peculiar need for their management. While price has a significant influence it does not always hold true, for fishery resources, that the higher the price the larger the quantity supplied. This axiom is valid though only up to a point.

The oddity in the fishery situation is while demand, and thus prices, increases the number of fishermen and the need to increase effort so as to increase supply and be able to reap profits associated with the increase in demand. However because the increase in effort alone does not have a bearing or influence on the biological reproduction of the stock, soon any stock becomes a victim of overexploitation. At this point, when the resource is diminishing, the tragedy settles in. The increase on price does not then result in increased supply but in lesser and lesser supplies.¹²

What therefore becomes critical here for any fishery resource is that at the point where there begins to be a negative relationship between demand and supply, losers in this undertaking become identifiable. Because diminishing supply is occasioned by a corresponding depletion of the resource, the immediate victim thus becomes the stock. And when the stock suffers there is no running away from the fact that all segments of the socio-economic fabric related or

dependant to a healthy stock equally suffer the consequences of this damage.

It becomes increasingly important therefore that even for a country like Tanzania where in some areas it is believed that the problem lies, not in decreasing effort but in increasing the fishing effort. Quality or strategic management would inevitably demand, even in such circumstances, an awareness of the extent to which effort may be increased without exceeding the point where such effort is assumed at the expense of the stock.

In view of the fact that the stock is the target in any fishery, it therefore invariably follows that when the stock suffers so do the management objectives related to the sector. Here, therefore is another reason calling for caution even in setting objectives. Too often the government has placed emphasis on promoting the growth of those involved in fishing seemingly as a way of curtailing unemployment which is relatively high in coastal areas, and more so because artisanal fishing is a sector that can still employ many without the need for formal education or training.

However, without having the capacity to determine the influence of various factors, natural or those caused by an increase of the population of fishermen, assuming it increases effort, the policy may ultimately have a negative consequence on the resource. This may be unknown to the administration which could very possibly have taken the decision in good faith. Indeed some economists have rightly cautioned in some fishery situations, especially where effort is at MSY, the objective of maximizing employment and the improvement of average individual income may be in direct conflict, Troadec 1983.

The caution here is that a lot of measures undertaken in good faith may actually be militating against the very objective they are taken up for. That, without some semblance of basic information used to rationalize measures taken by any administration, any purported management is at best a

game of chance. At the root of all formulas and dynamics associated with fishery management is the simple truth that management is only effective when supported by a conceptual understanding of the biological and economic setting upon which the fishery operates. Unavoidably, this is as true to artisanal as is to the industrial fishing.

2.2 Resource Implications.

"Until now the catches are much lower than the projected catches but we hope to find out soon whether these low catches are due to technical problems or will possibly be the maximum catches we can get from our sardine stock" ¹⁹ ZAFICO Acting General Manager.

The preceding section has underlined the fact that no appropriate management approaches to the exploitation of any fishery resource can possibly be successful without having information necessary for such management. For Tanzania it has revealed the importance of taking the next step beyond the mere assumption of an extended maritime jurisdiction which alone cannot solve neither the exploitational nor developmental problems associated with fishing. It cannot guarantee neither the effective utilization of these resources nor the attainment of her objective both for the short and long term.

And yet all too often, fishery statistics are generally not readily available and often unreliable that they are not put to any use. This has often resulted in a dilemma such as facing the management of ZAFICO both in terms of the interpretation of a situation which is undoubtedly very critical to a relative huge investment made by the Government.

The problem facing the management of ZAFICO is a typical reflection of the various constraints facing fishery administrators in the country. The problem has two facets both relating to resources. Because Zanzibar town is a large consumer market for sardines which constitutes an important

part of the populations dietary intake, the Government, through ZAFICO - a public corporation, undertook to increase its catch capacity by supporting its purchase of an additional fleet hoping this would work to satisfy the demand for fish in Zanzibar. Regrettably this was not easily attainable due to a number of reasons but mostly due to some technical difficulties with the boats, and, the fact that catches were just not enough. This highlights the first problem; uncertainties or outright lack of information pertaining to the target stock.

The second problem has to do with the governments willingness to allocate not only financial resources but human resources as well as to assist in setting up a basic system which would enable it to have at least an indicative basis upon which it can rest its decisions and actions. It would seem rather naive to set aside funds for six meter boats and one twelve meter without the support of reliable information as regards their ability to operate economically both in terms of their cost and the resource available. It was therefore no coincidence that following the reported decrease in fish catches in Zanzibar, the Government instituted in 1989 a development plan to alleviate the decline in total annual fish landings. The suggested plan included an initial injection of foreign currency to enable the importation of sufficient gear. The presumption was that the decline was occasioned by insufficiency of gear which is not supported by the fact that even those fishermen with relative adequate gear continued to report declining catches.

But governments are known to act with speed when what is at stake is of political expediency. It would be convenient for the government to supply a boat which can land sardines that are of immediate attention to the local population rather than direct these funds or part of the same for instituting a system which would enable it to reduce these uncertainties.

Indeed while there are too many competing demands for

the resources available to a government for development purposes, choices need be made and priorities spelled out. For Tanzania, the government has repeatedly made claims about the importance of its fishery resources to its economic development goals but the existing infrastructure does not seem to support these claims.

Therefore while Tanzania has had a long claim to fishery management, at least in its broadest sense, there has been until recently, following a growing appreciation of the "tragedy of the commons", few cases of a dialogue between scientists, administrators and fishermen aimed at reaching a consensus at management measures.

Consequently, the general situation has been one of a well meaning administration imposing "management" on a fishery but frequently without any real knowledge of the implication to the fishermen, the industry or to the resources.

This apparent dilemma facing the government and particularly fisheries administrators serves to question the extent to which administrators have had an influence in the formulation of government policies. It is easier to have the best intentions without having an action plan intended to break out of the immediate confines posed by this problem. Indeed the real issue is that, most often it is felt that it would be costly and time consuming to invest time and money in preparatory programs. The drive to attend to a pressing problem seems to override the need to establish the necessary infrastructure.

Of essence here is the fact that while data or the availability of information about the resources to be exploited should not be seen, nor is it being suggested, as being the only single important element in the management of the Tanzanian fishery, it nevertheless cannot be neglected given that developments that have taken place in the last thirty years indicate that the fishery sector has developed about as far as it can under existing pattern of

exploitation.

For the required optimum development of this sector and the attainment of desired national goals - higher catches for food, foreign exchange and more jobs, a more serious re-examination of the existing pattern of exploitation cannot be avoided. This also calls into question the role of leadership in sensitizing the government against the natural tendency to react to what is seen as politically expedient. It takes leadership to sensitize the fact that too often the best intentions remain unfulfilled when decisions are subjected to chance.

It also takes leadership to present politicians with equally viable alternatives which may possibly be attractive to them and to the national developmental goals. For instance, there is no credible excuse as to why for thirty years after independence, a period which the artisanal sector has seen great expansion in numbers of participants and activity, fish marketing remains largely a beach operation. One would have expected here to find a window of opportunity which, under proper circumstances, should be of attraction to politicians while at the same time giving innovative options for expanding the fishery markets beyond the beach and in the process assist in the growth and productivity of the artisanal sector.

Of significance here is the fact that the constraints within which the fishery sector has been operating must be seen as part of the inevitable challenges in any fishery. What is different though is the manner administrations and governments respond to these challenges. Winners can only be amongst those with administrators or leaders with the necessary skills and conviction to bring to bear upon those who prioritize national objectives. This can be critical given that success can hinge on this aspect.

In a study about the north-west African countries it was observed that the adoption of inadequate balances of basic inputs (manpower, capital, energy) could only add up to

production and processing costs already taxed by the inefficiencies of underdevelopment.¹⁴ To an artisanal sector this imbalance could dramatically contribute towards its failure to expand beyond its limited confines.

In a broad sense, the challenges facing the Zanzibar administration are only representative of the general situation in the country. In the face of so many challenges fishery administrators often seem overwhelmed and torn between the realization of the need for a workable framework of fishery management on one hand, and the pressures brought upon them both by the economic demands of the coastal populations and the political interests associated with these populations on the other.

In "Fishery Statistics: What we need to know" Pontecorvo¹⁵ makes a strong argument that statistics are essentially of relevance and benefit to all the users who he considers to be fishery biologists, economists, regulators, fishermen, commercial interests and the stock itself. It is for the interest of all the users that statistical information plays a key role in eliminating uncertainties associated with the availability of the ocean resource targeted for exploitation. The important link for Tanzanian administrators seems therefore to lie at the point where even politicians and the fishermen themselves are made to respond to the relevance of information based activities and decisions. They have to see the use both as resource exploiters and as policy makers.

It has therefore, on this regard been easier to discern two principal shortfalls that largely impact upon the fishery resources of Tanzania. One, which represents a national problem as localized by the Zanzibar's sighted experience is that while lack of funds is one of the constraints, of more importance is the fact that information is needed on the extent and amount of fish that is available and of interest to the local population or fleet. Two, is the fact that all along the coast access is granted to almost every one and,

there is no knowing the extent to which the fishery resources can stand the pressure or to what extent this pattern of fishing activities could be a contributory cause to the claimed declines in seasonal fish landings. As observed earlier, the unreliability of the data that is available does not lend itself to significant use.

And yet while managing the living resources of any ocean has not been easy and indeed even difficult in the best of conditions, what may be termed as successful does not often lie in attaining higher catches but only in achieving, on a balance, a greater degree of realization of the objectives the administration or regulatory regime set for itself. This, to me, seems a more credible yardstick in assessing the effectiveness of both policy and implementation. It is further more realistic in that it would not be appropriate to analyze performance of the Tanzanian fishery sector in the light of management goals set for, say the EEC. For one, even the EEC is not doing any better,¹⁶ and for another, more important reason is that resources may differ immensely from one area to another in as much as there may be wide variations relating to the socio-economic needs of any given fishery sector.

There is however a very serious and urgent need to break the cyclic circle of underdevelopment in which the Tanzanian fishery finds itself. Fishery resources cannot be properly managed because of lack of infrastructure (efficient gear, data etc). The infrastructure cannot be established for lack of financial resources and, financial resources are unavailable because the resource output is not sufficient to support such an investment!! The argument goes on and on.

There are two ways of ending this cyclic reasoning. One is apocalyptic and the other is based on appeal to reason and understanding. The former relies on the inevitability of having to face up to the situation following the inevitable collapse of the fishery resources due to increased and unregulated fishing. The latter appeals to the not so

uncommon realization of both the artisanal and industrial fishermen that when exposed to overfishing resources are depleted and, consequently that a mechanism for monitoring this process and relationship between their activities and the state of the stock is of interest to all concerned.

As Tanzania prepares to open itself to extensive foreign investment following the new Investment Promotion and Protection Act, 1990, and after decades of officially shying away from actively promoting such course of action, the dilemma facing its fishery resource management correspondingly increases. If within the existing managerial constraints it has been difficult to have a reliable indication of the state of the fishery on the inshore areas for species of interest to the artisanal sector, what benefits will a foreign fleet operating on the inshore grounds and targeting shrimps bring to an already overwhelmed managerial regime.

While the potential benefits for secondary industries and the possibility to earn much needed foreign currency must not be lost sight of, it is also critical that the resource should not be left to suffer at the hands of what may only clearly be short term interests. And yet, the long term interest can only be adequately taken into account and protected by ensuring that this expansion does not destroy the necessary balance allowing for sustainability. And this can only be realized when there is sufficient knowledge of the relevant factors; namely, the state of the resource, the level at which it can sustain exploitation and the general factors its biological reproduction.

This bio-economic approach, as observed earlier, does not have to be comprehensive. It has to be useful though. It has to be able to address the policy goals for the sector while protecting the resource. This can often be achieved through the systematic collection of data pertaining to species of interest. What is needed is leadership and determination to explore and adopt new approaches to fishery

management. To re-order the priorities so as to conserve and protect the resources and to ensure regulated exploitation which would neither compromise the short and, particularly the long term interests, of the fishermen, the industry and the resource.

2.3. Strategies for Adoption.

In the management of fishery resources there has been varying concerns depending on the importance of the resources themselves as either a source of food or the backbone of economic activities. However, implied in any of the managerial approaches which countries or administration have sought to impose on efforts aimed at the exploitation of these resources is the realization that the resources are not limitless.

In this context, in most of the managerial concepts underlying fishery exploitation is an awareness that, because of their natural and biological characteristics, fish output is limited. That, sustainability can only be maintained if exploitation is kept within certain reasonable limits. This reality is also associated with another. That, fishermen, left to themselves will always increase fishing effort for expected additional catches as long as the fishery can profitably retain this increased activity. But unfortunately there is a tragedy relating to this pattern of development. Sooner or later but certainly at some point in time, the resource are depleted and both the fishing community and industry left to suffer the consequences.

For Tanzania a country with a predominantly artisanal fisheries sector special attention need be undertaken in respect of the development which may inadvertently lead to the collapse of the fishery resources. Special attention need to be taken because of the fragility of the artisanal sector. Unlike the industrial sector which has its own peculiar constraints, the artisanal sector in Tanzania is characterized by low or lack of savings. The fact that it is essentially a hand to mouth activity exposes it to severe shocks affecting a way of life for many of the coastal populations.

The problem presented by this fragility can have huge cost to the nation in terms of losses attributable to the

waste generated by the inefficiency of the sector and the support the government may be called to extend to a segment of the population left in abject poverty.

Given therefore that there must be a meaningful strategy aimed at protecting the resource and the fishermen, the responsibility lies with the government to evaluate and adopt an approach or approaches which, bearing in mind the dynamics of the resource, would encourage the development of the sector and thus granting to the coastal population the stability and security that they presently do not have.

With the above concern in mind, it thus becomes apparent, as observed in the preceding section, that for managerial purposes certain basic information need be available if the objectives the administration set for itself are to have any scientific basis for justification and evaluation. To an artisanal fishery sector such as Tanzania's this poses far more challenges due to the remoteness of the fishing communities. But given that you invariably have some form of government village administration reaching far into these remote communities, it should be possible through public education, to enlist the cooperation of the villages and their fishermen in building a base of information which would assist in the determination or at least give an indication of the state of the fishery and therefore the management regime which may be instituted for a given locality or region. This should be a basic strategy and is equally fundamental to what Professor Anderson identifies as a first step in the management process where the establishment of the size of the stock and the fleet, the relationship between and amongst certain variables affecting the stock are key to the process of developing fishery management policy.¹⁷

The caution that need to be made here again has to do with an approach to statistical data with a passion. Even in developed economies where research funding cannot, in relative terms, be assumed as lacking, it did take years and even decades, to collect and analyze the data coming from the

fishing grounds enabling those country to obtain knowledge about the availability of species, their behavior, the effect of climatic and oceanographic changes to the stock and thus predict the dynamics involved in the growth and exploitation of the resource.

Indeed the crucial distinction here for any attempt to regulate the exploitation of the fishery resources in Tanzanian waters may rest in what Francis Christy, Jr, in a commentary response to Pontecorvo's "Fishery Statistics: What we need to know" suggests as being critical in the management and regulation of fisheries.¹⁰ Without dismissing the relevance of Pontecorvo's approach he argues that the question is not so much about "what statistics at what cost and for what set of end users" but more in substituting users for uses which, he, I believe correctly, submits, gives a different perspective. That as users statistics are not required for their own sake rather they are intended as tools to attain certain objectives - uses. It is therefore these "uses" that are important to identify and thus enable us to define the information we urgently require.

The essence of Christy's approach is the fact that it gives a rather simplified approach to the search of useful data for management decisions. This is more adaptable to an artisanal fishery where, given the general skills and education of the sector, simplicity could be the greatest virtue. Because having identified managerial objectives the emphasis moves to ascertaining the sort of data or information which is needed to influence or attain those objectives. Consequently, to the local fishing community it will not be burdened with attempts to dwelling the provision of information far removed the relevance of their engagement and spanning beyond what they would see and appreciate as being a key element in the conservation of a resource they too have an interest in.

What cannot be over emphasized in relation to importance of appropriate knowledge of the fishery resource is that what

is at risk is not only the interest of the local communities but of the government too. At the time when the Tanzanian government is pushing for joint ventures, it is undeniable that if preparatory data is not enough to provide reliable information on stocks of interest to the venture, it would be militating against the governments interest. Consequently knowledge about the resource becomes of strategic significance to the governments developmental objectives as well.

Because the fishermen is central to this process of building up the necessary information base for the fishery resources management, it would therefore appear as critical that their support be obtained. While it is obvious that it would be easier having them working with the administration rather than against, it nevertheless is evidently clear that such is not often the case. While this may very well be a general phenomena within fishing communities, as equally proven by fishermen in Boulogne - France and, Penzance in the Western District of England during field visits, the prevalence sense of mistrust poses a gap that needs to be bridged if administrators are to be seen as responding to concerns that are not only of relevance to them as managers but to the fishermen as the immediate beneficiaries of these resources in the short as well as in the long run.

While fishermen are known of having their own strong opinion about how things need be done, they are equally too willing to identify and express their sympathy to measures aimed at conserving resources but which do not impinge on their efforts. This may be contradictory but it sure opens an area of common agreement from where a working relationship can be established. This, for the fishermen of Penzance and Boulogne appears to have been attained through the establishment and operations of fishermen cooperatives and associations.

In a largely artisanal setting such as Tanzania's the relationship between those who seek to manage the resources

and those who exploit them can hardly be fruitful if the administration does not appear to be working for the interest of the fishermen. Here, public education can be another critical element. In Tanzania the government does not have the leverage which administrations in countries such as England and France have in relation to influencing availability of credit and the enforcement of its policy measures. The good will of those that are managed becomes a very important aspect if success is to be achieved.

And yet, while too often the administration has made numerous efforts to convene forums by way of workshops and seminars amongst its officials and employees aimed at designing and implementing administrative measures for regulating and control of the country fishery sector, this has not been matched by an undertaking to "educate" the fishermen about the relevance of these administrative measures and the interest they are intended to protect. Too often these fishermen and their communities are merely subjected to demands of compliance to measures most of them can hardly relate to. Why should one have to report data about his own catches or landings? It may seem simple and logical but it shouldn't be taken for granted that the fishermen sees it the way we do. It is not unusual to find beliefs in coastal communities about the inexhaustibility of the living resources of the sea. It has to be proved that this is not necessarily so.

Consequently, fishermen will continue to see managerial efforts as basically interventionistic and seeking to control and limit their rights and privileges on the pretext of public good as long as there continues to exist mistrust between the two. There is a lot that the fishermen has to learn but there is equally a great deal that managers have to learn as well in terms of the delivery of their message.

On a different level, the significance of bridging the gap between managers and the managed ties in with the importance expressed earlier about the simplicity and

relevance of the data or information which managers must seek particularly those as in Tanzania who have to develop an extensive small scale fishing industry. The warning here is that managers need approach with caution managerial concepts which have often been researched for application to developed countries fishery, essentially industrial and, which may be facing entirely different constraints in terms of oceanography, biology and socio-economic demands.

While no argument is made for the disregard of available scientific approaches tested elsewhere, it is nevertheless important that Tanzania should be aware of the limitations presented by these advances in as much as even in those countries where there has been years of investment in such research, and ultimately practical theories, the often alleged exactness of such science should only be proof of the caution that must be observed.¹⁹

What Tanzania must learn and appreciate from the experiences of developed fishing nations is the fact that rational fisheries management strategies must contend with socio-economic factors that influence the exploitation of the marine resources. That, the context on which strategies are adopted must not loose focus, and relevance, of the intrinsic relationships upon which they are to operate and attain their intended objectives. Ultimately, the experiences of countries such as Indonesia and Philippines where specific public relations programs intended to raise national consciousness for implementing new ocean management strategies can play a constructive role in this endeavour.

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CHAPTER III

Challenges for Tanzania.

3.1 The Organization and its Constraints.

This section takes the view that management policies for national fisheries are inseparable from the broader question of national fisheries administration and development. It is submitted that the organization is just as critical and at times the only factor which may determine the influence and success of desired management policies. Secondly it is also argued that the organization need be structured so as to be and act as a tool of response to what may constitute national objectives the attainment of which it would be entrusted with.

With these two factors in mind it therefore becomes a surprize that while there has been numerous efforts towards the improvement of Tanzanian fisheries, there has also, on the other hand, been a clear absence of an undertaking to examine the degree to which the very organization within which these efforts have been attempted could itself be a hindrance. This disposition is partly due to the belief about the resilience of government bodies, the trust or myth about their capabilities of being adoptive on the face of evolving challenges during the process of development.

The fact that Tanzania, unlike most other African countries, is having a unique form of government places an unusual significance on the form and nature of the organization the government selects as a vehicle of discharging its policies and realizing its developmental objectives. A unique government in that it is a product of the union, in 1964, between the former Tanganyika and Zanzibar governments resulting into the United Republic of Tanzania.

This Union however retained a sovereign government for Zanzibar with jurisdiction on matters other than those pertaining to finance, defense, foreign affairs, telecommunication and higher education which were reserved to the union or central government. One of the criticisms against this government structure has been that while Zanzibar retained a government of its own, Tanganyika on the other hand, did not. Consequently, the Union government is seen as being a government both for the union and what formerly used to be Tanganyika.

The dilemma that this government formation poses is particularly serious in relation to marine fishery resources and their management. While the conclusion of the 1982 UN Law of the Sea Convention may have at least provided a *modus operandi* upon which questions about authority and jurisdiction between and amongst states could be resolved; for Tanzania, the implication arising from this duality of government were not only bureaucratic but political as well. The later may explain why this problem has not received adequate attention in the hope that at some day the politicians will come to grips with the constraining situation presented by the existing balance of power.

Given that matters relating to natural resources and agriculture within which fisheries has been associated are not prescribed by the constitution as a subject of the Union, there has been a plethora of laws and regulations pertaining to fisheries emanating from the two parliaments and their respective administrative organs. It has also been a source of friction or misunderstandings particularly by the Zanzibaris who fear encroachment upon their authority by the mainland authorities.

While it may be a relative easier question to determine with regard to jurisdiction in that the Union Government has authority for fisheries matters over Mainland Tanzania and

therefore that the Isles Government would have exclusive jurisdiction in Zanzibar and Pemba, the problem does not lend itself to such simplicity when, it comes to defining the extent of the respective jurisdictions over the sea. While regional land boundaries are clearly defined amongst provinces the Zanzibaris have at times felt that the boundary should not be taken in similar fashion, that is, as a regional administrative line but rather more as a territorial line.

If there has been any muted dissatisfaction with the two governments it has been more out of the realization that the artisanal fishermen from both the Mainland and the Isles have more in common than they have disagreements. Any demands about designated territories would similarly require a prescription of the privileges and duties which these fishermen must enjoy. This would also lead to demands for further regulatory and enforcement activities. In any event, the problem here, as noted earlier, is more political than anything else.

However, even within the two territories themselves, the existing set-ups have their own internal constraints. For the Mainland, the Fisheries Division in the Ministry of Natural Resources, Tourism and Environment has the primary responsibility in advising the Government, the regional and district authorities on fisheries development, management and the execution of fisheries development policy.

This executory role of the Fisheries Division is in itself hampered by the fact that at the regional and district level both the fresh water and marine resources fisheries officers are answerable to the Regional/District Development Directors (RDD/DDD) who are themselves ultimately answerable not to the Ministry responsible for Natural Resources (fisheries) but to the Ministry of Local Government and Cooperatives.

The rationality for this apparent anomaly is justified in the economies of scale provided by the RDD/DDD acting as a

multi-sectoral coordinators for the broad government interests in their respective regions. This has resulted in two shortcomings. The first is that in marine areas, and indeed even in shared fresh water bodies, there has been no established mechanisms for coordination of the management efforts. As a result it is not unusual to have different districts and regions acting differently.

The second disadvantage stems from the dominant and even deciding influence of the RDD or DDD's in terms of channeling funds for development activities to competing priorities. Often, fisheries officers claim, fishery interests have suffered relegation in favor of other natural resource concerns, namely, forestry and wildlife. This has caused incidences whereby even funds which may have been specifically allotted for fisheries development purposes are reallocated by the RDD/DDD to other sectors running out of their approved funding.

In essence the fact that field personnel are answerable to different governmental agencies or authorities presents a significant obstacle to the efficient administration of the Government policies and development programs in the fisheries sector. Apart from the possibility funds risks being reallocated to other areas, this situation also impedes the coordination and cooperation of fisheries staff at various levels. It also must diminish the effectiveness of the Fisheries Division in formulating and executing programs designed to develop its sectoral interests. While the Panning Commission was established to ensure the coordination and balance of development programs in relation to their formulation and execution, much is yet to be done especially when the role of the RDD's remains as influential and as determinant when it comes to implementation and supervision.

The situation in Zanzibar is not much different either. There under the decentralization policy, the Fisheries Division of the Ministry of Marine, Forestry Resources and Tourism has little control over the deployment of field staff

and on the panning and implementation of field programs. However, on the overall, staff at each level have considerable independence in their respective, but mostly overlapping, areas of responsibilities. As a result, here too, coordination has proven difficult and generally inadequate.

The fact that economic benefits from fisheries are not easily identifiable or that they would require some time to be so identifiable results in priority being directed towards areas which, be they in fishery or anything else, exhibits immediate results rather than contributing to the longer term objectives in the context of well established programs. This situation is exacerbated when the sectoral Division has little or no control on development funds or when needs and priorities reflected in programs are those seen and expected by Regional or District authorities without regard to the long term concerns of the fisheries sector.

All said though, fisheries as a sector has just as suffered even from the hands of the central government itself. Perhaps nothing reveals the lopsided attention accorded the sector more than the budgetary support it has been able to secure in comparison with other natural resource sectors. For the financial year 1987/88 of the total Tsh 468,333,000 (about US\$ 5,595,000) allocated to the then Ministry of Lands Natural Resources and Tourism, Tsh 93,200,000 (about US\$ 1 million) was approved for the Fisheries Division. This amount was to cover development and recurrent activities both for fresh water and marine fishery with the former taking a bigger chunk than the latter.

The disadvantage which the fishery sector suffers may also be attributable to the absence of experts with background in fisheries in the Planning Commission. The Commission which is in charge of coordinating the formulation and implementation of national development plans has a very important role in assigning priorities. It usually has a strong influence in the allocation of budgetary funds among

other governmental agencies, as well as the establishment and use of other financial or other kinds of resources, such as credit incentives, foreign assistance etc. Because its influence extends far beyond a single ministry it can influence the behavior of even RDD/DDD's who may be inclined to relocate funds approved for specific purposes.

The Problem: As noted earlier, I am of the opinion that the limited extent to which fisheries management has had an impact in the development of the fisheries is occasioned by two main factors; structural and political. The fact that these have been so pervasive, and that they constitute obstacles to the formulation and execution of a fisheries policy, reveals what could be seen as a contradiction given the time and money that Tanzania spent in sending a delegation to the UNCLOS III negotiations bent on protecting her ocean interests which included fisheries.

It also however reveals another contradiction which may perhaps be central to the problem posed by the structural limitations. This may be reflected by the fact that apart from fishing Tanzania does not have a strong maritime tradition. While she was engaged in the UNCLOS deliberations her principal interest was to secure sovereign rights over a vast offshore area. That existing institutions and national capabilities were either inadequate or non-existent in the context of her assuming responsibility for, and control of, this area was not a question of immediate significance.

Consequently on the attainment of the rights and duties granted by the 1982 Convention, Tanzania found herself without the necessary institutional arrangements for the development planning inherent in the conceptual framework of ocean resources such as fisheries. As a result, and in response to this partial realization, a broadening of the mandate of a number of national institutions concerned with marine affairs and an increase of some of the existing capabilities in terms of material and manpower was attempted,

when what was indeed required was beyond a mere exercise in broadening of institutional mandates.

As a conerstone to this dilemma was the fact that Tanzania did not have a commitment which could be said to constitute its fishery or marine resources policy. For this would have necessitated, with the right political support, the evaluation and examination of the adequacy of the system as it existed and its capabilities in terms of addressing the governments policy objectives.

It has often been said that institutions are the instruments with which to accomplish policy. What then is required in the beginning more than the institution itself is the definition of the goals and mechanisms which would ensure effective coordination at all levels in the pursuit of desired policy. This approach is particularly more demanding and challenging for fisheries management. For many countries this obligation has been seen as daunting as it has been a challenge. Admittedly, the question must be: what are the most effective ways of achieving national objectives at least coast?.

For Tanzania the cost has been exorbitant. The problems posed by the duality of the two governments and the multiplicity of uncoordinated relationships regulating or controlling one or some aspects related to fisheries can only generate waste both in human and financial terms.

Unfortunately there does not seem to be any light at the end of the tunnel. As recent as 1989, the adoption of the Territorial Sea and Exclusive Economic Zone Act which was heralded as ushering in a horizon has not helped matters either. In essence, the Act is an attempt to do two things: one, is to formally declare Tanzanias territorial sea of 12 nautical miles and her EEZ of 188 nautical miles as per the 1982 Convention, and two, it is an effort to mandate to the Union Government some responsibilities relating to the management of ocean resources which were hitherto under the jurisdiction of ministries whose responsibilities were not

reserved to the Union Government.

The question that arises here is the validity of an Act that clearly assigns to the Union responsibilities which the constitution did not. Here the trick is done by entrusting the administration of the Act to the Minister of Foreign Affairs who as per section 19 may make regulations for carrying into effect the provisions of the Act, "and in particular respecting :-

- (a) any activity relating to the exploration or exploitation of the Zone;
- (b) any activity relating to the economic exploration or exploitation of the Zone;
- (c) the authorization, control and regulation of scientific research in the Zone;
- (d) the safety and protection of structures or devices in the Zone;
- (e) the preservation of the marine environment of the United Republic and the prevention and control of pollution thereto;
- (f) the regulation of the conduct of any person in or upon the Zone;
- (g) conservation measures to protect the living resources of the sea

The major failing, apart from the declaratory significance, of this legislation is not only about the expertise and capability of the Ministry of Foreign Affairs to discharge the mandate so assigned to it but the fact that the other principal legislations relating to fisheries such as the Fisheries Act 1970 and regulations made there under, 1973, for Mainland Tanzania, and relevant legislations for the Isles, were not modified in line with the new legislation but were left to operate in tandem. Resulting in further discord and was only able to bring about a new horizon of uncertainty.

That there is an urgent need to rationalize government policies and its existing structures cannot be over

emphasized. That the success or benefits that the country and its people could obtain hinges more importantly on the development of appropriate national capabilities is undeniable. This demands two immediate measures: first, the assumption of the responsibility for the management of the marine areas by a national body entrusted with policy making and coordination; secondly, the development of national capabilities by rationalizing employment of skilled personnel currently under different authorities; and, thirdly, the recognition that the acceptance, through ratification, of the LOS Convention obliges the Government to undertake measures intended to implement the Convention. The TS and EEZ Act is but an umbrella which triggers demand for legislative changes elsewhere. An exhaustive review of all the legislation having a bearing on ocean management both for the Mainland and the Isles need, with urgency, to be undertaken.

This calls for a new approach. Whatever institutional form(s) is or are adopted, caution demands an evolutionary and adaptive strategy which strengthens and enhances the role played by the ministry responsible for fisheries development.

3.2 Issues in National Fisheries.

In the preceding section and chapters an attempt was made to identify the implication for Tanzania stemming from her newly acquired maritime jurisdiction. Evidently, while there are benefits to be gained, there are also responsibilities to be discharged. What is to be gained and the responsibilities the administration has assumed in terms of realizing these gains can best be analyzed in the context of the issues arising from what constitutes the countries marine fisheries policy.

It is noteworthy to observe that until early 1992 the Government was still in the process of producing a formal document to constitute its National Fisheries Policy which is also proof of difficulties it has been facing in its efforts towards a rationalized management approach for the sector. This notwithstanding, one is able to construct through the current Five Year Plan, and recent annual ministerial budget speeches, what amounts to the goals and objectives of the Government with regard to its fishery resources.¹ These are identified as follows:

- i) To increase fish production as a means of providing the much need animal protein at a reasonable price;
- ii) To ensure fishermen raise their income and standard of living;
- iii) To promote and consolidate fisheries training, research, statistical data collection and improve the administrative machinery of fisheries and related production institutions;
- iv) To promote regional co-operation in working out a strategy for managing and exploiting fisheries resources which are shared with other states;
- v) To promote and consolidate national capabilities to exploit marine fisheries resources within our territory;
- vi) To earn foreign exchange from the sale of surplus

fish, crustacea and other marine aquatic products;
and;

- vii) To consolidate the national policy of self reliance in the field of fishing, fish processing, preservation and marketing of fishery products.

It is indeed difficult, except for an obvious absence of a commitment to the protection of the marine environment, to fault the intentions of the Government in the context of its needs for the exploitation and management of the fishery resources. These policy objectives, though, need to be seen more in terms of the structure of an industry which as observed in the preceding chapters essentially constitutes of:

- a) a large, mainly subsistence artisanal sector, where the majority of the fishermen concentrate on the inshore waters using small boats;
- b) a small industrial sector concentrate on shrimp fishery on the inshore waters, with a further small part of which fish on the offshore waters for pelagic resources;
- c) a resource base whose data inadequacy and unreliability constrains upon its rational exploitation, planning and development; and,
- d) a marketing and distribution system which inhibits the expansion of the industry.

The Objectives: The ideals expressed by the Government and the above setting upon which these ideals must operate present a formidable challenge which must be overcome if any gains are to be realized and enhanced. While these benefits depend on the development of the sector the challenge rests on the adoption of a strategy which has clear objectives that can be audited in relation to activity or inactivity. The last section highlighted the seriousness posed by the inadequacies in the institutional framework for the marine resource management.

Thus if the Government is bent to "promote and consolidate national capabilities to exploit marine fisheries resources" the dual and multi-level structure of the fisheries administration stands out as one of the major issues acting as an impediment to the proper development and management of its fisheries resources. The present structure implies a piecemeal approach to the promotion and consolidation of policy goals and objectives, and therefore resulting in uncoordinated activities for lack of clear appraisal and overall responsibility in the execution and management measures on national fishery.

The most serious and practical limitation posed by this element is the fact that institutional weaknesses permeates the entire fabric upon which any meaningful capabilities could be developed. It inhibits planning capabilities if the Fisheries Division cannot determine and regulate the employment of fisheries staff at the regional and district levels. More so it impedes the building of a reliable statistical system given its reliance on different regional and district authorities having different priorities. The existing organizational structure has severely diluted the authority of the Fisheries Division in attempting to establish a coordinated and integrated mechanism for planning and development so as to ensure that the sector contributes more efficiently towards both its sectoral and national objectives.

The Legal Framework: Attendant to problems associated with institutional limitations rise those that stem from the existing legislations. Here, again, while Tanzania took measures to formalize the declaration of her EEZ by the enactment of the Territorial Sea and Exclusive Economic Zone Act of 1989, there has been no effort yet undertaken to review and rationalize existing legislations both for Tanzania Mainland and the Isles so as to provide an appropriate legal basis for the country's fishery management regime.

A case in point. For mainland Tanzania, the Fisheries Act of 1970, with general regulations formulated in 1975 and 1983, provides the framework for the operation and control of the fishery industry. But this Act essentially operates as a revenue gathering mechanism through the establishment of a system of licensing whose enforcement is yet another difficulty.

There is no greater proof about the emphasis (revenue) of the fisheries Act, 1970, than an examination of what it regulates against what it does not. Because the artisanal fishery is rather small scale using limited technology, it does not seem to secure a high profile. Part II (Registration of Fishing Vessels) paragraph 3(2) of the Fisheries (General) Regulations 1973, provides that registration "shall apply to every vessel, other than dug-out canoes, however called or described, used for fishing purposes".

Given that artisanal fishing represents about 80% of Tanzanian marine catches, the exclusion of dug-out canoes from registration represents about 70% of the estimated artisanal fleet on the mainland coast. Table 3.

Table 3.

**Numbers of Artisanal Fishing Boats by Type and Region.
1986.**

<u>Boat Type</u>	<u>Tanga</u>	<u>Coast</u>	<u>Dar.</u>	<u>Lindi</u>	<u>Mtwara</u>	<u>Totals</u>
Mtumbwi	180	177	088	343	167	0955
Ngalawa	384	390	363	172	013	1322
Mashua	174	193	169	085	163	0784
Boti	053	037	107	014	007	0218
Totals	791	797	727	614	350	3279

Note: Mtumbwi are dug-out canoes of 2-4 meter length

propelled by paddling, Ngalawa are dug-out canoes with sails and fitted with outriggers for stability, Mashuas are planked boats of 5 - 10 meters in length fitted with sails, and boti are motorized boats.

Source: Summary of Fisheries and Resource Information for Mainland Tanzania. L.B. Nhwani.

Furthermore, the scope of fishermen and fisheries subjected to licensing is severely restricted. Regulation 13 (1) provides that "No person shall engage in fishing or other dealing in any of the types of fish or fish products enumerated in Part B of the Third Schedule unless he is a holder of a valid licence" Part B of the Third Schedule lists the types of fish and fish products; namely, 1. Crustacea 2. Sea weed 3. Beche-der-mer 4. Sea Shells 5. Marine sport fishing 6. Trout sport fishing. Again, here excluding a broad array of inshore species of interest to, and targeted by the artisanal fishermen.

What must be alarming in respect of the above specie exclusion is not so much about the exclusion itself rather than the fact that it does not imply that the other species not subjected to licensing are considered in a state of abundance which can support unlicensed fishing. This is merely a reflection of the fact that these resources in the context of revenue to the treasury do not contribute a readily appreciable input; meaning the artisanal sector.

The above view is further consolidated by Regulation 41 (1) which provides licence exemptions relating to methods of fishing thus; "Notwithstanding anything contained in these regulations, no licence, permit or permission shall be required for fishing by any of the methods set out in the Fourth Schedule" And the Fourth Schedule, titled "Fishing Methods Exempted From Taking Out A Licence" lists the following:

1. Fishing for Prawns using-Kutanda Uduvi.
2. Using rod and line or handline from the beach without using a fishing vessel whether for sport fishing, domestic consumption or sale, except in a declared strout stream.
3. Small cast nets, seine nets - for amusement, spot, domestic consumption or commercial purposes.
4. Cast nets, baskets, traps, gill nets when used without using a fishing vessel - for domestic consumption or sale.

Of interest here is also the fact that while there is no doubt that most of the artisanal fishery can legally claim exclusion, the provisions could also be a source of confusion. consider, for instance, paragraph 3 of the Fourth Schedule above. Because the regulations do not give a definition or specification for what could constitute "small" and artisanal nets are generally small, a significant portion of this sector may be exempted from the regulatory regime established by the 1970 Act. Table 4.

The greatest flaw with this legislative framework is that it does not encourage a resource management approach. It may encourage a management framework based on commercially exploitable resources but defeats the very foundation upon which management for sustainable development can be built. How do you determine catches by a fleet that is unregistered, unlicensed and above all that does not have any obligation to assist in the creation of a statistical data base? This could also have avoided the use of special surveys which must be undertaken now in order to collect relevant information pertaining to the sector.

Table 4.

Number of Artisanal Gears by Type (1980)

Gear Type	Totals
Gill Nets	8842
Shark Gill Nets	3590
Beach Seines	1013
Cast Nets	216
Hand lines	13 478
Long Lines	121
Basket Traps	9 159
Fixed Traps	3 159
Unspecified Gears	459

Source: Statistics Section, Fisheries Division.

L.B. Nhwani.

The problem here may lie with what has been identified as a traditional negative character of legislative approach whereby legal provisions are more in terms of prohibitions and punishment; in terms of what ought not to be done rather than in encouraging what need be done - the developmental process of law.² Under the challenges brought about by the

new law of the sea there is necessarily a need for a dynamic legal and administrative regime which would enable a coastal state not only to promote the optimum utilization of the resources but to determine her allowable catch. This would hardly be attained within a legal and administrative regime which does not require all its fishermen to provide statistical information about their catches.

Nevertheless, even without legislative provisions provides for a legal basis for the fisheries management planning, there is room within the broad mandate accorded to the sectoral Ministry to do just that. The Fisheries Act 1970, provides for the powers of the Minister, in this case the Minister for Natural Resources, Environment and Tourism, to make a wide range of regulations.

3:3 Issues On Access By Foreign Fleets.

Tanzania's policy towards fishing in its waters by foreign fleets can, as pointed out in the last section, broadly be described as aimed at earning foreign from the sale of surplus fish, crustacea and other marine aquatic products. The legal framework for this objective rests on Section 10 (1) of the Territorial Sea and Exclusive Economic Zone Act of 1989 (TS & EEZ Act), which provides: "no person shall within the Zone, except under or in accordance with an agreement with the government of the United Republic:-

- (a) explore or exploit any resources thereof;
- (b) carry out any search or excavation;
- (c) conduct any research;
- (d) drill in or conduct, maintain or operate any structure or device; or.
- (e) carry out any economic activity."

In this connection Sub paragraph (2) provides that this section "shall not apply to fishing by a citizen of the United Republic or to a vessel registered in the United Republic"

It was noted earlier that Tanzania's prime interest in extending her maritime jurisdiction was founded on the need to "keep foreign fishing vessels away". The enactment of the TS & EEZ Act was therefore a significant response to the changes brought about by the 1982 Law of the Sea Convention which appeared to enhance and protect what seemed as a fundamental interest in the ocean for Tanzania.

Underlying the need to keep foreign fishing vessels away were two basic reasons. One, that foreign fleets were exploiting resources over which it was believed the national fleet had priority and thus deserved protection from third parties, and, two, that if a third party was to get any benefits from these resources, it should only be possible after some fee was payable to the state. The question that arises therefore is what real benefits has Tanzania secured

or stand to obtain in the light of its obligation to manage and control the activities of the foreign fleet.

To be sure, the TS & EEZ Act has its own peculiar problems pertaining to fishing by foreign vessels which need mention before examination of what the country obtains by licensing foreign vessels. First, the Act is not specific on whether licensing foreign vessels applies both to the territorial sea - Part II, and the EEZ - Part III or only to the later. Part II (Territorial Sea) Section (1) provides, "There is established a maritime zone to be known as the Territorial Sea", while Part III section 7 (1) provides, "There is established contiguous to the territorial waters, a maritime zone to be known as the Exclusive Economic Zone". However, licensing provisions are only found under Part III and the provisions appearing thereunder repeatedly refer to the Zone with a capital Z and zone with an uncapitalized z, which may imply a difference between the "Zone" being the EEZ and the "zone" being the maritime zones established under sections 3(1) and 7(1).

In its preliminary provisions Part I section 2 (Interpretation) the terms Zone or zone are not defined except that "Exclusive Economic Zone" means the maritime zone described under section 7 of this Act. Which may also signify that the capital Z and z are only used interchangeably in Part III without any substantive difference in meaning. However, Section 12 (1) of Part III becomes more express in relation to the zone while raising yet another different aspect. There it is provided that, "Any law relating to Fisheries, National Environment Management, Merchant Shipping, Petroleum and Mining shall apply in relation to the exploration of natural resources and the question of Marine pollution in the territorial and exclusive economic zone." Note the restrictive reference to exploration of natural resources and marine pollution. Does this exclude exploitation of the same? Does this signify a limitation of applicability of those laws to the objects of section 10(1)

(a) as quoted above i.e "explore or exploit". It however clearly differentiates between the EEZ and the territorial sea.

Secondly, because the Act maintains a distinction between local and foreign fishing vessels, as per section 10 (1) and (2) the definition of nationality becomes crucial as more strict conditions are imposed on foreign fishermen, relating to compliance, the licence fee levied and the level of penalty that can be imposed (fine not less than US\$ 100 000). The Act however gives nationality to a vessel on the basis of registration in the United Republic. There is no requirement for the incorporation of the company under Tanzanian law as a local company or the inclusion of a substantive local element.

The above nationality criteria therefore poses a number of problems. One it makes it potentially easier for foreign to register in the country and thus to obtain benefits which are otherwise reserved for local vessels. And, two, it may even give rise to "flags of convenience" by allowing nationals of third states to register in Tanzania in order to gain access into the fishing grounds in or around Tanzanian waters, or in areas otherwise denied the home flag.

More important though, is the problem triggered by yet another agreement for which the Ministry of Foreign Affairs is equally responsible. In an Exchange of Notes dated 17 December 1975, and 9th July 1976, between Kenya and Tanzania respectively, resulting in a Maritime Boundary still valid to date, the two Governments agreed as per paragraph 3 thus:

3. Fishing and fisheries

- (a) It was agreed that indigenous fishermen from both countries engaged in fishing for subsistence, be permitted to fish within 12 nautical miles of either side of the territorial sea boundary in accordance with existing regulations.

(b) It was agreed that there be reciprocal recognition of fisheries licences, regulations and practices of either State applicable to indigenous fishermen aforesaid. For fishing within the area specified in paragraph 3 (a).

In essence therefore in the northern coast of Tanzania there is yet another group of players, the "indigenous" Kenyan fishermen operating under their country's respective regulation and practices. While the term "indigenous" is not defined it seems it was meant to discriminate against companies or entities that are either Kenyan or Tanzanian by mere registration or of minority holding by citizens of the two countries. This of course raises the problem of establishing the "genuine link" between the operator and the company. It also raise a serious problem in terms of catch statistics and the control by the administration in whose territory the foreign "indigenous" fishermen is fishing due to his being subjected to practices of his country of origin.

These shortcomings notwithstanding, the TS & EEZ Act stands as the principal legislation governing the activities of foreign fishing vessels in the EEZ. Section 19 of this Act empowers the Minister to make regulations giving effect to the provisions of the Act, and in particular respecting:

- (a) any activity relating to the exploration or exploitation of the Zone;
- (b) any activity relating to the economic exploration or exploitation of the Zone;
- (c) the authorization, control and regulation of scientific research in the Zone;
- (d) the safety of structures and devices in the zone;
- (e) the preservation of the marine environment of the United Republic and the preservation and control of pollution thereto;
- (f) the regulation of the conduct of any person in

- or upon the Zone; and,
- (g) the conservation measures to protect the living resources of the sea.

Since no regulations have been promulgated under the Act, regulations formulated in 1973 under the Fisheries Act of 1970 are considered generally applicable though they were specifically made for the then existing territorial sea of 50 nautical miles. They also do have general management principles which can prove adoptive to the managerial requirement of the new regime.

Access Arrangements: Lawrence Christy,⁹ identifies three broad choices open to coastal states for foreign participation in their fisheries: i) to prohibit or discourage any foreign participation, ii) to grant access to wholly foreign operations (licensing) and, iii) to permit access only in association with national partners (joint ventures) or national operations (over the side sales).

For Tanzania it can be observed that the government has taken to pursuing a mixture of both licensing and joint ventures. And here one gets a revelation of the advantages or disadvantages that the Government has obtained. It should also be noted that there does not seem to be any clearly spelled out objectives in relation to foreign participation other than the overriding need for revenue in foreign exchange, and thus the implication on the local fishing industry do not seem to be a pressing subject, at least not in express terms. In this context an examination of the proposed agreement on fishing between Tanzania and the European Economic Community (EEC) dated March 1990, which was yet to enter into force as of February of 1992, may be appropriate.

The agreement is couched in its preambular articles by the now familiar contradiction enabling the EEC member states to individually denounce the Law of the Sea Convention but seek under the EEC umbrella to exploit its benefits, hence "recalling that the Community and Tanzania are signatories to

the Law of the Sea". More importantly however is that the agreement authorizes, subject to a licence fee, Community fishing vessels to fish in Tanzania's fishing zone, because the agreement is principally concerned with fishing, it does not contain any specific management clauses other than an undertaking by the parties in Article 5 "to coordinate, either directly or within international organizations, to ensure the management and conservation of the living resources in the Indian ocean." And paragraph 5 of the Annex to the agreement boldly provides that "Community vessels shall have access to all of Tanzania's fishing zone"

Indeed the EEC/Tanzania agreement provides a number of interesting aspects pertaining to fishery management. In a review of bilateral fishery agreements concluded as a result of the new regime of the oceans, Carroz and Savini makes a distinction in relation to the structure and duration of access agreements.¹⁹ Some are known to be for a short term and normally self contained, that is, comprehensive. While others are long term (four to five years) and merely provide a framework for cooperation and thus do not include detailed terms and conditions such as the level of fee to be paid, the number and size of vessels, areas of operations etc, which details become the subject of a different agreement or protocol. The EEC/Tanzania agreement is neither of the two but both. The agreement, valid for three years and renewable for another three has an Annex and a Protocol forming an integral part of the agreement. And what it does not have in common with the two categories above may constitute its major flaw.

Article 1 of the agreement provides that its purpose is to establish the principles and rules which will in future govern, in all respects, the fishing activities of Community vessels in the Tanzanian fishing zone. Principles, may be, but as for rules there seems to be a lot that is left out in terms of relevant details if indeed it is to be relevant in all respects. For instance, the agreement under Article 6

only loosely provides that vessels authorized to fish shall be obliged to communicate to the Tanzanian authorities statements of catch without establishing a commitment on the part of the licensee as to the manner and the time when these reports should be submitted.

Curiously article 9 raises a very fundamental issue though one should not have expected it to have received a solution here. Sub-paragraph 3 thereof provides that, "any conservation measures taken by the Tanzanian authorities shall be based on objective and scientific criteria.." That is, if Tanzania is to decide to take measures which may affect the activities of the Communities vessels (art. 9(1)). The false assumption here is that the decision to allow Community vessels in the first place was itself based on objective and scientific criteria which must be a fallacy. In any event, it underlines the importance of building up Tanzania's capability in resource assessment which is why a better catch reporting system ought to have devised or spelled out under the agreement.

And this brings to the fore yet another important consideration - the financial package accorded Tanzania. At this point it may suffice to say that Tanzania is able under the agreement to get some "development aid" it needs from the EEC. But it increasingly becomes difficult to rationalize the value of what it obtains in relation to the resources the EEC is securing from the Tanzanian waters. Who benefits from who? It is easier to claim mutual benefits but as long as the agreement is based on values the question becomes unavoidable.

The Annex to the Agreement set a fee of 20 ECU per tonne of tuna caught within Tanzania's fishing zone with an advance of 1000 ECU per year (equivalent to 50 tonnes) for each licensed tuna seiner. For longliners a lumpsum of 200 ECU per year equivalent to the fee for 10 tonnes of tuna and other migratory species. While advance payments are not recoverable, for any additional tonnes caught in excess of

estimated yearly catches, Tanzania is to obtain the respective financial compensation provided in following terms: "The final statement of the fees due for the fishing year in respect of each vessel shall be drawn up by the Commission of the European Communities on the basis of the catch statements made by the shipowners, confirmed by the scientific institutes responsible for verification of catch figures (ORSTOM and the Spanish Oceanographic Institute). Any additional payment due shall be paid by the shipowners within 30 days.."

One of the serious difficulties facing even fishery administrators even in developed countries is the flow of reliable statistical information. Too often log-books are neglected or misreporting rampant. Without an effective compliance and control mechanism this will best remain wishful thinking especially when for additional catches above the minimum the shipowner is equally called to make a payment. Further the fact that the additional payment will be based on catch statements submitted by shipowners there will be a tendency to workout log books so as to transfer any apparent excesses from one area to another so as to avoid having to bear the cost of any additional tonnage. The question is, what incentive is there for the shipowner to be too willing to work towards increasing his obligation. Indeed this also works to the advantage of the EEC. The more the shipowner works to avoid to pay for catches above the minimum the lesser the EEC would have to compensate Tanzania as per Article 2 of the Protocol.

Given Tanzania's limited control and surveillance capabilities, the control mechanism built into the agreement will most likely just remain useless. Paragraph 4 of the Annex requires vessels engaged in fishing in Tanzanian waters to communicate their position every three days and also reporting position and volume of catch on board when entering and leaving the fishing grounds. Three days interval for a long liner which while following tuna is said to be able to

travel 250 miles in 24 hours may enable an unscrupulous fishermen to enter and ultimately exit without having had to report anything.¹² It would thus be interesting to see what, if any, compensation that Tanzania may obtain as a result of reported surplus catches beyond the initial estimated minimum catches.

The protocol to the Fishing Agreement raises further important aspects in relation to the value Tanzania obtains for its resources. Article 2 gives a financial compensation of 1 050 000 ECU for three years to be paid in three equal instalments. Paragraph 2 however provides that, that amount is to cover fishing activities up to a catch weight of 7000 tonnes of tuna and other highly migratory species fished per year. If the annual amount caught is to exceed this quantity, compensation would be made at the rate of 50 ECU per each additional tonne.

Now, it is important to examine the above provision in relation to the Agreement and place it in a proper context. First, the Protocol itself as per Article 1(1) provides that "Pursuant to Article 2 of the Agreement, and for a period of three years from the date of its entry into force, the following fishing possibilities shall be accorded:

- for ocean going tuna seiners: Licences for 46 vessels.
- for surface longliners fishing for tuna and other migratory species: Licences for 8 vessels"

Article 2 of the Agreement under reference which has been cited before provides an advance payment of ECU 1000 as annual licence fee per vessel based on an estimate of 50 tonne of tuna per vessel at 20 ECU per tonne. Assuming the EEC deploys 46 ocean going tuna seiners as per the Protocol, their total estimated annual catch would be 2300 tonnes; and, for the longliners 1600 tonnes for 8 vessels, for a total of 3900 tonnes. And yet, the EEC as per Article 2 paragraph 2 does not begin to compensate Tanzania until shipowners report catches in excess not of 3900 tonnes but 7000 tonnes, when

again each additional tonne is compensated not at 20 ECU but 50 ECU per tonne.

The argument here is that if compensation given to Tanzania of 1 050 000 ECU's is based on a notional minimum catch of 7000 tonnes, the very fact that this estimate is not based on any known objective and scientific criteria, chances are that it is working against the interests of Tanzania and that, the promised additional higher payments per tonne above 7000 will best remain a pie in the sky!

It also is true that Tanzania fails in this agreement to obtain the potential of her EEC partners for assistance in the development of her fishing industry either by way of processing or marketing its own pelagic or demersal catches. While other countries have been successful in this regard there does not seem to be any interest here other than the training opportunities and financial package offered.

Lastly it may be worthy noting the clear absence of any specification relating to vessel tonnage and possible differentiation in respect of licence fee, gear and mesh size. It would seem that the degree of influence which Tanzania may have over these very crucial aspects is very limited and largely confined to the discretionary authority of granting a licence which is subject to "Tanzania laws and regulations". This may raise even serious implications if the Communities request as per Article 1(2) of the Protocol for "authorization for fishing possibilities for demersal and crustacea..." is to be granted.

Joint Ventures: Tanzania does not have a wide experience in joint ventures for fishing operations. Other than licensing some fishing operations, anything else resembling joint venture could be the marketing arrangement existing between the Tanzania Fisheries Corporation (TAFICO) and Taiyo of Japan whereby the latter assists TAFICO to sell about 75% of its shrimp catches in Japan at an agreed price which is often below the market but accords TAFICO entry into a market it otherwise may not have been able to. In this arrangement,

the Japanese command TAFICO's large shrimp vessels and also oversee the processing of shrimps on board for the market.

However the enactment of the National Investment (Promotion and Protection) Act § 10 of 1990, heralds in a new era for foreign investment into Tanzania. Hitherto government policy towards joint ventures was only lukewarm, if not resentful. The Act spells out a change of heart and signalling new enthusiasm. Of the areas identified as "priority areas for investment" are 1) Agriculture and Livestock Development 2) Natural Resources 3) Tourism and 4) Manufacturing Industries, Fish Processing and Canning, and, Fish Nets.¹²

In this context whether an applicant, that is, an interested foreign investor, is to be granted approval, the litmus test as per section 13(1) is "the likely contribution by the enterprise to the economic development and benefit of Tanzania, in particular, with respect to the following objectives:-

- (a) the maximization of foreign exchange earnings and savings;
- (b) the enhancement of import substitution activities which achieve identifiable substantial foreign exchange savings;
- (c) the expansion of food production;
- (d) the achievement of a high degree of technology transfer;
- (e) the creation of employment opportunities and the development of human resources;
- (f) the efficient utilization, expansion and diversification of the productive capacity of existing enterprises;
- (g) the provision of services or the production of goods which improve linkages between the various sectors of the economy."

Given the limited experience in this regard for Tanzania fisheries, and given the new thrust towards encouraging joint

ventures which evidently includes the fishery sector, the implication for Tanzania are considered further in the next chapter in the context of regional approaches in the management and development of regional fishery resources.

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CHAPTER IV

A Regional Approach.

4.1. The Setting.

Tanzania is part of a group of countries comprising the West Indian Ocean, an area classified as region number 51 for international fishery statistics.¹ For a number of reasons, especially absence of a wide continental margin which are characteristically known for nutrients and the lack of a strong upwelling current - also a good source of nutrients,² the West Indian Ocean is not therefore a particularly productive zone. However, the Food and Agriculture Organization (FAO) classifies the general state of the exploitation of the area as being "mostly moderately to fairly heavily exploited"³ indicating potential possibilities for further exploitation but within a strong framework of management to avert too heavy a pressure on the resource which may result in a collapse of the fishery.

Following the generalized extension of exclusive economic zones to 200 miles by most of the coastal states, FAO, in a desire to help the coastal states manage in a coordinated manner the exploitation of their ocean resources, assisted in the formation of a regional body - the Indian Ocean Fishery Commission (IOFC) which does not seem to have had much success apparently due to its large size (area 51 and 57), and the failure to respond to the immediate needs of coastal states for technical help and coordination.

In 1980 "sub-regional" committees of the IOFC were established amongst which was the South West Indian Ocean (SWIO) for the development and management of fisheries in the South West Indian Ocean. The Committee had as its members

Comoro, RE-Union (France), Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia and Tanzania. The Zone is said to have been chosen in accordance with the principal of "natural management areas, on the basis of common geographical features: hydrographic, biological and socio-economic, such that regional cooperation and transfer of technology is most likely to be effective."⁴

The South West Indian Ocean, therefore, while a smaller part of the Indian Ocean, equally reveals most of the characteristics of its larger part - less productive and narrower continental margins in comparison to other oceans such as the Pacific and the Atlantic.⁵ Perhaps its significant and basic characteristic is the fact that fish catches provides the bulk of the animal protein requirement for many of its coastal communities and thousands of jobs to fishermen in this area.

The total catch from this region is estimated at 221 000 tonnes of which about 162 000 tonnes (about 73%) are catches by artisanal fishermen,⁶ who as it was observed in the case of Tanzania, are amongst members of the society that are not so well. On the other hand the industrial fisheries land about 150 000 tonnes of tuna.⁷

It is estimated that the SWIO countries have a combined fishermen population of of over 77 000 though mostly at subsistence level.⁸ This number obtains a larger and probably more serious implication if one would bring into consideration the total number of people living directly from fisheries as family members or as support sectors.

Although artisanal fisheries are so valuable in most of the SWIO countries it is unfortunate that present catch levels for the region are assumed to be near the estimated potential for the zone which suggests that the countries must increasingly become aware of this fact and work towards ensuring that stocks available to artisanal fishermen do not become over exploited by the industrial fishery.

The question therefore is to what extent have the

countries of the SWIO region lived up to this. Admittedly all the countries have been striving officially committed to the development of their fisheries sector. The problem in all respects has been more about management difficulties than policy commitment. In any event, there are a number of broad and common objectives which can be identified from amongst the ideals pursued by the countries of the region; namely:

- i) increasing national food potential;
- ii) creating and expanding employment;
- iii) expanding the export sector for foreign exchange earnings; and,
- iv) managing and conserving stocks.

While these goals cannot be faulted, it is noteworthy remembering observations made earlier about management policies for fishery not being entirely inseparable from the larger issue about national fisheries administration and development. Management techniques, therefore, within the nine SWIO countries have, to a larger extent, been conditioned by the economic conditions prevailing in a particular country.

What becomes of crucial importance therefore relates to an issue which has been amongst the central arguments in this study, namely that, proper implementation of any desired policy objectives require a sound knowledge of the fishery stock and its dynamics, the regular collection of information on landings and on the economic conditions.

Perhaps the best review of the general situation in the region is as studied by SWIO Project Office which, while not involved in regulating fisheries, had acted as an advisory body in the management of the fishery resources in the various countries in the region. In its Bulletin of December 1985, examining Artisanal Fisheries Statistics in the SWIO Region, it is noted that "all countries" have been involved in the collection of "statistical data on their artisanal fisheries". It notes though that, "the reliability of the

final estimates of the catch and effort varies from country to country". Only Seychelles and Mauritius obtains a mention of satisfaction.

For the Comoro Islands it is observed that "there is no fisheries statistical system established and catch and effort estimates are not produced". Problems associated with the establishment of a statistical system are said to be funding and lack of qualified personnel. There has therefore been no assessment of the resource potential and thus not even estimates of potential yield. Here a rough estimate of the annual catch is given at 7307 tonnes,⁹ and, the inshore waters believed to be nearly fully exploited.

In Kenya, because some landing sites are not covered by permanent staff, estimates are based on raising a certain percentage above figures obtained from sites covered by enumerators. Likewise, here as in the Comoros no estimates of the potential yield have been made but it is observed that the potential yield may be around 10 000 tonnes in areas only within 0 - 20 metre depth which gives fishing grounds of about 2000 sqkm".¹⁰

In Madagascar, the length of the coastline and the isolation of many fishing vilages confines the collection of fishing statistics on main markets and therefore rendering those figures highly unreliable. It is observed that considerable amount of fish is landed and marketed in other smaller markets not covered by enumerators and which would result in a different statistical outlook. Again, in Madagascar there has been no resource assessment necessary to the determining of the potential catches available to the fishermen.¹¹ However it is also observed that while there are bigger fishing grounds there is a growing competition between artisanal fishermen and shrimp trawlers.

In Mauritius there is reported to be a reliable data collection system since 1976 catering for both artisanal and industrial fisheries. The statistical unit produces not only monthly catch and effort figures but also updates the number

of both fishermen and their boats. This has enabled the determination of the state of exploitation of her resources. In 1986 the 758 tonnes of catch was considered bigger than her estimated potential yield of 745 tonnes.¹²

As for Mozambique, apart from industrial fishery statistics, artisanal statistics are not available and allegedly would be impossible to obtain due to remoteness of many fishing villages and transport problems. It is further observed that government policy seems to place "more emphasis on the development of the artisanal fishery rather than management" with the result that artisanal fisheries statistics have a low priority. Because of this lack of information it has been considered very difficult making any estimates about potential yields. However, a preliminary figure of 6500 is cited as a working figure.¹³

In the Seychelles, regular surveys of fish landed on the country's beaches are carried hence enabling the country to have a reliable data base. The newly created Seychelles Fishing Authority undertakes, as in Mauritius, monthly catch and effort estimates by boat and gear are produced.

In Somalia there was no data whatsoever on the fisheries before 1982. However a data collection system was established with the assistance of FAO which began with a promising start but with the currently on-going civil war and the total collapse of the Somali government administration the industry and the statistical system established must have also suffered a collapse.

The unsatisfactory situation both for Tanzania Mainland and Zanzibar was explained earlier but could be promising if a project FAO is recommending in order to assist the country establish a reliable data collection system for its resources will materialize.

Accepting, therefore, the fact that the basic requirement in the management of fisheries resources is the availability of information on the state of the stocks being exploited, and the economic input of the fishermen or

industry into such exploitation, it becomes apparent that about 80% of the countries of the region do not have a framework that can enable them, in that context, to exploit their resources with the advantages such knowledge may have accorded them.

It can also be said that the geographical size of both Seychelles and Mauritius had also contributed to their ability to organize and administer a comparatively better statistical system for their countries. In the rest of the other countries, two prominent factors seem to play against such efforts, namely, 1) the absence of a concerted government effort in that regard, and, 2) the geographical disadvantages resulting from the isolation of some landing sites due to longer distances and poor communications.

And yet, the potential for the region is believed to be significant. In a summary of estimates undertaken by SWIO for these countries in respect of catches and potential yields the following were adduced: Of the main opportunities subject to increased landings were the by-catches from shallow water shrimp trawling in Kenya, Tanzania, Mozambique and Madagascar. Because in these trawls the target species are the high valued shrimps the by-catches are more often discarded which could have been landed to provide for the nutritional needs of the coastal populations. While no specific figure is available, the fact that the incidence of by-catch is high in most shrimp fishery would suggest considerable potential given the strength of the shrimp trawling industry in these countries.

Significant pelagic resources are estimated as being available for Somalia, Mozambique and Madagascar for their artisanal fisheries, while Sechelles, Kenya and Tanzania are thought as possibly having a somewhat limited additional resources. Greater potential is thought to be presented by increasing the operational range of fishing crafts beyond the inshore waters.¹⁴

It is of critical importance, nevertheless, to take into

account that the additional catches further ashore increases the possibility of the artisanal fishermen running into confrontation with yet another segment of the industrial fleet targeting similar resources, and as in many other incidences where the two are matched up against each other the artisanal fleet has always suffered more than the other. In any event this represents one of the crucial managerial problems which has to be faced by all the administration particularly in the inshore waters.

However, one of the most important ocean resource common to the South West Indian Ocean countries is tuna. And with regard to this resource there has been a significant increase in fishing in the region in 1989 and catches by all the fishing nations estimated to have considerably increased.¹⁵ This increase in catch has largely been attributed to French and Spanish purse seiners moving into this zone from their previous operational grounds in the Atlantic. Species most frequently targeted are Yellowfin, Skipjack, Bluefin and Bigeye. The principal fishing nations being France, Taiwan, Korea and Japan.¹⁶ With the exception of Skipjack, the other species are considered as being heavily to over-exploited.¹⁷

There is thus a general prevalence of foreign fleets in the tuna industry of the South West Indian Ocean. But like the resource themselves which are highly migratory, the fleets have also revealed a propensity to easily cross national jurisdictions in pursuit of this high value ocean resource.

This pursuit for tuna has consequently brought about a dramatic change of fishing technology in the region. While in early 1980's when purse seining was just replacing longlining in the Atlantic and Pacific oceans, it was noted that little development was taking place in this regard on the Indian ocean.¹⁸ However by the mid 80's the wind of change had already reached the region such that by the quarter of 1989, countries such as the Seychelles were reporting 51 purse seiners as an all time high.¹⁹ This trend is due to continue

in as much as purse seiners have proven more efficient as they have increasingly adopted more powerful winches and faster sinking nets.²⁰

With this expansion both in fleet and efficiency of gear there has also been a corresponding increase on the capital requirement to support the necessary investment in vessel and gear. Which has also meant increased catches. For the foreign fleet in the SWIO region this trend has shown a yearly increase. Table 5.

Consequently, for the countries of the SWIO region, without added benefits to their local fishing fleets, the growth they require for their own fleets has rather only been dismal. This has not been helped by yet the fact that the major foreign fishing fleets in the region are similarly just about the same powerful operators in the other oceans as well, especially in relation to tuna fishing.

The fact that tuna, migratory as they are, are targeted by fleets capable of chasing them from one ocean into another has contributed to the exportation of changes associated with oceanic fishing of these resources into the Indian ocean as well. However, most of these changes have largely been confined to the mere presence of highly specialised vessels without transferring any technology or assets to the coastal states of the region. It could be said that while countries are aware of the capabilities of the present generation of vessels, they generally remain far removed from obtaining advantages associated with the new technologies and operations.

And of the oceanic resources of the region, perhaps more than any other, tuna constitutes one species which has been largely studied both in terms of biology and migratory pattern. This was not, of course, prompted by concern for the interest of the coastal states but rather those of the major fishing nations. Recognizing that tuna resources like other renewable resources can easily be depleted by an unregulated

TABLE 5.

Foreign Fleet Catches in the SWIO Region.

Year	Tons	% (African catches)
1970	69 500	2.8
1971	76 700	2.7
1972	79 700	2.5
1973	79 300	2.3
1974	86 755	2.6
1975	67 885	2.0
1976	62 929	1.6
1977	98 877	2.3
1978	97 831	2.4
1979	71 677	2.4
1980	67 325	1.9
1981	70 858	2.1
1982	89 700	2.7
1983	110 515	3.6
1984	170 858	6.1
1985	221 460	7.8
1986	231 802	8.2

Source: Socio - Economic Data Base on African Fisheries.
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industry and thus place in jeopardy the major fishing nations industry and consumption patterns, concerted efforts have been directed towards studies on the biology and management of the tuna fisheries not only in the Indian Ocean but elsewhere as well.²¹ In the Indian Ocean this subject has prevailed in the efforts undertaken by the Indian Ocean

Fisheries Commission and is evidenced by the efforts placed into the establishment of the proposed Indian Ocean Tuna Commission with the objective of the management of the tuna resources.

In this section the magnitude and relevance of the fishing industry both as a nutritional source and as a vehicle for socio - economic development in terms of the regions resource potential has been underlined. It is clear that a great many of the figures given are officially classified as speculative. This has a very serious implication not only to the exploitation of the resources but also to the development needs of our countries. The sooner these implications as are examined in the next chapter are realized and a coalition of both practical considerations and political force are put in motion so as to develop mechanisms for improving data collection and cooperation about these resources, the better it will be for the harnessing of the potential offered by these oceanic resources.

4.2. A Justification For Joint Action:

- Constraints and Prospects.

For countries of the South West Indian Ocean, comprising a variety of socio-economic systems, approaches towards fishery resource management have been as varied as their varying economic and political outlooks. Because fishing is not only an economic activity but has social and political implications, approaches in the management of the resources have thus been greatly influenced both by political developments and administrative structures associated with a given socio-economic setting.

Articles 61 - 63 of the the UN Law of the Sea Convention sets out the framework for regional and international cooperation in the management of EEZ fishery resources. The question arising therefore is whether we need to have a further rationale in working towards this objective. Indeed it has been lauded as one of the most innovative features of the Convention in as far as it highlights the concept of regional cooperation as a vehicle for orderly exploitation and management of the resources of the ocean. For the SWIO countries it offers the opportunity for building a system which would complement national and regional efforts while striving to establish an effective management regime for these countries - jointly and severally.

The management and development of fisheries in the SWIO countries has therefore largely depended on the priority and objectives set by respective coastal state. It is clear though that these priorities and objectives will require increased input in terms of improved knowledge of the resource and other assistance. Because of the complexity involved, some key and often crucial issues of fishery management will dictate a regional approach for exploitation, managerial and developmental objectives. Underlying this approach is the fact that difficulties associated with the

implementation of the UN Convention are multi-dimensional, involving scientists, planners, legislators, administrators and politicians. It would also require the application of numerous skills at varying levels - local, national and regional.

One of the major difficulties facing administrators in the region as pointed out in the preceding section is that fishery resources of the region are not only limited but also remain largely unknown in terms of magnitude. The limited nature of the resource is due to the narrow continental shelf and deep ocean floors adjoining these countries, while lack of knowledge of the biology of the resource is due to the general lack of capital and equipment necessary for undertaking required scientific research.

On this background, another question that begs for an answer is the manner these countries, individually or jointly, are capable of realizing the benefits associated with an extended maritime jurisdiction, namely, i) increased fish output for the nutritional needs of the population, ii) increased employment and incomes, iii) a spring board for marine industries activity eg. processing, iv) foreign exchange earnings from sales v) joint ventures, and vi) training etc.

Admittedly the extension of the maritime jurisdiction provided not only increased fishery resources due to mere expansion of fishing grounds but also gave coastal states the responsibilities for managing and developing these resources. Amidst economies constrained by availability of funds and high expectations, a tendency to resort to mechanisms which seemingly provide tangible results in the short term has been unavoidable. Because of this preference, in some countries, notably Mozambique, Comoro, Madagascar, and Tanzania artisanal fishery research involving collection of statistics, training and technical assistance have suffered in favour of lucrative engagements involving species such as shrimp targeted by industrial fleets.

Development Opportunities: The existing situation in the SWIO countries is not entirely without hope. There is hope though based on a number of critical factors. Most countries in the region lack clearly spelled objectives which would constitute their fisheries policy. Fortunately in the same region, Seychelles is one single country which has made an attempt at the provision of a clear and concise policy in this regard. The Seychelles commitment is by no means accidental. In these Islands, fisheries accounted for over 10% of the GNP and being only second to tourism as a foreign currency earner in 1986.²² Together with the very high dependency of her population on fish for food, there has grown in the Seychelles a serious awareness of the importance of fisheries to the country which explains why she has a more elaborate policy on the subject.

In the region, therefore, a common characteristic could be discerned between countries with respect to their level of commitment in fisheries development. The Island States, Seychelles, Mauritius, and Comoro, without any significant land based agricultural activities have had a corresponding greater interest in developing their fishery resources than their counterparts with bigger crop based agricultural economies such as Tanzania, Kenya, Madagascar and Mozambique.

In any event the formulation of a policy is largely seen as a first major step in the direction towards this otherwise neglected sector. It has already been pointed out that Seychelles has on the average, the best statistical data base for its fishery resources in the region and thus also places her in a better position both in technical and economic stand points.

The adopted Seychelles Fisheries Policy entitled "The Management of Marine Resources for National Development" has as its major objectives six goals.²³

- i) To create the maximum amount of job opportunities;
- ii) To ensure the stable development of the

- industry;
- iii) To create the optimum linkages with other sectors of the economy;
 - iv) To maximize foreign currency earnings;
 - v) To conserve marine resource in order to ensure the long term viability of the industry;
 - vi) To establish Mahe as an important tuna centre for the Indian Ocean.

It is reported that this policy places "a great importance on stable development, as regards resources, investment and licencing options. In doing so it, it places a clear distinction between resources of the shelf, which are reserved for the exclusive use of the Seychelles nationals, and the EEZ outside the territorial waters, where foreign fishing will be encouraged."²⁴ The policy statement further spells out efforts to be undertaken in developing her artisanal fisheries sector by way of taking into account the countries socio-economic factors in motivating fishermen. Management of the near shore resources is said to be both by licencing and the encouragement of private investment.

As for the offshore resources the policy places emphasis on what is termed "fair long-term agreements with fishing enterprises, covered by state-to-state umbrella agreements." It sets to promote joint ventures and shore investments from foreign fishing interests. It further clearly provides that licencing of foreign fishing vessels "will take due account of the need to use Victoria as a base, its new fishing harbour and planned support infrastructure". It also commits Seychelles to a "leading role in the promotion of research, management and possibly surveillance activities". There are also spelled agencies responsible and mechanisms for training, "mobilization of technical and economic assistance, the provision of credit and the marketing of fish"

The approach taken by the Seychelles reveals the numerous areas of responsibilities and opportunities which the SWIO countries have to actively work for their

realization if their economic and development goals are to become a reality. It also attempts to address issues of regional importance and having a bearing on goals that are pursued by other members of the SWIO.

In terms of regional cooperation what is considered important has largely been confined to the fact that the countries have a limited ability to control and monitor exploitation of migratory species, limited ability to utilize the resource through proper handling, development and marketing, and limited capabilities of resource management.

These limitations constituted what immediately faced many of the SWIO countries as they attempted to develop management strategies for the exploitation of mostly a very large and unfamiliar area - the EEZ. For them the simplest way to protect social and economic benefits associated with this area was a declaration of their respective EEZ. This was seen as enabling them to place their authority over the area and thus control access to the resources that are known as being limited. Licensing of foreign fleets and joint ventures thus acquired a very unique significance in the efforts of these countries as a vehicle of realizing their developmental goals.

DELIMITATION: While all the countries of the SWIO region have extended their fisheries jurisdiction, even though not in a homogeneous way, the delimitation of their respective maritime boundaries springs as a problem affecting the desired fisheries management mechanisms. This is increasingly becoming a problem with the development of surface tuna fishing as an incentive for foreign exchange earnings stemming from the access agreements with foreign fleets.

The lack of clearly defined borders to the EEZ's of adjacent and opposite states poses two immediate problems. First, it gives rise to a possibility of denying a country the benefit it would otherwise have been entitled to but are now either credited to another state or to none at all. Secondly, it militates against building a reliable system of

data collection in terms of region and area where resources were obtained.

In this region only Reunion/Mauritius, Kenya, Mozambique and Tanzania have made positive efforts to delimitate their maritime borders though those boundaries remain incomplete. The Kenya/Tanzania boundary merely delimited their territorial sea on the basis of 50 nautical miles previously claimed. No further effort has been taken to clearly place the agreement in the context of the UN Law of Sea Convention. The Mozambique/Tanzania agreement is rooted on the UN Convention but defined the common agreement only up to some point in their respective EEZ's and is to be completed pending an agreement between Mozambique and Comoro.

The general situation is such that charts and boundary coordinates of the EEZ have unilaterally been published claiming the application of the median line between two neighbours. Given that there is no agreement on the plotting of the baselines from where the EEZ is measured, it would only seem at present that while this can only form the basis of the negotiations, a lot remains to be done in this respect.

The urgency of this problem for fisheries management stems from the fact that on the event of overlapping EEZ's of two or more countries a fisherman making catches in this disputed area will be unwilling to report to any country due to the real risk of being called to make payments to the two or three countries for the same fishing adventure. Even if report is to be made to one of the countries, the accuracy of the statistics so made may very likely suffer.

However, the fact that there are a number of other sectors equally sensitive to EEZ delimitation, especially now that several other countries in the region are engaged in petroleum exploration, and, the belief that there may exist potentially exploitable non living resources, could incline some countries to play a waiting game which, to the contrary can only complicate matters in future.

Suprisingly, even in the often acclaimed Forum Fisheries Agency (FFA) of the South Pacific Islands which, in recognition of the importance of the sea to their way of life and constituted themselves in, 1979, to a regional cooperation organization, have found it easier to relegate maritime boundary delimitation to "other priorities"²⁵ The provisional boundaries adopted by the Forum for fisheries purposes may, nevertheless, be a workable arrangement particularly in relation to statistical reports.

ACCESS BY FOREIGN FLEETS: It was observed in Chapter II that Article 62 of the UN Law of the Sea Convention requires the coastal state to promote the objective of optimum utilization of the EEZ, to determine her capacity to harvest the living resources of the Zone and, on the event it does not have the capacity to harvest the entire allowable catch, to allow access by foreign states to any allowable surplus. Like the Seychelles, virtually all countries of the region have made attempts in one way or another to secure some benefits from these resources on the context of the spirit of this provision of the Convention.

For these countries, resources of interest to the foreign fleets have largely remained shrimps and tuna. Unlike the west side of Africa - the region comprising the FAO Committee for Eastern Central Atlantic Fisheries (CECAF) and the International Commission for the South Eastern Atlantic Fisheries (Angola, Namibia & South Africa)(ICSEAF) comparisons of catches are generally believed to indicate resources are fully exploited in the later while the SWIO region offers a few exceptions where additional effort is warranted.²⁶ With the noted apparent decline in outlines from the east atlantic there has been an increasing shift of foreign fleets notably from French and Spanish Ocean and into the Indian Ocean resulting into a conspicuous increase of catches by foreign fleets which accounted for 62.3% of total marine catches from the SWIO.²⁷ Table 5.

The modalities through which these foreign fleets have found access in the region have generally been similar. However, the extent to which each country has obtained benefits has immensely differed. In characterising access modalities, Lawrence Christy suggested three broad choices available to coastal states which included licensing, joint ventures and prohibition.²⁰

While there were times when both Tanzania and the Seychelles alternated between prohibition and licensing, it seems now that most of the countries are more inclined towards licensing and joint ventures. In relation to licensing the major client in the zone appears to be the EEC and the target specie being predominantly tuna. A perusal of the five bilateral agreements between the SWIO coastal states and the EEC reveal interesting aspects as portrayed in Table 6

Evidently there are some financial benefits accruing to the countries but the disparity existing for the same species around about the same zone may only be revealing less than what is actually taking place. For instance, Seychelles is getting six times as much as Tanzania is getting for licensing only 40 tuna seiners while Tanzania is licensing not only 46 tuna seiners but 8 longliners as well. Comoro, lying in between, fares even less well for its 40 tuna seiners.

What may be in favour of Seychelles could be its fisheries policy whose implementation has not only seen the up-grading of its Victoria port facilities especially for fishing vessels, but also the investment in an infrastructure which has proven to be very conducive to the operation of ocean going fishing fleets.

Which is why, because many of these vessels would call on the Seychelles Port for bunkering, cold storage or transhipments it would not be easy or worthy the risk for any licensee to cheat on the Seychelles. However it would be profitable to obtain a higher number of licences from a country that has the least capability to check on the fishing

Table 6

Country	Agreement Duration	Total Compensation	Average Ecu/yr	Program Financing	Training	Licensing	Other
Comoro	3 yrs	900000	300000	500000		40 Tuna seiners	Possibility of other species
Madagascar	3 yrs	1800000 (equal to 12000 tonne/yr)	600000 (max. of 1000000 ecu)	900000 crustaceans 600000 highly migratory species	500000 5/yr	45 Ocean going freezer tuna seiners	
Mauritius	3 yrs	1200000	400000	480000 + 150000 for searching new fisheries	120000	40 tuna seiners 100 grt poleliner 1200 grt crustace over 7500 t/yr	Additional fee of 50 ecu on catches
Seychelles	3 yrs	6900000	2300000	2700000 including equipment for inspection services	300000	40 tuna seiners	Possibility of other species
Tanzania	3 yrs	1050000	350 000 for 7000 t/yr & 50 ecu per additional ton	430000	200000	46 tuna seiners 8 longliners	Possibility of other species

operations once licence is granted. No wonder transshipment reports recorded by the Seychelles seem continually on the increase and representing catches other than those allegedly made outside of the Seychelles' EEZ.²⁹ The risk here is that it could very well also represent catches within the Seychelles' EEZ.

Indeed only Seychelles amongst the SWIO countries can be said to have obtained significant gains from licensing foreign fleets. And these gains are more notable on the effect to the industry and the infrastructure it had generated for her economy. The EEC/Seychelles agreement has also a requirement for the licensed fleets to land part of their catches to the local canning industry such that it is reported that "around 300 Seychellois now work at on-shore installations because the Seychelles have become the chief transshipment harbour in the region."³⁰ The Seychelles, though, are apparently not aware where these transshipment catches are made from as they lack an adequate control system.³¹

Underlining the importance of surveillance and enforcement the SWIO countries were cautioned as early as 1984, of the limited surveillance capability that individually they can afford.³² Regional cooperative schemes such as the Forum Fisheries Agency of the South Pacific Islands was recommended as being not only cost effective but that it offers a better scheme of protecting the common interest they have in granting access to foreign fleets. A cooperative arrangement would, apart from harmonizing access conditions, also streamline procedures for data reporting and hence a reliable data bank for the region.

There is enough evidence to support the fact that any licencing regime that does not have adequate surveillance and enforcement capability should not expect satisfactory compliance of its regulations. In a study about compliance of fishing regulations and enforcement conducted by Dr. Sutinen and his associates at the University of Rhode Island it was shown that the higher the probability of being caught and

convicted, the lower the rate of violation and confirmed the fact that enforcement is a clear deterrent.⁹³ This aspect obtains extensive analysis in "Measuring and Explaining Noncompliance in Federally Managed Fisheries"⁹⁴ where in examining what is termed the Theory of Compliance Behavior, the authors argue that "on the whole, individuals act in their own best interest, choosing alternatives that are expected to bring them the greatest gain or the least loss". This in many ways confirms personal experience with fishermen in Newquay and Boulogne when, in relation to mesh sizes and area zoning, most confided that they were more inclined to contravene the regulations which rob them the ability to service their loans. With slack enforcement, the tendency for fishermen has always more often becomed towards taking the risk. Under reporting within the SWIO tuna catches must therefore be a reality which, under the circumstances, is just unavoided.

In relation to the fees payed to the licensing countries the Workshop on Licencing and Control of Foreign Tuna Fishing reviewed three types of fee structures, namely, lump sum payment; taxes on effort; and, taxes on royalties on catch.⁹⁵ The SWIO countries have as per Table 7 shown a preference for the lump sum method due to the simplicity of its administration and assured minimum payments for a given period of time. Weaknesses attendant to enforcement, resource assessment and general managerial capabilities of the countries have equally dictated this approach which is not necessarily the best approach for the regional developmental objectives. The absence of a common approach by these countries both in terms of licences and surveillance and enforcement will, with the exception of the Seychelles, always militate against the bulk of their interests.

JOINT VENTURES: For the SWIO countries the importance of joint ventures and licensing arrangements arises basically from the fact that they are, like many developing countries, largely dependant on foreign participation to exploit part of

their fisheries resources. Admittedly, this is also due to the fact that these countries have only taken up to the developing of their industrial fisheries mostly after the 1982 UN Convention. The industry is therefore relatively small.

The reliance on foreign participation on their fisheries sector is therefore a reflection of a general lack of capital, infrastructures, markets, technical and managerial skills and other important skills necessary for the development of their industrial fisheries, especially in relation to the relative complex and capital intensive exploitation of the off-shore resources.³⁶

Not surprising therefore the SWIO countries have one after another strived to attract foreign investors on the hope that the foreign partner will be able to improve their incapacibilities and secure an undertaking resulting in mutual benefits to the two parties and particularly to the economic development of the host partner.

It is in this context that countries in the region, such as Tanzania, have actively resorted into the formulation of legislation intended to promote and protect foreign investment, including ventures in fishing. It is also true, however, that the experience of joint ventures in the SWIO countries is relatively new. It may be too early to make a critical evaluation of such partnerships but, more importantly, texts of such agreements are not readily available due to claims of confidentiality.

Nevertheless, Greboval offers a very illuminating study of the potential benefits and pitfalls related to joint ventures.³⁷ Due to the fact that the parties have both complementary and conflicting interests, joint ventures can be disastrous. Great caution is advised. It is observed that they could be "more complex to evaluate, negotiate and implement than any forms of foreign participation and involve a greater element of risk, as losses, as well as profits, will be 'shared' under such an arrangement." That, "the risk

involved relates both to the very nature of any fishing operation and to the many, more or less sophisticated, financial manipulations which the more experienced partner may use to evade a fair sharing of any profit or losses.³⁸

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CHAPTER V.

Conclusions And Recommendations.

Sustainable Development: A re definition.

"The management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such development conserves land, water, plant and genetic resources, is environmentally non-degrading, technologically appropriate, ecologically viable and socially acceptable".¹

5.1 A Summary of the Issues.

The study has made an attempt to examine Tanzania's needs and efforts towards the development of her marine fishery resources and the challenges this poses in the context of general maritime administration. It has observed that the ocean environment surrounding Tanzanian coastal waters is characterized by a pronounced lack of upwelling areas which, when combined with the narrow continental shelf adjoining her coast, results in a limited productive area and consequently an offshore zone with limited resources. Nevertheless, the study has also shown that this zone supports significant fishing activity the bigger part of which constitutes a larger artisanal sector accounting for over 80% of Tanzania's marine catch landings. The same grounds have also supported a growing industrial fleet aimed at maximizing the benefits of Tanzania's fishery resources especially in relation to foreign exchange earnings.

Because what has been characterized as the Governments

objectives amounts, among other, to an overall effort to increase food supplies, improve employment opportunities and earning foreign exchange, the strategies and directives for fishery development adopted by the Government for the implementation of these objectives have revealed constraints largely due to inconsistencies with the desired objectives.

Nonetheless, a considerable potential for Tanzania's fishery development has been observed, but equally substantial are the complex management factors necessary for the efficient exploitation of the resources and the establishment of a successful fishing industry. Because the exploitational goals seek to satisfy social objectives and yet ensuring profitability for economic development based on resources that are renewable, the need to balance these interests, amidst pressure for quick and visible results, has proven to be both challenging and largely damaging. In relative terms therefore, given the Government's development objectives, the fishery sector provides a minimal contribution while it has the potential to have done a lot better. Consequently, what was said of Ethiopia could very well apply to Tanzania: " a poor developing country is thus an example of one which is currently unable to utilize its natural resources at a time of its great need - domestically as a source of protein or externally as a source of foreign exchange."²

The predicament facing Tanzania is , incidentally, not one of ignorance in terms of what needs to be done but one rooted in the failure of the political machine to appreciate the essence and potential role which the sector, given the right inputs which are not entirely lacking, could contribute to the general welfare of the nation though not necessarily in the short term.

On the whole, however, Tanzania, like most nations following the Law of the Sea Convention, has shown the necessity of obtaining skills and technologies relating to the fishery sector as well as the adoption new policies and

strategies for the management and development of this sector which was until recently the most neglected. In the context of this neglect, it turns out, the artisanal fishery has been the most underdeveloped segment of all the marine sectors.

As a result, the fishery sector seem to have been undermined by the following factors:

For the artisanal fishery, the outmoded technology has been its greatest drawback. While the sector has continuously expanded in terms of employment of fishermen, the recorded catches have not matched up to this increase. This may either imply that the resources are over fished or at least reached their MSY, or that, the traditional boats used a highly inefficient for economical fishing purposes.

The existing poor infrastructure has also been a major hindrance. The lack of appropriate landing sites, storage and marketing facilities have placed operational and strategic limitations to the potential expansion of the open to the artisanal fishery. The fact that the fishermen have to do most of the marketing themselves or rely on vendors has equally contributed to this outcome.

Further, equally critical to the development of the Tanzanian fishing industry including its artisanal sector is a clear absence of policies or measures that are clearly designed to have a multiplier effect on the operation and growth of the industry. There is no apparent effort to target the sector as a catalyst for other downstream industries that fisheries can potentially spur. The lack of a strong linkage in the economic activities in the country has attracted a fairly slacken response to the priority accorded the sector.

Another important aspect in this regard for the artisanal and industrial sector has been the absence of an effective managerial regime both for Tanzania's inshore and offshore fishery resources. This has two dimensions, one on the resource and the other on the organization. On the resource, Tanzania suffers from an inability of estimating the historical and current state of her stock. Given what is

even officially acknowledged as considerably unreliable statistical information, how does she proceed to manage her fishery resources so as to avoid depletion and possible eventual collapse? If this has been a constraint, the existing organization hasn't been of help either. The structural deficiencies both legal and administrative have severely impacted on the ability of the administration to formulate policies and implement measures which would have assisted in bringing about change in the manner management has attempted to respond to sectoral needs for development.

While this has given rise to the need for strategies that are coordinated at the local, provincial and national level, the existence of commercially viable tuna resources has demanded yet a serious look into a regional approach encompassing Comoro, Kenya, Madagascar, Mauritius, Mozambique, Seychelles and Somalia.

Most of the limitations facing the Tanzanian fishery sector are seen, to a large extent, about duplicated in the other members of the region. Consequently there exists a general regional wide deficiency in resource assessment, policy formulation and implementation and especially weaknesses in enforcement of regulations. Like most of these countries, Tanzania has also suffered apparent disadvantages in view of compensation obtained from foreign participation. Seychelles, on the other hand, appears to be in a better position from which Tanzania may obtain some useful insights.

Marine delimitation of the regions EEZ's presents itself as an issue the countries have to face up to as they build up a framework for regional cooperation in the conservation and exploitation of their ocean resources. Countries negotiate and license foreign fleets individually while the resources a subject of these licenses are shared stocks or highly migratory species. For these shared stocks there are no common management or regulatory regime. All the countries suffer from a highly inadequate surveillance and control capability of the fishing operations and consequently there

is no effective enforcement framework. All the countries claim jurisdiction over the fishery resources but have generally very little knowledge about the magnitude of the resources.

It is against this background and setting that Tanzania and the countries of the South West Indian Ocean are striving to develop their fishery resources and in the process provide food for their people, raise their standard of living and generate economic development for themselves.

5.2 The Alternatives.

The sophistication of fishing technology and the accompanying increase in the demand for fishery resources led to the intensified exploitation of fish near coasts and this in turn led to the widespread, though uncoordinated, decision by the governments of the South West Indian Ocean (SWIO) to expand their jurisdiction further outwards. This was characteristic of many States. The aim was to protect the in the coastal zones by excluding long distance fleets. The Third United Nations Conference on the Law of the Sea thus created a zone *sui generis*, known as the exclusive economic zone (EEZ) over which a coastal state would exercise exclusive jurisdiction and sovereign rights for the exploration and exploitation of the natural resources.

Knowing that, at least for most developing states, the initial interest was to enable the countries to secure authority over an extended area of their waters, the Convention resulted in the creation of a territorial regime which gave coastal states enough power to control and utilize the natural resources of that zone - the EEZ. Consequently, under article 56 of the Convention, whereby coastal states are granted sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources of the EEZ, considerable area and resources are placed under the jurisdiction of these states.

This dissertation has stressed the point that for Tanzania and the other coastal States of the SWIO, if any benefits are to accrue from their living resources of the ocean, there are two basic requirements. First, there must be the necessary manpower to explore and interpret information about the state of the resource. This presuppose different levels of training in a manner that corresponds to the sectoral. Secondly, the harvesting of the resources should not be an activity that terminates with fish landing and marketing at the beach or merely exported to foreign markets

in an unprocessed form. It must be a planned occupation and managed in a manner which integrates it into the general planning and management of the national economy.

Such an integration would entail, among other, maintaining full control over the process in which information about the resource is collected and updated. Training is essential in this context and also in terms of meeting identified sectoral goals at each and every level. Within the framework of the industry both artisanal and industrial, administrators must be able to perceive the industry in the context of the countries socio-economic activities, that is , to see the possibilities for diversification while at the same integrating these activities into the national economy.

In the examination of the organizational structure for fishery resource management in Tanzania it became important to see whether, in principle, the existing structure covered and made efficient use of all required decision making and implementation capabilities. It was evident that as presently structured the organization is not conducive to the development of the fishing sector. However, because some institutional structure exists that has broadly, though in a fragmented way, dealt with the management of fishery resources, what is needed therefore is not only competence in the broader issues that concern fisheries but a more systematic administrative structure which would do away with the hitherto duality existing at the district, regional and national levels. Consequently, there is a strong reason to demand that the functions of each of the agencies dealing with fishery resources should be closely coordinated at each level with other interested agencies, but eventually, only the Ministry responsible for fisheries, namely, Natural Resources, Tourism and Environment, should be the key and central agency responsible for formulation of policy and overseeing its coordination and implementation.

Tanzania is still in the process of formulating its

national fisheries policy, while lack of the same constitutes an important obstacle, the fact that the existing institutional arrangements would seem to remain intact even after the new policy places in doubt the possibility for effective implementation based on ineffective structures. It would thus be a failure should the Government attempt to execute its new policy amidst institutional structures that have clearly proven to be a hindrance.

It has also been observed, in relation to Tanzania, that research about the resource leaves a lot to be desired. Although there are some modest capabilities that need to be recognized of our researches, research institutions and training schools, the impact these have had on the management of the resource has been only minimal. However, what seems to be the major failing pertaining to the direction and scope of research activities undertaken is not so much about the content but more about focus. There is more in Tanzania that has been researched and is known about resources that are of high value or of interest to commercial fleets such as tuna and shrimps than those that are considered as merely of general interest to the artisanal fleet. This contributes to an insensitivity which lacks objectivity in an approach to developmental issues affecting the fishery sector in as much as it fails to an overall assessment of the resource from its biological, economic and social implications. It also loses concern to the considerable contribution made by the artisanal fishery to the national economy.

The extension of territorial waters under the UN Convention, resulting in overlapping zones, common stocks and the existence of highly migratory species, has created circumstances giving rise to the need for cooperation amongst countries. While delimitation need be accorded priority, Tanzania and the other countries in the region, should see in these circumstances the possibilities would not otherwise be available to individual countries.

There are significant advantages if the necessary

political will can be marshaled for common achievements rather than dwelling in narrow national interests which in the long run are only counter productive. There is no way out for a realistic management and conservatory regime for shared stocks other than a joint approach to management regulations, surveillance and control efforts. This will not only allow for economies of scale in the management demands required but also offer common standards for the fishery in terms number, of vessels allowed into the region, gear specifications and general compliance requirements. It should also provide a framework which will promote and assist in the collection of national statistics, biological data, interchange of information and the opportunity to learn from each others experience. It will further provide a forum enabling the SWIO Countries to jointly negotiate access of their resources by foreign fleets. When foreign states are approaching individual countries as a group, these countries need to reciprocate by meeting them and negotiating as a group as well. Which is why the SWIO Project should not be allowed to collapse after FAO terminates its funding at the end of the project cycle. The members must devise ways of funding this project from license fees or other member contribution mechanisms.

Lastly, there is need to attempt even the unconventional. In Europe, particularly within the EEC, there are efforts to reduce fishing into their respective fishery by scrapping fleets. Owners willing to scrap their vessels are provided a financial package as compensation and also as a way to enable them to relocate into a different undertaking. Countries such as Tanzania should explore the possibility of obtaining some of these vessels, if still seaworthy, through its bilateral relationship with the EEC or the individual member concerned. This may be used to enhance the capability of the local fleet to go further ashore where the resource potential is assumed to be higher.

5.3 Conclusions and Recommendations.

Planning for the management and development of a country's fishery resources is partly a process of reflecting interest and policy about these resources and of incorporating them into the national economy. It requires, first, the commitment of the Government to enter into this field and, second, the employment of a proper institutional arrangements for the administration and management of these resources.

The role and the commitment of the Government towards the formulation and execution of a policy that works to serve the developmental goals of the fishery sector cannot be over emphasized. It is the Government that has authority and power to act as a link between different groups and interests within the country. It is the Government that sets up and spells out various administrative structures for the management of the resources. It is only the Government that can enter into negotiations both with the adjacent and opposite States in matters pertaining to the exploitation and regulation of the resources and, in relation to conditions of access by foreign fleets. It is the Government that must take the first concrete step.

Given the need for the Government to adopt and promote new strategies for the management of Tanzania's fishery resources, so as to incorporate them into the country's development process, the following recommendations are made:

1. LEGISLATION.

While Tanzania has enacted the TS & EEZ Act to give domestic legal effect to the provisions of the LOS Convention, that Act is only an umbrella legislation. Further legislative changes are needed for undertaking the required implementation of the Convention. In this regard, there is a pressing need to establish a legal basis for a fisheries management regime, to provide for;

- i) Clearly identifiable administrative structure for both Tanzania Mainland and Zanzibar and spelling out modalities for cooperation and coordination.
- ii) Harmonization and updating of existing laws and regulations.
- iii) The enactment of regulations providing for conservation, management and development of the fishery resources.
- iv) The prohibition of licenses which provide for carte blanche access to "all Tanzanian fishing grounds" but designating specified areas instead.
- v) A definition of nationality with a clear distinction between a "national" and a "non-national", a "local" and a "foreign" fishing vessel. With local or nationality being more than mere registration.
- vi) Licensing of all fishing vessels including canoes of whatever description, provided used for commercial fishing and, attaching conditions relating to mesh sizes, area of fishing, data return etc.,
- vii) Formulating and instituting by all the relevant sectoral departments, a TS and EEZ Act Implementation Action Plan, for the implementation of the LOS Convention.

2. ADMINISTRATION.

An assessment of the existing institutional and administrative capacity for fishery resource management reveals inadequacies which must urgently be rectified for purposes of harmonizing policy formulation and execution. In this regard;

- i) The Fisheries Division of the Ministry responsible for fisheries should act as the focal point for policy formulation and development of the resource.
- ii) Fisheries staff should be accountable to the Division and Ministry responsible for fisheries and their training coordinated by the same.
- iii) Budget allocation to the Ministry responsible for

fisheries development should be under the sole discretion of fisheries authorities for fishery development purposes and only to be reallocated with their express consent of these authorities at their respective levels - district, regional and national.

3. RESOURCE ASSESSMENT and MANAGEMENT POLICY.

The magnitude and extent of the fisheries resources of Tanzania are not well known. However, there is strong indication that some specific species are over exploited, or exploited to their maximum sustainable yield. Recognizing that stock assessment is essential for resource management and development planning, the following need be done;

- i) The entire sector of artisanal fishermen should be subjected to a regulatory system of declaratory reports in relation to their catches and landings.
- ii) In the short term an effective monitoring scheme for stocks that are important to the socio-economic interests of the fishery should be instituted, accompanied by the necessary training for the monitors.
- iii) In remote areas, individuals with basic formal education should be enrolled and trained to act as local monitors. Some incentives should also be considered.
- iv) Data collection and processing must be given a higher priority so as to present reliable resource information for effective management and development planning.
- v) The formulation of the country's Fishery Sector Policy is long overdue. This questions the resolve of the Government. The desired sector objectives and the management and development measures to be taken need to be clearly specified. Integration of these objectives into the overall national development plan

must be ensured.

4. STRATEGIES FOR DEVELOPMENT.

The artisanal sector accounts for over 80% of all catches landed from Tanzanian living marine resources and its contribution from the fresh water fishery being even more greater. The sector provides an important source for food and employment and yet it remains largely undeveloped. There is thus a need develop it and to examine the harm that traditional fishing may be doing to the resources while introducing measures which can improve efficiency in the fishing technology and uplift the living conditions of the fishing communities. In this context, the following are recommended:

- i) Re-examination of the fishery sector in the context of a marine industries framework thus establishing and promoting linkage between sectors whose growth would induce development in other sectors of the industry or economy.
- ii) Establishment of financial (credit) schemes for the fishery sector with special emphasis on the artisanal fishery.
- iii) Firm Government commitment to a more effective administration led by a policy that is developmental oriented and designed to create a favorable infrastructure for the process - research, planning, investment, harvesting, marketing, distribution, etc.,
- iv) Government to ensure that basic inputs to the fishery such as nets and other fishing gear are made available to the fishing communities as a way of combating destructive and illegal fishing methods.
- v) Assist the capability of artisanal fishermen to go far offshore (motorizing) where resources are estimated to be greater.

5. INFRASTRUCTURE DEVELOPMENT.

Admittedly, existing infrastructure has been a major obstacle and has restrained development of both artisanal and industrial fleets, and the industry in general thus denying the country potential benefits which could be derived from its fishery. To reverse this situation, the following are recommended:

- i) In order to reduce post harvest losses which are especially high in the artisanal fishery, plans should be made to up grade, where appropriate, or provide for handling, processing, transport, distribution and a marketing framework within which the industry can operate, and, in the process provide food to distant areas and added incomes to the fishermen.
- ii) In view of the Governments new investment policy, existing facilities do not offer an attractive environment for large scale industrial fleets. The development of a fishing port either in Zanzibar or Dar-es-salaam to provide for handling facilities such as ice production, storage, transshipment etc..
- iii) Establishment of training programs to fishermen about product handling for health and commercial considerations. Municipal health authorities and the Fishery Department to coordinate this engagement.
- iv) Timely availability of credit and inputs.

6. REGIONAL AND INTERNATIONAL CO-OPERATION.

In the geographical setting which Tanzania is located, the extension of territorial waters has resulted in overlapping fishing zones (EEZ), and the existence of related stocks and highly migratory species which, in turn, have increased the relevance for regional and international cooperative arrangements for the conservation and exploitation of the resources as envisaged by the UN Law of the Sea Convention. In this regard, the following are

recommended:

- i) Tanzania should strive to ensure that the SWIO Project does not collapse but structured to promote and assist national research programs, data collection and appropriate methods of control and improvement of the fishery resources.
- ii) Establishment, within the SWIO Countries, of a harmonized access regime on conditions of registration, licensing of foreign fleets, and charges applicable thereto.
- iii) Institution of a programme for joint negotiations for licensing of foreign fleets in the South West Indian Ocean.
- iv) Establishment of a common and coordinated surveillance and enforcement regime which can incorporate the respective countries navies and air forces under specified civilian obligations.
- v) Delimitation of the regions EEZ to be given priority, but in the short term, temporary designation of boundaries for fishery statistical purposes be resorted to.

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THE UNITED REPUBLIC OF TANZANIA



No. 3 OF 1989

I ASSENT,

A. H. MWINYI,
President

12TH JUNE, 1989

An Act to provide for the implementation of the Law of the Sea Convention, to establish the territorial sea and to establish an exclusive economic zone, of the United Republic adjacent to the territorial sea, and in the exercise of the sovereign rights of the United Republic to make provisions for the exploration, exploitation and conservation and management, of the resources of the sea and for matters connected with those purposes

[.....]

ENACTED by the Parliament of the United Republic of Tanzania.

PART I

PRELIMINARY PROVISIONS.

1.—(1) This Act may be cited as the Territorial Sea and Exclusive Economic Zone Act, 1989, and shall come into operation on such date as the Minister may, by notice in the *Gazette*, appoint.

Short title and commencement

(2) This Act shall extend to Zanzibar.

2. In this Act, unless the context otherwise requires—
“Exclusive Economic Zone” means the marine zone described under section 7 of this Act;

Interpretation

“Law of the Sea Convention” means the law of the sea convention of 1982 whose relevant provisions are attached as a Schedule to this Act, and which provisions this Act seeks to implement:

"a marine authorized officer" means an authorized officer mentioned under section 13;

"Minister" means the Minister responsible for Foreign Affairs.

PART II

TERRITORIAL SEA

The Ter-
ritorial
Sea

3.—(1) There is established a marine zone to be known as the Territorial Sea.

(2) The breadth of the Territorial Sea of the United Republic shall comprise of those areas of the sea extending up to 12 nautical miles measured from the Coastal low waters line as determined under section 5 of this Act.

Internal
waters

4. The internal waters of the United Republic of Tanzania include any areas of the sea that are on the landward side of the baseline of the territorial sea of the United Republic.

Baseline
of territo-
rial sea

5. The baseline from which the breadth of the territorial sea of the United Republic is measured shall be the low-water line along the coast of the United Republic including the coast of all islands, as marked on a large-scale chart or map officially recognized by the government of the United Republic.

The sea-
bed and
internal
waters
vested in
govern-
ment

6. The seabed and subsoil of submarine areas bounded on the landward side by the low-water mark along the coast of Tanzania and on the seaward side by the outer limits of the territorial sea of the United Republic shall be deemed to be and always to have been vested in the government of the United Republic.

PART III

THE EXCLUSIVE ECONOMIC ZONE OF THE UNITED REPUBLIC

The Exc-
lusive
Economic
Zone

7.—(1) There is established contiguous to the territorial waters, a marine zone to be known as the Exclusive Economic Zone.

(2) Subject to subsection (3), the exclusive economic zone shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial water is measured.

(3) Notwithstanding subsection (1), where the median line as defined by subsection (4) between the United Republic and any adjacent or opposite state is less than 200 miles from the baselines of the territorial waters, the outer boundary limit of the Zone shall be that fixed by

agreement between the United Republic and that other States, but where there is no such agreement, the outer boundary limit shall be the median line.

(4) The median line is a line every point of which is equidistant from the nearest points of the baseline of the territorial waters, on the one hand, and the corresponding baselines of the territorial waters of any adjacent or opposite state as recognized by the Minister, on the other hand.

8.—(1) The Minister shall cause the boundary lines of the Zone to be marked on a sealed map or chart, and that map or that chart shall be judicially noticed.

Making
boundary
lines of
Zone on
Charts or
Maps

(2) The Director of Land Surveying in the Ministry responsible for lands, shall keep safe custody of the map or chart referred to in sub-section (1), and anybody may, at reasonable time inspect that map or chart, or purchase a certified copy thereof.

9. There is vested in the government of the United Republic—

Rights in,
and juris-
diction
over,
Zone

(1) 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 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 currents and winds;

(2) Jurisdiction with regard to—

- (i) the establishment and use of artificial islands, installations and structure;
- (ii) marine Scientific research, and
- (iii) the protection and preservation of the Marine environment;

(3) Other rights in and jurisdiction over, the zone recognized under international law;

10.—(1) Subject to this Act, no person shall, within the zone, except under or in accordance with an agreement with the government of the United Republic:—

Exploita-
tion of re-
sources

- (a) explore or exploit any resources thereof;
- (b) carry out any search or excavation;
- (c) conduct any research;
- (d) drill in or construct, maintain or operate any structure or device;
- or
- (e) carry out any economic activity.

(2) This section shall not apply to fishing by a citizen of the United Republic or from a vessel registered in the United Republic.

(3) Any person who contravenes the provisions of this section shall be guilty of an offence and shall, on conviction be liable to a fine of no less than US dollars two hundred and fifty thousand or to imprisonment for a term not exceeding five years, or to both such fine and imprisonment; and in addition, the court may order the forfeiture of any vessel, structure, equipment, device or thing in connection with which the offence was committed.

Freedom of navigation, over flight and laying of cables etc.

11. The United Republic shall recognize within its exclusive economic zone the right of other States, whether coastal or land-locked, to freedom of navigation and over flight, the laying of cables and pipelines and other uses of the sea relating to navigation and communication, such as are recognized under international or embodied in a bilateral, agreement.

Application of certain laws

12.—(1) Any law relating to Fisheries, National Environment Management, Merchant Shipping, Petroleum and mining shall apply in relation to the exploration of natural resources and the question of Marine pollution in the territorial and exclusive economic zone;

(2) The Minister may, where it is desirable so to do, and with the consultation with the appropriate authority and with the approval of Parliament, extend the application of any legislation to the territorial and exclusive economic zone.

(3) Where the application of any law is extended to the territorial and exclusive zones, Parliament may, where necessary, repeal and re-enact that law, amend it, or make such modifications in that law such as are necessary to make that law consistent with its application thereto.

(4) For the purpose of this section "appropriate authority" in relation to a law whose application has been extended to the territorial waters or exclusive economic zones, means the Minister responsible for the administration of that law.

PART IV

AUTHORIZED OFFICERS

Au-
thorized
officers

13. For the purposes of this Act, the following persons are designated authorized officers—

- (a) fisheries officers of the Government Ministries responsible for fisheries;
- (b) members of the Defence Forces;
- (c) members of the Police Forces;
- (d) officers of the Customs and Sales Tax Department;
- (e) Kikosi cha Kuzuia Magendo, otherwise commonly known as "KMKM";
- (f) any other person approved by the Minister.

14.—(1) An authorized officer may, in performing his duties, exercise all the powers conferred on him by this Act in respect of—

Powers of
Au-
thorized
Officers

- (a) a Government vessel or structure that is at sea or in port; or
- (b) a foreign vessel or foreign structure that he reasonably suspects of being used in connection with fishing or any other activity carried on in contravention of this Act or the regulations.

(2) In the performance of his duties under this section, an authorized officer may—

- (a) reasonably call on any person to assist him;
- (b) use such forces as is reasonably necessary;
- (c) require any person to do anything that appears reasonably necessary for the purpose of facilitating the performance of those duties;
- (d) order that any vessel or structure be stopped;
- (e) board any vessel;
- (f) search or examine any vessel or structure or any fish equipment or thing on board thereof;
- (g) require any person on board a vessel or structure to produce any document or thing relating to that vessel or structure or the persons on board thereof.

(3) An authorized officer who has reasonable grounds to suspect that an offence has been committed under this Act or the regulations by any person, including any person on board a vessel or structure, may, without warrant or other process—

- (a) seize the vessel or structure together with any fish, fishing gear or other equipment suspected of being used in the commission of the offence; or

(b) detain the person he suspects.

(4) Where a vessel, structure or thing is seized or a person is detained under subsection (3) an authorized officer shall, where possible, take the vessel, structure, thing or person as soon as practicable to the nearest port and within a reasonable time cause the person detained to be brought before a Magistrate's court to answer a charge in connection with the offence that gave rise to the seizure and detention.

(5) A court may order that any vessel, structure, fishing gear or other equipment, device or thing seized under subsection (3) be forfeited where the owner thereof is unknown and no claim there to is made within one month of the seizure under that subsection.

15.—(1) An authorized officer may, to avoid spoilage or decay of any fish he seizes under section 14, sell that fish in such manner as a fisheries officer of the Ministry responsible for fisheries directs.

Sale of
fish likely
to spoil

(2) All moneys resulting from a sale of fish under subsection (1) shall be paid into the Consolidated Fund.

(3) An authorized officer who makes a sale of fish under subsection (1) shall give to the person from whom he seizes the fish a receipt containing:

- (a) the date of the sale;
- (b) the quantity of fish;
- (c) the amount realised by the sale,

and the receipt shall be signed by the officer.

(4) Where a court dismisses a charge against a person brought before it under section 14, it shall, in any case where the fish in the possession of that person was sold, order compensation not exceeding the net amount realized by the sale to be paid to that person.

(5) Compensation payable under subsection (4) shall be charged on and paid out of Consolidated Fund.

Exemption from liability. 16. No liability shall attach to the United Republic, an authorised officer in respect of acts done by that officer in good faith in the performance of his duties under this Act.

PART V

OFFENCES AND MISCELLANEOUS PROVISIONS

General offences

17. Any person who—

- (a) assaults, resists, obstructs or intimidates an authorised officer or any person, assisting him in the execution of his duty;
- (b) uses indecent, abusive or insulting language to an authorized officer in the execution of his duty;
- (c) interferes with or hinders an authorized officer in the execution of his duty;
- (d) by any gratuity, bribe, promise or other inducement, prevents an authorized officer from carrying out his duty;
- (e) Without the authority of an crime authorized officer with any articles seized under section 14;
- (f) contravenes any provision of this Act for which no penalty is provided or the regulation,

shall be guilty of an offence and shall, on conviction be liable to a fine not less than USS 100,000 or to imprisonment for a term not exceeding two years, or to both such fine and imprisonment and, in addition the court may order the forfeiture of any vessel, structure, equipment, device or thing in connection with which the offence was committed.

Return of property seized

18. Subject to the provision of section 15, a court may order that property seized under subsection (3) of section 14 be returned to the person from whom it was taken or to a person named by that person where—

- (a) the court dismisses a charge brought against that person under this Act or the regulations, and it is of the opinion that the property can be returned consistently with the interest of justice;
or
- (b) no charge has been brought against any person within a reasonable time after a seizure has been effected under that subsection.
19. The Minister may make regulations generally for carrying into effect the provisions of this Act, and in particular respecting—
- (a) any activity relating to the exploration or exploitation of the Zone;
(b) any activity relating to the economic exploration or exploitation of the Zone;
(c) the authorization, control and regulation of scientific research in the Zone;
(d) the safety and protection of structures or devices in the Zone;
(e) the preservation of the marine environment of the United Republic and the prevention and control of pollution thereto;
(f) the regulation of the conduct of any person in or upon the Zone;
(g) the conservation measures to protect the living resources of the sea.
20. The Proclamation published as Government Notice No. 209 of 1973 is hereby revoked.
- (a) the regulation of the conduct of any person in or upon the Zone;
(b) the conservation measures to protect the living resources of the sea.

Regulations

Government Notice No. 209 of 1973 Revoked

SCHEDULE

PART II

TERRITORIAL SEA AND CONTIGUOUS ZONE

SECTION 1

GENERAL PROVISIONS

Article 2

Legal status of the territorial sea, of the air space over the territorial sea and of its bed and subsoil

1. The sovereignty of a coastal State extends beyond its land territory and internal waters and, in the case of an archipelagic State, its archipelagic waters, to an adjacent belt of sea, described as the territorial sea.
2. This sovereignty extends to the air space over the territorial sea as well as to its bed and subsoil.
3. The sovereignty over the territorial sea is exercised subject to this Convention and to other rules of international law.

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