


FISHERY COUNTRY PROFILE	Food and Agriculture Organization of the United Nations	FID/CP/MOZ
PROFIL DE LA PÊCHE PAR PAYS	Organisation des Nations Unies pour l'alimentation et l'agriculture	 September 2007
RESUMEN INFORMATIVO SOBRE LA PESCA POR PAISES	Organización de las Naciones Unidas para la Agricultura y la Alimentación	

THE REPUBLIC OF MOZAMBIQUE

1 General geographic and economic data

Area:	801 600 km ²
Coastal line	2 700 km ²
Water area (inland):	13 000 km ²
Population (2006):	20.97 million
GDP current (2006):	6.83 billion \$US
Agricultural GDP (2006):	28% of GDP
Fisheries GDP (2006):	4% of GDP

2 Fisheries data

2003	Production	Imports	Exports	Total Supply	Per Caput Supply
	tonnes liveweight				kg
Fish for direct human consumption	89 486	15 820	10 742	94 559	5.0
Fish for animal feed and other	4	-	-	-	

purposes					
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Estimated Employment (2005):	
(i) Primary sector (including aquaculture):	90 000
(ii) Secondary sector:	
Gross value of fisheries output (2005):	80 million \$US
Trade (2006):	
Value of fisheries imports:	31 776 000 \$US
Value of fisheries exports:	96 638 000 \$US

3 Fishery areas and main resources

Mozambique is endowed with fairly rich fisheries resources, both marine and freshwater.

The marine waters cover an area of about 100 000 km² with an exclusive economic zone (EEZ) of 200 nautical miles while inland waters cover an area of about 13 000 km².

The marine fisheries resources are mostly located in the two major shelves, the Sofala Bank in the center and the Delagoa bight in the south. The main fishing areas are located at the Sofala Bank, Inhambane, Vilankulos, Chiluanne and Beira.

The most important marine species include deep water crustaceans

- **Crustacean** (prawns, deepwater shrimp, crayfish, lobsters and crabs)
- **Marine finfish** (demersal and pelagic species mainly grouper, snapper, emperor and sea bream also high migratory tuna species of yellow fin, big eye and albacore, swordfish and shark)
- **Cephalopods and Molluscs** (squid, octopus, sea cucumbers, bivalves)

Inland: The freshwater fisheries are located in Lake Malawi/Niassa and Lake Cahora Bassa. Freshwater fish include tilapia and the small pelagics, local known as Kapenta.

The most valuable stocks of prawn, demersal fish and kapenta, have been assessed to be highly or fully exploited while the remaining including large and small pelagic are lightly exploited or underutilized in remote areas along the coast. Prawns are the most important species for the fishing sector in Mozambique and are caught primarily in the Sofala Bank area. Deep-water prawn fishing is still not well developed.

Registered catch Industrial and semi-industrial (2001- 2005)

Sources: Ministry fisheries, Mozambique

Fish Resources	2001	2002	2003	2004	2005
Prawns (Shallow Water Shrimp)	2230	550	1075	484	660
Crabs	9762	9000	8690	8106	8539
Deep Water Shrimp	47	40	81	184	158
Crayfish	9738	8500	1225	993	149
Squids and Octopus	76	60	131	195	165

Kapenta	7,076	9,500	10,978	18,760	12,991
F. Acomp.	1,080	1,450	1,608	1,354	1,830
Total	20,501	22,185	23,112	30,210	26,248
Tuna	3,096	3,000	7,450	14,783	5,396

Aquaculture: The development of aquaculture production of shrimp, bivalves, molluscs and tilapia is actively promoted by the government. Both freshwater and marine aquaculture benefits from the diversity of the natural environment and the availability of suitable native species for farming. Therefore excellent conditions exist in the country for development of aquaculture, particularly farming of prawns, ussels, algae, pearl,tilapia, seaweed, shrimps, bivalves (oysters) and crabs.

While freshwater culture is mainly focusing on integrated systems of fish farming for food security in the country, marine aquaculture is more broadly oriented towards both low cost protein supplies and high-value products for exports. Particular attention is given to marine prawn culture because of its economic importance for export markets.

MOZAMBIQUE'S TOTAL FISHERIES PRODUCTION (MT)

Source: FAO FISHSTAT PLUS

Year	Capture	Aquaculture	Totals
1994	27,456	116	27,572
1995	26,913	36	26,949
1996	34,915	4	34,919
1997	39,703	0	39,703
1998	36,677	0	36,677
1999	36,175	0	36,175
2000	37,729	0	37,729
2001	30,074	0	30,074
2002	36,462	834	37,296
2003	43,933	932	44,865
2004	44,683	538	45,221
2005	42,473	1,278	43,751
2006	42,536	1,174	43,710

4 Fishery sector structure

4.1 Overall fishery sector

The Mozambican fishing sector is divided into marine capture fisheries, inland capture fisheries and freshwater aquaculture sector.

Marine capture fisheries

Marine fisheries account for more than 90% of Mozambican total fish production. In average, the annual catch from marine resources is about 120,000 tones of which 80% are caught by artisanal fishers. The main marine resource comprises of crustaceans (prawns, deepwater shrimp, crayfish, lobsters and crabs), marine finfish (demersal and pelagic species mainly grouper, snapper, emperor and sea bream also high migratory

tuna species of yellow fin, big eye and albacore, swordfish and shark) and cephalopods and molluscs (squid, octopus, sea cucumbers, bivalves)

Inland capture Fisheries

Inland water bodies include Lake Niassa/Malawi, the third largest in Africa and third deepest worldwide, the manmade Cahora Bassa Lake and a great number of rivers. Lake Cahora Bassa and the Mozambican part of Lake Malawi provide fishing-related livelihood to about 20,000 people. A total of about 10,000 tonnes of small pelagics are caught, processed and marketed from Lake Cahora Bassa each year, of which 4,000 tonnes is caught by artisanal and small-scale fishers. Inland fisheries are dominated by small pelagics -kapenta, tilapia and carps and are the most important freshwater species harvested for human consumption.

Marine farmed species

The Mozambique aquaculture industry is very young. The cultivation of marine species has emerged only over the last five years. Freshwater aquaculture started in the 1950s at the artisanal/traditional level, while the marine aquaculture started in 1995 at an industrial level.

The main marine species farmed in Mozambique include black tiger prawn (*Penaeus monodon*) Indian white prawn (*P. indicus* and *P. japonicus*), *Fenneropenaeus indicus*, pink prawn (*Macrobrachium monocerosi*), kuruma prawn (*Modiolus philippinarum*), bivalves, (*Perna perna*, *Meretrix meretrix*, *Modiolus philippinarum*, *Eumarcia pauperkulata*, *Sacrostrea cucullata*, *Cassostrea gigas*, and *Veneruspis Japonica*), and mud crab (*Scylla serrata*)

Shrimp farming of black tiger and white prawn is more oriented for export markets. The current production of cultured shrimp was reported at 300 tonnes in 2003 from a 132 hector farm. Commercial shrimp farms are situated in Beira (132 hectar farm), Quelimane (300 and 150 hectar farms) and Pemba (250 ha farm).

The first shrimp farming development was established in the mid-1990s in Zambezia Province, in the central-north region, one of the most suitable regions for shrimp culture, with an overall initial potential of over 6 000 ha.

In 2000, another joint venture (Mozambican-Chinese project) was established in Sofala Province (central region of Mozambique) for shrimp farming. The aquaculture farm has 132 ha of ponds, and the company uses its own boats to obtain seed from wild sources (Sofala Bank).

Total employment in the aquaculture industry is estimated at between 500-600 people.

Other important aquaculture species are seaweed, bivalves (oysters) and crabs. Seaweed (*Kappaphycus spp* – red algae) farming involves about 5,400 people, of which 65% are women. The production of seaweed in 2003 was about 523 tonnes.

Other crustaceans, including mud crab (*Scylla serrata*), are widely abundant in both regions. The marine brown mussel (*Perna perna*) has particular potential for farming in the south, where considerable stock can be found for transplanting of spats or bloodstock production. Other mussel species, including sand mussel (*Modiolus philippinarum*), are abundant in the north.

Freshwater aquaculture

Freshwater aquaculture is dominated by the farming of native cyclids and tilapia but otherwise the popular species farmed in Mozambique include *Oreochromis niloticus*, African catfish (*Clarias mossambicus*) freshwater shrimp (*Macrobrachium rosenbergii*) and carps (*Cyprinus carpio*).

Freshwater culture is mainly directed at integrated systems of fish farming. A number of projects have been undertaken in the central region Province of Manica, where 1 240 fish pond have been built and currently produce 70 tonnes of fish.

In the south, the Massingir reservoir also offers considerable development possibilities. Its annual production is estimated to be more than 500 tonnes from its area of 15 000 ha.

Several species, both indigenous and introduced, are used or have been used in fish farming in Mozambique. However, fish farming is almost totally dominated by farming of native cyclids, Tilapia and species belonging to the genus *Oreochromis*. In particular, popular species are:

- *Oreochromis niloticus* has become the dominant species due to its proven superior growth compared to other species;
- *Sarotherodon spp.*; the African catfish (*Clarias mossambicus*); and the freshwater shrimp *Macrobrachium rosenbergii*; and
- exotic fish species for farming introduced in recent years, including common carp (*Cyprinus carpio*), grass carp (*Ctenopharygodon idella*), *S. niloticus* and the catfish *Ictalurus punctatus*.

Tilapia farming is currently carried out in small-scale cage culture. There are about 2,750 subsistence farms of about 100 m² oriented for family consumption. According to the Ministry of Fisheries in Mozambique, a total production of 900 tonnes per year of tilapia species is produced at small-scale level for subsistence purposes.

4.2 Marine sub-sector

4.2.1.1 Means of fishing / production

The industrial and semi industrial fisheries

The industrial fisheries in Mozambique consist of joint venture between the government and foreign companies from Japan and Spain. This sector has the majority of the Total Allowable Catches (TAC of more than 70 %). The shrimp industry, based in Beira and Quelimane, is mainly export-oriented and represents an important source of foreign exchange income for the country. 70% of the production is coming from two major commercial companies, PESCAMAR and EFRIPEL. The catch is frozen directly on board before being exported to Japan and the European Union. Well equipped foreign shrimp fleets are still very active in Mozambique's waters.

It is estimated that about 187 national industrial vessels are also operating in the industrial fisheries.

The main commercial species targeted by the industrial sector include lobster, crabs, gamba (deep water shrimp), fish, shallow water shrimp, crayfish and squid.

The small-scale and artisanal fisheries

The small-scale and artisanal fisheries in Mozambique play a significant role in the national economy. The sector account for about 80% of the total marine catches.

The artisanal fisheries consist of individuals or small groups of fishermen with very weak economic power. They make use of non-motoric fishing vessels/ boats of 3-8 m in length. They use beach seine, gillnet and longline to catch fish. The sector also consists of fish collectors and divers. It is estimate that the number of fishing boats and canoes are approximately 15,000, of which 3% are equipped with engines, using beach seine and gillnet fishing gears. In general, the marine artisanal activities take place along the entire coastline, but have special relevance in the provinces of Nampula, Zambezia, Sofala, Inhambane and Maputo.

4.3 Inland sub-sector

Inland water bodies comprise Niassa Lake, the third largest in Africa and third deepest worldwide; the manmade Cahora Bassa lake; and a great number of rivers. Lake Niassa and the Zambezi River are important freshwater resources for fishing activities in Mozambique.

A total of 10,000 tonnes of small pelagics (kapenta) are caught, processed and marketed from Lake Cahora Bassa each year, of which 4,000 tonnes of demersal fish is caught by artisanal and small-scale fishers while the rest is caught by semi industrial fishers. Inland fisheries are dominated by small pelagics -kapenta, tilapia and carps, representing the most important freshwater species harvested for human consumption.

5 Post harvest use

5.1 Fish utilisation

Fish processing in Mozambique traditionally involves a number of different methods, often used in combination and including smoking, freezing and sun-drying. At industrial level, shrimp is frozen on board of vessel for export, while smoking, and sun-drying are mostly practices at artisanal and small scale level for African and domestic markets.

Value addition on shore processing is promoted through longer-term fishing right assignments. One sardine cannery processing *and* one salting/drying factory are operating in Maputo.

Sun-drying and salt-drying are the two main processing methods for fish preservation Salt-drying is used for squid and fish of all sizes, and also for fish of second-grade quality.

Salt-drying and drying is practiced in the north and central part of the country, freezing in the north and fish smoking in the southern part of the country.

Lack of cold storage facilities usually forces people to employ traditional processing methods of smoking and sun-drying.

5.2 Fish markets

The market for fish products depends on their commercial value and quality. In Mozambique, the main export products are: high quality shrimp, gamba and lobster whilst the second grade products tend to be sold locally, although small quantities may also be exported.

Domestic Market:

There are over 700 artisanal landing sites along the coast of Mozambique, varying in size. In these landing sites, a lively trade is also conducted, and often there are small processing operations depending on traditional methods associated with the sites. The most common processing methods are drying (sun-drying), smoking, and salting.

Despite Mozambique being a fish producing countries, fish distribution in the country is very limited. The national distribution system for fish – especially fresh fish – is not well developed.

Most of the fish harvested by artisanal fishers are for substance or distributed close to the landing sites. Very little of the artisanal catch goes for exports, except for shrimp.

Fish at landing sites is sold by the fishermen to wholesalers; usually ladies who buy small quantities that are transported to local fish markets and sold as fresh. Some also buy for processing (drying, salting, smoking). Processed fish, such as dried or salted and dried, are usually packed in sacks and transported by bicycle or pick-up truck to local fish markets in villages and in the larger towns and cities.

The local fish markets are concentrated in the more densely populated regions. If there are many traders selling the same product, the price is usually reduced. The buyers and sellers can always bargain on the price. In general, fish trade in Mozambique is very slow during the rainy season, as people prefer to eat vegetables rather than fish.

Nevertheless, the country still depend on fish imports, mainly of horse mackerel to suppress the deficit and it is estimated that 25-30,000 tones are annually imported from the regional markets for distribution in the domestic markets.

International Trade: The international market for Mozambique's fish products is wide, and includes Africa (Democratic Republic of the Congo, Malawi, South Africa, Zambia and Zimbabwe), Asia (Hong-Kong and Japan) and Europe (Italy, Portugal, Spain and the United Kingdom).

The supply chain for international trade is totally different from that of the local markets. Most of the catch that is destined for exports is caught by the industrial or semi-industrial fleet, and are either frozen on board or landed fresh and frozen or processed in land-based processing plants. Most of the catch is exported as frozen, by freezer containers to Europe or other destinations.

Many of the smaller, unaccredited processing plants ship their products to South Africa, where further processing is done.

The main export markets in Africa are mainly countries in the Southern Africa Development Community, (SADC) and Southern Africa Custom Union (SACU). The SADC and SACU markets account for about 40

percent of all Mozambican fish exports. South Africa and Zimbabwe reported the highest import volumes of fish products from Mozambique in 2001. Freshwater small pelagics (Kapenta) from the semi-industrial sector are export in large volume to Zimbabwe.

Traditional/artisanal processed fish (salt-dried and smoked) is informally exported to neighboring countries (Tanzania, Malawi, Zimbabwe, DRC and Zambia). Fish exports to Tanzania come from Cambo Delgado province; and the export to Malawi is from Nampula, Zambezia and Beira. Fish exported to Zambia comes from Tete (Cahora Bassa Dam). Most of the products are traded in dried and smoked form, with the exception of South Africa, which imports frozen shrimps and fish.

The non- African international markets comprises of the EU which receive about 62% of Mozambique's fish exports (by volume), and Asia (12%). High value prawns are the principal export product currently being exported to the EU (mainly Spain) and Japan. Deep-sea prawns are exported to Italy and South Africa. The value of fish exports from Mozambique to the international markets was USD 96.6 million in 2006.

6 Fishery sector performance

6.1 Economic role of fisheries in the national economy

Fisheries in Mozambique was one of the sector least effected by the war, and one of the most important both in terms of food production and source of foreign currency. The fishing sector contributes about 4% to the Gross Domestic Product. Government revenue from licence fees and levies was 3.8 million in 2002.

6.2 Demand and Supply

Mozambique's average fish consumption per capita is estimated at 5.0 kg/year; however it is much higher among coastal communities and estimated at 10 – 12 kg.

Demand for fish products in the country is much higher than the domestic industry can supply.

It is expected that demand for seafood will grow substantially over the next 25 years, and consequently there is a need to increase supply.

6.3 Trade

The fisheries sector of Mozambique plays an important role in the economy of the country, contributing 13% of the export income.

In general, Mozambique's foreign trade in seafood is characterised by exports of high-value products and imports of low-value fish.

Imported fish products supplied to the national fish markets are generally providing a supplementary source of animal protein for the majority of the population. The bulk consists of mackerel and cavala imported from Angola and Namibia.

6.4 Food security

Fish is much appreciated as food by all sector of the Mozambique population and constitutes a major part of the animal protein intake. It is estimated that about 3.5% of the animal protein intake of the population is derived from fish and fish products. The demand for fish is relatively high in the coastal area and is expected to grow, to match population growth (2.6% annually).

Although the Government has embarked on alleviate poverty totally, it is still along ways to go before this can be realized. The fact that more than 70% of the Mozambique population still live in rural area, already spell out that the largest part of the population live in poor standard condition and lack basic needs (water, health facilities) and infrastructures. Poor road network has been singled out as obstacles to development and movement of goods including fish to the needy.

Mozambique imports about 30 tones of cheap horse mackerel from Namibia, targeting the low income group and for food security purposes. Horse mackerel is imported at 0% import duties. The government can meet the demand for fish product in the domestic market if trade barriers and distortion are eliminated and fish products utilized by artisanal and small scale fisheries move freer at border crossing.

6.5 Employment

More than 90,000 people are involved in the fishing sector (fishing, gathering, processing and marketing) of which 70,000 are involved in the marine sector and 20,000 in the freshwater fisheries. About 500,000 people directly depend on fishing activities for their livelihood. Employment generated from fishing activities is generally in fish product distribution and sales. This provides livelihood for a large number of women operating from landing sites to the markets

6.6 Rural development

The activities of the fisheries sector focuses on developing the most critical least developed areas such as: the processing industry, onshore infrastructure, aquaculture and integrated programmes on small scale fisheries development, taking into account the need to meet the primary objective of the sectors` contribution to foreign earnings and poverty alleviation.

Some of the most important highlights through development have a significant socio-economic impact. These include the facilitation of market-led fisheries inputs; securing the sustainability of financial services at the small-scale level such as micro-credit, revolving fund schemes, low –level saving-based approaches, medium scale loans for trading activities and fishing gear purchase; boosting of co-management committees, and building of social infrastructure such as water points, schools, clinics and roads.

7 Fishery sector development

7.1 Development prospects/strategies

The prospect to develop fish trade in the country is foreseen. The Government has shown a strong interest in expanding exports for fisheries products, but limited export capacity has hindered significant export-led growth.

To support this process generous investment incentives exist and the Government has introduced legislation allowing the establishment of free zones for exports oriented investments. Mozambique's preferential access to major markets in the U.S. and EU should act as a powerful magnet for many labour intensive industries such as fish processing. In addition, the formation of economic trade bloc with Zimbabwe, Malawi and Zambia will afford Mozambique to gain access to key regional markets thus expanding their potential markets for fish exports and imports. Poor consumer will have a wide choice of fish products coming from other countries at reasonable prices. Artisanal and small scale traders can access markets in those countries without being confronted to pay high tariffs which reduce their profit margin, thus contribute to food security and poverty alleviation.

7.1.1 Main areas for opportunities

The areas that need development in the Mozambican fisheries include:

Development of value added products –such as export of live shrimp and fresh fish (groupers and snappers). Currently more shrimp from captured fisheries are export as frozen product with little value addition.

Increase production from aquaculture –Mozambique is well known for its good quality shrimps and prawn. Potential for aquaculture development in Mozambique are enormous considering favourable environment for investments, favourable climatic condition (tropical and sub-tropical climate); unpolluted environment, low population pressure and extensive resources. A potential of 33 000 ha of land suitable for coastal aquaculture; the existence of wild species with potential for culture such as black tiger *Penaeus monodon*, white prawn *P. indicus*, the giant prawn *Macrobrachium rosenbergii*, tilapia *Tilapia spp*, etc are all available for the development of the sector.

In order to realize the potential, serious and consistent work has to be done to meet all the necessary conditions to make the country aquaculture a self-sufficient productive sector, which will be competitive enough to secure its long-term sustainability. In a clear natural aquaculture policy has to be developed, consisting of consistent regulations and administrative procedures that should encourage sustainable and environmentally responsible aquaculture development. Fish culture has to be integrated into rural development, especially in the inland areas, to encourage family business in fish production. Technology has to be improved, education and training is needed. Promotional and marketing strategy for aquaculture products has to be done to reduce trade barriers and to give the products the added value.

Both fresh water and marine aquaculture benefits from diversity of natural environment and availability of suitable native species for farming. While fresh water culture is mainly directed for integrated systems on fish farming to improve population diet, marine aquaculture is more broadly oriented towards both low cost protein and high value products for exports. Particular attention should be given to marine prawn culture because of its economic importance for export earning.

Improvement in product quality and marketing efficiency for artisanal and small scale fishers need to be enhanced. Improved quality and hygiene within the fishing industry reduced post harvesting loss and make available more fish product for human consumption. The small scale sectors need assistance such as training, research and infrastructure in order to develop the industry.

7.1.2 Main constraints to development

In spite of the existing potential, the level of development of the small-scale fisheries and fisheries in general is affected by the following problems:

- High post-harvest losses
- Unhygienic processing methods
- Low quality of the fish product in the local and regional markets
- Difficulties in the placement of fish products with high commercial value in the competitive markets

The problems outlined above are mainly caused by:

- Poor landing conditions and landing structures
- Lack of ice and cold storage at landing sites and on board of fishing boats
- Lack of knowledge on proper handling procedures by the fishermen
- Limited knowledge of the good processing practices;
- Distribution infrastructures in potential markets are largely unsatisfactory. Poor roads that connect the fishing communities to their markets are not always reliable and decentralized distribution centres with cold storage facilities are missing. The involvement of intermediaries (marketing agents) increases prices for the final consumers.

With regards to aquaculture development, realization of the aquaculture potential is being severely limited by several factors such as lack of experience and technology, economic difficulties resulting from limited infrastructure and high operational cost.

7.2 Research

Fishery research is concentrated on fishery resources that have significant importance to the economy of the country and also on those resources that have significant potential in terms of the economy and food supply, currently underexploited.

Within fishery research activities, priority is accorded to:

- collecting and processing statistical data on yield and effort, together with sampling activities;
- periodic assessment of the most important stocks; and
- Recommendations on management measures necessary for appropriate use of resources.

7.3 Foreign aid

The fishery sector in Mozambique has benefited from foreign aid in a number of ways. Direct investments in the form of development projects, financed under cooperation agreements, have occurred in several areas, such as the rehabilitation of the fishing harbours in Maputo, Beira and Quelimane, financed by Japan. The Artisanal Development Project in the northern province of Nampula, financed by IFAD and OPEC. DANIDA and ICEIDA are other assistance agencies that have supported development projects.

Development activities focus on:

- reducing fishing effort to a sustainable bio-economic level through the adoption and implementation of complementary management measures;
- adjusting the shrimp fishing fleet and restructuring the state companies in the sector;
- building a favourable environment for the development of a national enterprise sector;
- improving the fishery management system in order to make it more participative with emphasis on co-management;
- increasing the value added to the catches through the promotion of the use of land processing facilities;
- supporting the development of a shrimp artisanal fishery through fishery extension action-programmes;
- promoting improved use of the shrimp by-catch;
- promoting the development of shrimp aquaculture and preserving the environment;
- promoting the use of new or unexploited marine resources;
- improving distribution and sales, quality control systems and sanitary inspection;
- promoting professional training of the marine staff, administration and the processing industry;
- Establishing the necessary incentives for the development of the sector.

In addition, Mozambique is receiving important external aid for the fisheries sector such as the International Legal and Institutional Arrangements for the management of Lake Malawi/Nyassa. There are currently many ongoing projects funded by bilateral (NORAD, DANIDA, ICEIDA, France, Belgium, the Netherlands, Japan), as well as multilateral (EU, UNDP, IFAD, OPEC) donors.

This aid, which amounted to approximately US\$ 60 million in the 1980s, has doubled in the 1990s. The recent EU convention with Mozambique included a five-year agreement allowing EU vessels to fish for tuna and shrimp and assuring institutional support to the Fisheries sector of Mozambique for a total of EU 175 million.

8 Fishery sector institutions

The Mozambican Ministry of Fishery was established by Presidential Decree 1/2000 of 17 January 2000. At a central level, the organizational structure of the Ministry has three national directorates for fisheries administration, fisheries economics and human resources and four central departments for the fisheries inspection, aquaculture, international co-operation, and finance and administration.

The Research Institute (created in 1987), small-scale Fisheries Development Institute (created in 1989), Fisheries School (created in 1980) and the Fisheries Development Fund (created in 1988) are also part of the Ministry of Fisheries and the fisheries Inspection (created in 2005-Decree 18/2005).

At the provincial level are the Provincial Directorates for Fisheries, Delegations and Field Stations. The Minister is also advised by Consultative, Technical and Coordinator councils.

The IDPPE (through fishing extension services), IIP (carrying out biological, behaviour and potential resources research), FFP (providing financial services) ADMAR and SPAP's (doing and licensing and surveillance), are the main institutions dealing with the artisanal fisheries sector.

Internal links to national fisheries administrative and research institutions:

- DNP (National Directorate for Fisheries); Lima@Pescas.uem.mz
- IIP (Institute for Fisheries Research); Mazibe@Magumba.uem.mz
- IDPPE (Institute for Development of Small Scale Fisheries); Bomba@ldppe.uem.mz

9 General legal frameworks

The legal basis of the Mozambican fisheries is given by the Fisheries law 3/90 of 26 September 1990 and subsequent regulations, being the fisheries management regime based on TAC/quotas and limited entry regulation (licensing/effort allocation) accomplished by closed seasons and mesh size regulation. These management measures are revised periodically with a view of keeping their effectiveness, based on results of stock assessment for the most valuable resources and economic performance of the fleet, among other tools.

In 1990, Fisheries Administration Commission (CAP) was established aiming to improve the involvement of the private sector and fishing communities in management decision making. It congregates representatives of the Fisheries Public Administration and of the fishing industry. This forum is an advisory body to the Minister and discusses and analyzes issues such as quota and vessels allocations, magnitude and period of closed season, state of exploitation of capital resources and recommendations of management measures addressed by the research component. Therefore, final decision on the fisheries administrative matters is taken by the Fisheries Authorities upon consultation with this Forum. The regional and international matters are also discussed in the forum before national decision is taken.

10 Management applied to the main fisheries

10.1 Main goals/objectives

Overview of the key objectives and activities of the sector

The fisheries policy of Mozambique provides the overall strategic perspective of the sector and was drawn to attain the crucial objectives of food security, increase the net foreign exchange earnings, and reduce unemployment rate and poverty alleviation. To achieve these goals, which are in line with the Government's

Program and the National Program for Poverty Alleviation, the sector should focus its work in areas summarized below, approved by Presidential Decree 6/2000 of 4 April:

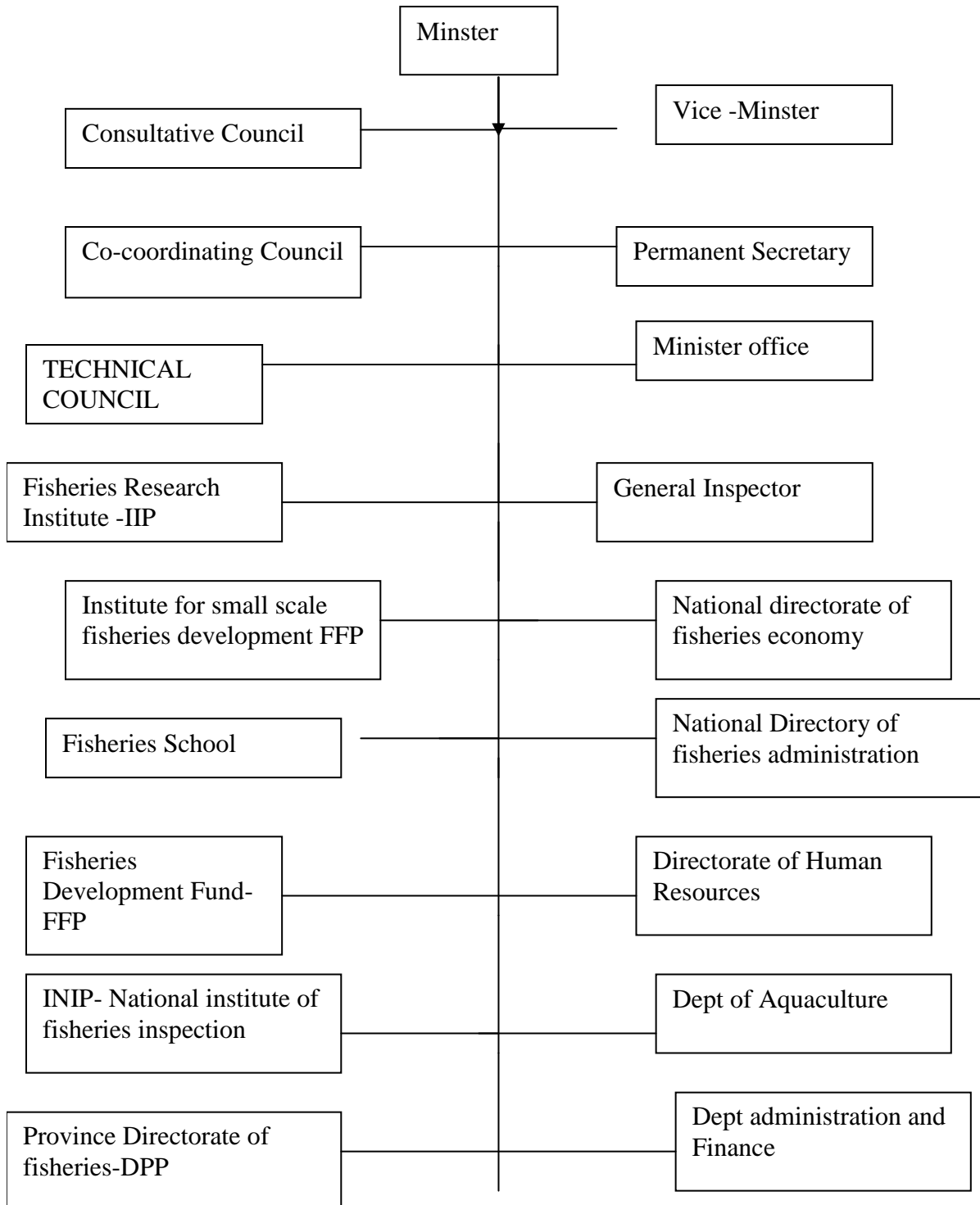
- a) Secure a responsible fisheries management of marine resources, harvest production, sustainable exploitation of the fish resources, protection and conservation of fish resources including among others, the setting up of dynamic co-management approaches;
- b) Promote the development of fishing activities and related operations within Mozambican water jurisdiction, both directed towards domestic consumption and export; and
- c) Promote the institutional capacity and competence in the sector with a view of contributing to raise the standard of living of the fishing communities.

The government strategy for fisheries management consists of ensuring the preservation of the fishery resources while maximizing economic benefit for the country as a result of their use.

The above strategies will be complemented by the following activities:

- stimulating the participation of the productive sector in the allocation of quotas as a basic criteria;
- reducing the industrial shrimp fishing capacity on the Sofala Bank;
- establishing management information systems to facilitate monitoring of the resources of the main fisheries in order to provide timely warnings of changes;
- encouraging the application of bio-economic models to the industrial and semi-industrial fisheries;
- and
- Improving the fisheries surveillance system in order to allow inspection at sea.

10.2 Institutional arrangements



10.2.1 Co-management activities and Participatory approach

All government strategies of resource conservation encourage the participation of the local fishery communities in the management of the resource. Thus, artisanal fishery communities have established fishermen's associations that are involved in co-management in collaboration with government institutions. There is also an active motion of artisanal communities implementing and disseminating co-management schemes along the coast, to ensure the exploitation of natural resources on a sustainable manner and alleviate the conflicts among fishers and between fishers and other stakeholders. The impact of this shared responsibility in managing the aquatic resources are positively evaluated, mainly in terms of law enforcement and fishery effort control for the most sensitive coastal resources.

An expressive number of artisanal fisheries associations and co-management committees are already established with the assistance of the Fisheries Public Administration, and there are ongoing processes aiming to adopt a legal framework to formalize these incentives.

The government promotes the involvement of the coastal communities in the exploitation and management of living aquatic stocks in order to take advantage of local management know-how. The purpose is to facilitate the introduction of biologically sustainable natural resources usage patterns that can be both socially and economically efficient.

10.3 Management measures

The management system of Mozambican fisheries comprises of fishing effort restrictions and quota system.

The government curtails and restricts fishing activities in both marine and inland waters whenever circumstances require such measure, such as:

- preservation of the environment;
- living aquatic resources are at stake;
- economic efficiency is needed for efficient exploitation of stocks; or
- protecting the economic position of certain groups participating in the fishery.

The system of fishing quotas is based on the Total Allowable Catch (TAC) for each fishery.

The government establishes fishery regulation measures on the basis of biological evidence and economic justification following discussion with interested economic operators.

In order to foster private investment in areas considered a priority, the government put forward possible incentive schemes. Priority is given to the following actions:

- artisanal fishery and artisanal boat building in the provinces of Cabo Delgado, Nampula and Zambezia;
- ice production and cold storage networks in areas where this may contribute to raising the value of artisanal fish products;
- support for artisanal fleets and for artisanal catch marketing;
- industrial fishing of unused resources or in new fishing grounds;
- renewal and expansion of the semi-industrial fishing fleet;

- fish processing facilities; and
- marine shrimp aquaculture.

11 Aquaculture sub-sector

The development of aquaculture production of shrimp, bivalves, molluscs and tilapia is actively promoted by the government. Therefore the government has introduced a specific legislation that regulates all rights and obligations of all stakeholders. The legislation defines specifically norms and requisites for aquaculture farms; establish procedures for licensing and parameters for each farming system (shrimp farms: extensive – 5 animals/m² and final biomass 100g/m²; semi-intensive - 25 animals/m² and final biomass 400g/m²; intensive - not allowed); establish restrictions to import of live animals and the conversion of mangrove into aquaculture ponds and establish other environmental and consumers protection measures.