


<b>FISHERY COUNTRY PROFILE</b>	<b>Food and Agriculture Organization of the United Nations</b>	<b>FID/CP/ERI Rev. 1</b>
<b>PROFIL DE LA PÊCHE PAR PAYS</b>	<b>Organisation des Nations Unies pour l'alimentation et l'agriculture</b>	 <b>June 2002</b>
<b>RESUMEN INFORMATIVO SOBRE LA PESCA POR PAISES</b>	<b>Organización de las Naciones Unidas para la Agricultura y la Alimentación</b>	

## ERITREA

### GENERAL ECONOMIC DATA

<b>Area:</b>	125 700 km <sup>2</sup>
<b>Water area:</b>	about 56 000 km <sup>2</sup> (marine) about 15 km <sup>2</sup> (inland)
<b>Population (2000):</b>	4 100 000
<b>GDP (current, 2000):</b>	US \$ 607 million
<b>GDP per caput (current, 2000):</b>	US \$ 170
<b>Agricultural GDP (1999):</b>	17.5% of GDP

### FISHERIES DATA

#### Commodity balance (2000):

	<b>Production</b>	<b>Imports</b>	<b>Exports</b>	<b>Total supply</b>	<b><i>Per caput</i> supply</b>
	tonnes live-weight				kg/year
Fish for direct human consumption	12 700	92	664	12 098	2.95

Fish for animal feed and other purposes	1 700	-	-	1 700	
---	-------	---	---	-------	--

<b>Estimated employment (2002):</b>	
(i) Primary sector:	3 500
(ii) Secondary sector:	10 000 (part time, estimated)
Gross value of fisheries output (at ex-vessel prices) 2000:	US \$5 500 000 (estimated)
Trade (2000), estimated:	
Value of imports	US \$ 0.1 million
Value of exports	US \$ 2.1 million

## THE STRUCTURE AND CHARACTERISTICS OF THE INDUSTRY

### Marine fisheries

Located at the widest part of the Red Sea, Eritrea has an EEZ of 121 000 km<sup>2</sup>. Its mainland coastline is about 1 900 km from the Sudan border to the Jibouti border. Eritrea has a continental shelf of 56 000 km<sup>2</sup> with a plateau containing 360 islands that define the Dahlak Archipelago. The latter add another 1 300 km of coastline. About 25% of the continental shelf is occupied by this plateau; 19% of the shelf is less than 30 m deep and thus off limits to trawling activities.

Eritrea's coastline has several harbours, some with historical significance such as Adulis in Zula Bay and the harbour on Dahlak Kebir Island. The major harbours are those at Massawa and Assab with several others in between such as Wokiro, Gal'allo, Ti'o, 'Eddi, and Bar'asole. North of Massawa, at places such as Marsa Beritae, Marsa Ibrahim, Marsa Gulbub and Marsa Kubba fisheries harbours are either under construction or are presently being considered for suitability.

The waters of the southern part of the Red Sea are highly productive in part due to allochthonous advection of monsoon upwelled nutrient rich waters through Bab El Mandab. This productivity supports substantial populations of over 1 000 species of fish and 220 species of corals. Though systematic stock assessments of commercially important species are not carried out routinely by the Ministry of Fisheries, estimates of an aggregate MSY for such species are between 70 000 and 80 000 mt (Research and Statistics, Ministry of Fisheries, Massawa, Eritrea).

The following table is the result of a more recent survey (1997 - 1998) undertaken by the

the French Marine Research Organisation, IFREMER:

Resources	MSY in mt
Demersal fish	17 000
Coral Demersal fish	5 000
Small Pelagics	24 000
Large oceanic pelagics	6 000
Sharks	5 000
Shrimp	500
Lobster	500

Commercially valuable fish are either reef dwelling, such as groupers, snappers and emperors; demersal, such as lizardfish and breams; or pelagic, such as jacks, trevallies, mackerels, tunas, sharks, sardines and anchovies.

Most traditional Eritrean fishermen use one of two types of fishing craft: Houris or Sambuks. Houris are 8 - 13 m long and are constructed of planks of wood. An outboard motor is used for their propulsion and they can take up to 5 fishermen. Of the current (May 2002) fleet of 560 boats that make up the Eritrean fishing fleet, Houris constitute about 80%. The larger Sambuk is also a wooden boat that can be up to 16m long, with an inboard engine, and can take up to 9 crew for up to several weeks at sea, though shorter trips are taken for the fresh fish market. Sambuks constitute 9% of the fishing fleet at this time. There are also 60 fibreglass reinforced plastic (GRP) boats that are typically imported from neighbouring countries (Saudi Arabia or Yemen), but some are built in Eritrea as well. Approximately 11% of the artisanal fleet is made up of these outboard boats.

Traditional fishermen make, on average, 2 - 3 trips per month for seven months of the year. Their average catch is 0.8 - 1.5 mt/trip/boat. Hold capacity and ice limit boats targeting the fresh fish market to a maximum of nine days at sea, while boats targeting sharks for drying can stay at sea for over a month. All fishermen diversify adaptively their targeting behaviour, their gear combination and their decisions according to season, market conditions, proximity to fishing grounds and points of sale to their villages. Much unregulated trade takes place, for example, with Yemen.

Passive and stationary gear, such as gillnets (60 - 270 mm mesh) and handlines, are deployed by traditional fishermen for pelagic and demersal fish respectively, with no mechanized hauling devices. More recently, however, smaller (Mediterranean type) trawlers, as well as large powerful industrial trawlers in addition to longliners have been increasingly active in Eritrea's fisheries. Foot fishers, primarily elderly women and young children, collect sea cucumbers, snails and other intertidal species for sale on the market. Castnets are used by these foot fishers to harvest fish for immediate local consumption.

Eritrea's coastline is divided into two administrative units, namely, the Northern Red Sea Administrative Region that includes Massawa and the Dahlak Archipelago, and the Southern Red Sea Administrative Region that includes Assab as the major port city in the south. Population estimates for these two regions are 302 000 and 120 000 respectively. At a total of about 3 000, the fishers' population is about 1% of the total for these two regions, and is

sparsely distributed along Eritrea's coastline and islands.

All fishing is carried out under licenses issued by the Ministry of Fisheries. At present (May June 2002) there are 233 active artisanal fishing licences in addition to 30 industrial fleet licences issued to four foreign companies that are active in Eritrea's waters. For the year 2001 the landings of the industrial fleet were 14 488 mt; those of the artisanal fleet were estimated to be 1 445 mt. For the first decade after independence the policy of the Government of Eritrea was to rehabilitate the infrastructure of the fishing sector favouring the artisanal fishermen. However, more recently this policy has shifted in favour of the industrial sector. Regulations governing the industrial trawl fleet include measures to protect the coastal biomass such as a minimum depth of 30 m and a minimum distance of 6.5 miles from the shore and 4 miles from any island. During the hot months of July through September, all industrial fishing operations are prohibited in Eritrean waters.

### **Inland fisheries and aquaculture**

There are about 110 water reservoirs throughout Eritrea's interior, thirty of which are regularly stocked with species such as tilapia and carp. Some of these inland reservoirs are quite productive and are an important source of protein for surrounding communities. An inland fisheries centre is located in the central zone of Eritrea at an elevation of 1800 m with facilities such as experimental ponds, currently under construction. Species currently stocked or considered good candidates for further stocking include *Oreochromis niloticus*, *Tilapia zilli*, *Cyprinu caprio*, *Carassius carassius* and *Carassius auratus*. The total catch of inland fisheries including subsistence fishing is currently about 5 mt/yr (2002) but, according to the Ministry of Fisheries, has a potential of 100 mt/yr.

An integrated Seawater Farm located at Gurgusum beach in Massawa has been in operation since 1999. Still in the beginning phases, this project has four components: a shrimp production facility in concrete ponds, whose post-harvest waste water is first pumped into earthen ponds to grow brackish/saltwater tilapia, and then used to irrigate fields of the halophyte *Salicornia* (used for a variety of purposes ranging from oil production for the cosmetics industry to burning the chaff as fuel). Finally, the remaining wastewater is not put back into the sea, but used to irrigate mangrove trees and for other aesthetic planting purposes. The farm operates its own shrimp feed production plant and has its own hatchery to provide post larval shrimp that will go into the ponds.

### **Utilisation of catch/consumption of fish**

Reef fishes such as snappers, groupers, emperors, jobfishes, jacks and trevallies make up 64% of the total catch. Pelagic fish such as mackerels, barracudas, tunas are about 20% of the catch, shrimp is about 5% of the catch and the rest are 11%. Sharks and mullets are salted and dried in situ, on the beach. First grade fish, such as snappers, groupers, emperors, grunts and shrimp are aimed for the export market. The main targets of the small industrial trawlers are lizardfish and threadfin breams (69% of the total catch), catfish (8%), and grunts (5%), while the remainder (13%) is mixed species. Only about 10% of the catch of the industrial fleet is landed and consumed locally; 90% is exported as whole frozen fish with no local value-added processing.

Fish consumption in Eritrea is traditionally very low (about 1 kg/capita/yr), meat being the preferred source of protein everywhere in the country except perhaps among the fishing communities along the coast. The Ministry of Fisheries has a Market Studies and Promotion Unit located in Asmara that undertakes fish promotion campaigns through television, radio, brochures and other print media.

Marketing of fish is undertaken by a limited number of private dealers at landing sites, the main market being the capital city of Asmara where the distribution channels are still limited. There are only four major buyers and fifteen retailers throughout the country.

### **The State and the economic role of the industry**

For the first decade or so after the referendum, government policy focused on the rehabilitation of the fisheries infrastructure. With international assistance four major fishing harbours with jetties, supply services, warehouses, administration buildings, ice plants and fuel depots were built, as were inland and marine transportation facilities. The government was also instrumental in establishing and maintaining credit schemes and local co-operatives.

Currently (2002) three fishing harbours with facilities to serve artisanal fishermen are under construction in co-operation with the African Development Bank at Gal'allo, Ti'o and 'Eddi along the southern coast between Massawa and Assab.

Two processing and marketing plants, ERIFISH (located in Massawa) and LEDA (located in Asmara and Assab), are operating at full capacity to internationally accepted HACCP standards, moving around 200 mt of product per week. These companies play an important part in generating revenue from exports to international markets. The government has also introduced twenty GRP boats to modernize the artisanal fleet as longliners and shrimp trawlers.

Eritrean fishermen are organized into 38 affiliate village level co-operatives in six subregions that are ultimately under the umbrella of the National Fishermen Co-operative Society. With membership not being mandatory, there are currently (May 2002) 1 174 active members with USD 1.3 million in capital (in kind and cash).

### **Exports/imports**

Exports comprise fresh whole fish, semi-processed (gutted) and salted/sundried products. ERIFISH, LEDA and Red Sea Fisheries are local private and parastatal companies that specialize in exporting fresh, frozen whole and partially processed fish (groupers, emperors, snappers, grunts, lizardfish, threadfin breams and shrimp) to the markets in the Middle East and Europe. Osaki Fishing is a private company that specializes in exporting dried products like snail opercula, shark fins, and sea cucumbers to neighbouring countries like Yemen and Jibouti. Over 15 448 mt were exported during 2001 to Egypt, Saudi Arabia, the UK, France and the Netherlands.

Fish imports are currently restricted to canned tuna and sardines.

### **DEVELOPMENT PROSPECTS**

After rehabilitation of the infrastructure of the fishing sector in the major port cities, the building of basic infrastructure in the three smaller fishing ports between Massawa and Assab is now a high priority for the Government of Eritrea. These areas are now accessible by a major road (the Massawa - Assab road) that was not available until recently. This provides a much needed access to markets.

Current government policy is to increase fish production three to four fold up to 50 000- 60 000 mt per year. Whereas most of this production (80 - 85 %) is expected to be generated by the foreign industrial fleet, especially trawlers, the government aims to increase the contribution of artisanal fishermen (to 15 - 20 %) by modernizing the fleet and its workforce.

## **RESEARCH**

The University of Asmara and the Research and Statistics Division of the Ministry of Fisheries carry out fisheries research activities in Massawa. Data from the industrial trawlers and traditional fishermen are collected and analyzed and their findings released in reports. However, these largely descriptive accounts are not yet at a level that informs decision-making related to setting catch limits or any management in the currently accepted sense.

## **AID**

Succeeding earlier aid projects funded by the UNDP, the Coastal, Marine and Island Biodiversity Management Project is currently being implemented and has a duration of five years. The major objective of this project is the conservation and prudent management of Eritrea's coastal, marine and island resources and bio-diversity alongside the expansion of the industrial output of the sector. The total budget for this project is USD 6.1 million with the UNDP/GEF providing USD 4.986 million, the GOE providing USD 0.840 million and private/local sources providing USD 0.311 million.

The fisheries Infrastructure Development Project has been under implementation since 1998. This project is financed by a loan from the African Development Bank to the Government of Eritrea. The objective of the project is to build complete fisheries infrastructure and facilities in each of the three fisheries centres at Gal'allo, Ti'o and 'Eddi. This project has a training component and a credit scheme aimed to artisanal fishermen. The total budget for this project is USD 18.15 million.

The recently concluded Fisheries Resources Assessment Project (1997 - 2002) was funded by the French Government (ASD). The objective of this project was to conduct stock assessment in Eritrea's waters. The budget for this project was FF 15.6 million.