

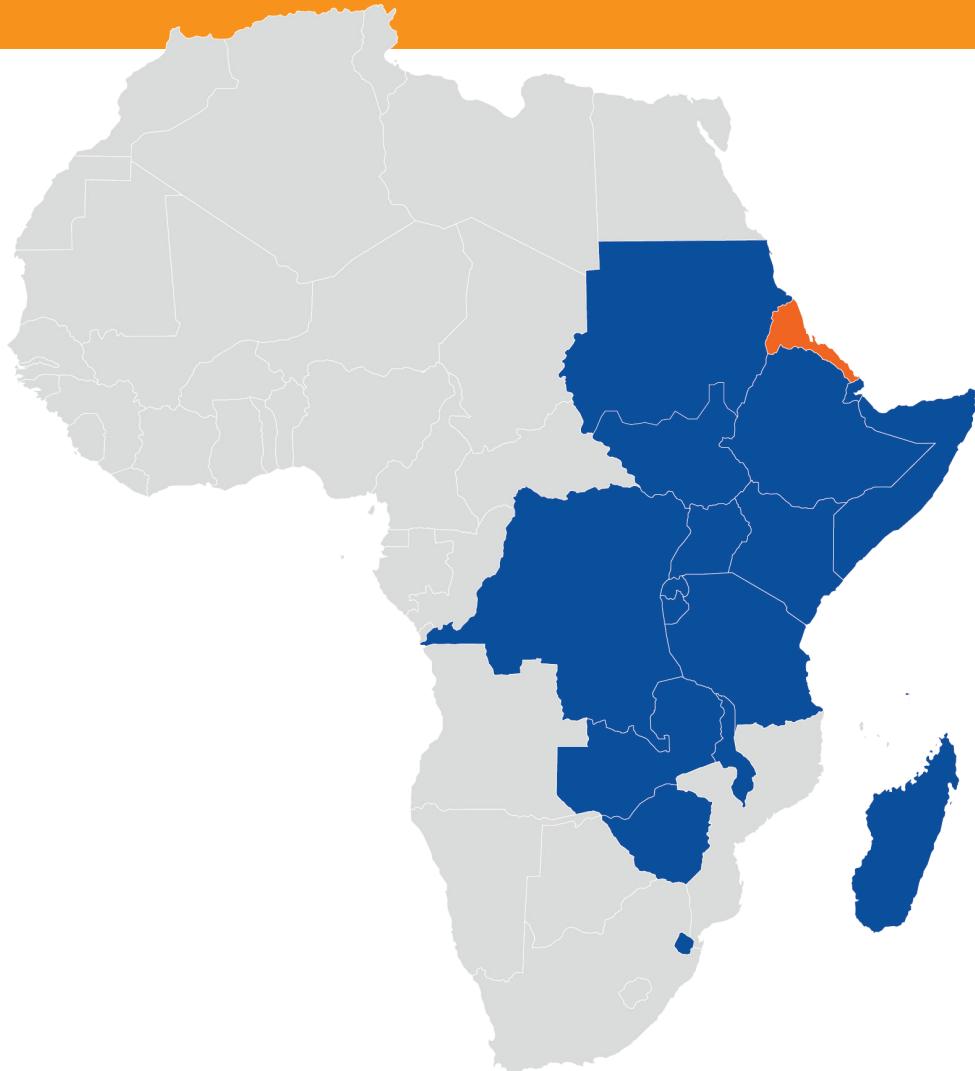


Fisheries in the ESA-IO Region: Profile and Trends

COUNTRY REVIEW

2014

ERITREA





COUNTRY REVIEW / SMARTFISH PROGRAMME / ERITREA

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This document was prepared as part of the activities of the Indian Ocean Commission (IOC)SmartFish Programme , under the FAO Fisheries management component, in the monitoring and analysis of major issues with implications for fisheries and aquaculture in the twenty countries from the Eastern Southern Africa-IOC region participating in the Programme. This has resulted in the preparation of twenty country baselines whose the purpose is to serve as easy-to-read and informative references for policy decision-makers, fishery managers, development partners and stakeholders. The baselines inventory and describe for each country the trends in status of fisheries, major social and economic dynamics of relevance to the fishery sector, policy, legal and administrative frameworks, and management regimes The present document relates to the baseline for Eritrea.

The preparation mainly involved Mr Christophe Breuil and Mr Damien Grima, FAO consultants, who made essential contribution in drafting the text and developing infographic for publication on the basis of the analysis of official and grey literature and vast field experience in the region. Much gratitude is due to all SmartFish experts who act as reviser. In particular, Ms Clotilde Bodiguel Chief Technical Adviser of IOC SmartFish activities implemented by FAO, who provided the initiative, was instrumental in the editing and Mrs Florence Wallemacq, Outreach Consultant, assisted in the formatting for publication. Lastly, the editor would like to thank National and Regional Focal Points of the IOC SmartFish Programme for providing complementary data and information.



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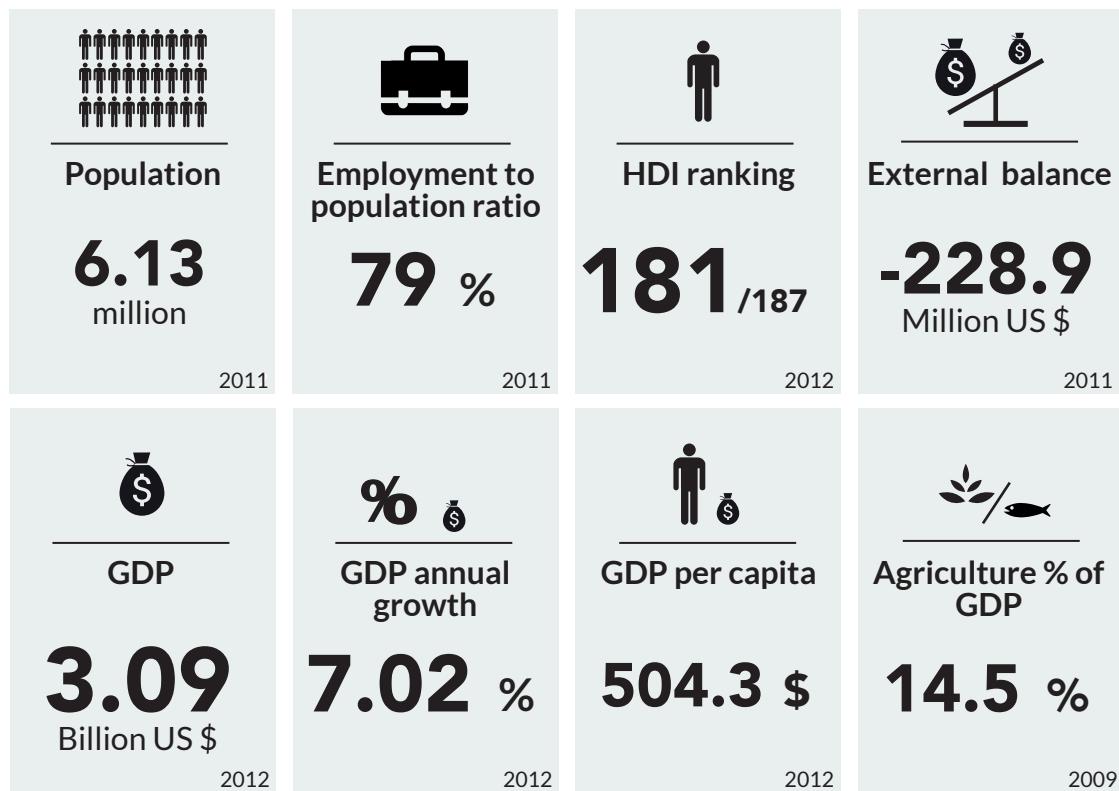


BACKGROUND INFORMATION

1 Brief on the National Economy

Key figures on Macro economic data

2014- Source World data Bank - Latest reported data



Eritrea is situated along the western coast of the Red Sea and is bordered by Sudan, Ethiopia and Djibouti. The country has a surface area of about 125,000 km² and a mainland coastline of approximately 1,200 km. Eritrea is relatively well endowed with land, marine waters and minerals including gold, silver, copper, zinc, nickel, potash and chromite. Eritrea gained formal independence in 1993 after a 30 year war with Ethiopia. Since then, infrastructural bottlenecks, weak foreign investment (especially in the non-mining sector) and dwindling aid inflows have remained the principal constraints to the country's economy. The population of Eritrea was estimated at approximately 6.1 million in 2012 with an annual growth rate close to 3.3 percent.

Eritrea's economy is dominated by the service sector, including public administration and defense, as well as trade, restaurants and hotels. The industrial sector is gradually taking a significant share of the national economy (OECD et al. 2013). The contribution of agriculture, including fisheries, is minimal (approximately 14.5 percent of GDP in 2009), despite the sector engaging about 80 percent of the workforce. Yet, the country has significant development potential in animal husbandry and livestock as well as in fisheries.

Eritrean's economy in recent years has been driven by mineral resources, especially with the start up of commercial mining activities and the export of gold and silver at the Bisha mine in early 2011. The growth rate, which reached a maximum of 3 percent over the period 2000-2010, has ranged between 7-8 percent since 2011. In 2012, according to World Bank data, total GDP in Eritrea was an estimated US \$3.09 billion. In the same year, the GDP per capita was estimated at US \$504, showing a slight increase of 14.7 percent as compared to 2011.

Besides infrastructural bottlenecks, Eritrea's economy has been faced with several constraints including unlimited and underpaid national service, the use of forced labour, drought and other natural disasters, persistent border conflicts, weak monetary policies resulting in foreign-exchange shortages, and an unfavourable investment environment. Domestic and foreign private investment is largely constrained by macroeconomic and structural constraints relating to fiscal management, state intervention and controls in foreign trade and exchange, weak and uncompetitive financial institutions and general shortages in skilled manpower (OECD et al. 2013). According to the World Bank's 'Doing Business 2013' report, Eritrea ranked 182 out of 185 economies in its ease of doing business in 2012.

The government has recently initiated some reforms aimed at improving the economic environment. These have included the establishment of a free-trade zone in Massawa Port, the revision of some legislation, the initiation of a privatization programme and the liberalization of foreign currency. The government has also selectively courted investors to explore underexploited resources in mineral extraction, energy, fisheries and tourism (OECD et al. 2013).

Inflation in Eritrea has been more than 10 percent since 2007 and peaked at 34.7 percent in 2009. However, in 2011 it went down to 13.3 percent (Mehler A.; Melber H.; Van Walraven K. 2014).

Eritrea is a net importer; the deficit of its trade balance, despite declining as a result of the start up activities of the Bisha Mine, was estimated at US \$229 million in 2011 (World Bank). Gold and silver are the main sources of foreign exchange. Most imported goods come from China, Saudi Arabia and Egypt (Mehler A.; Melber H.; Van Walraven K. 2014).

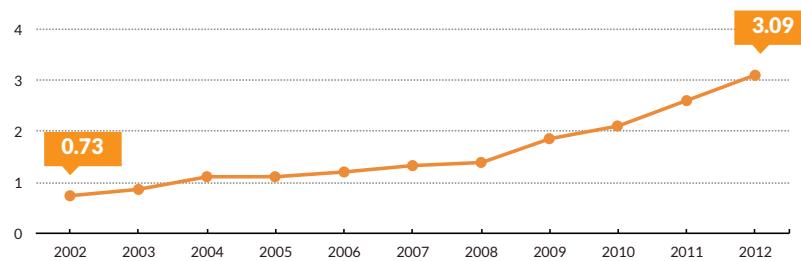
Eritrea is a member of various regional organisations, including the Common Market for Eastern and Southern Africa (COMESA) and the Community of Sahel-Saharan States. The country has also made significant efforts to reactivate its membership to the Intergovernmental Authority on Development (IGAD), which should improve its integration in the Horn of Africa.

The active population in Eritrea was estimated at 2.6 million people in 2012 (Mehler A.; Melber H.; Van Walraven K. 2014). The country's workforce is mostly concentrated in the agriculture and informal sector, as mentioned above.

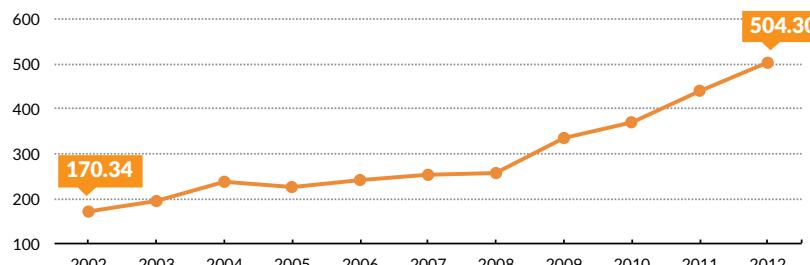
Trends

2014 - Figure 1-5 - Source World Data Bank & African year book - Last ten years

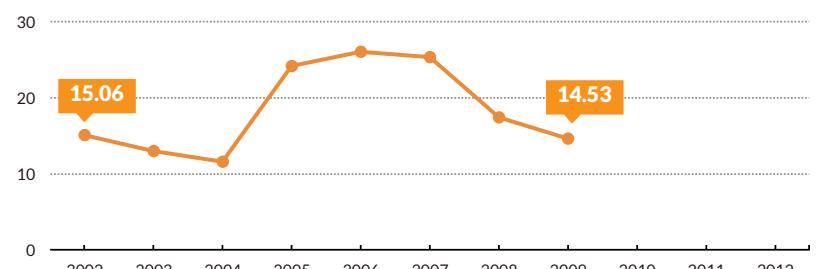
GDP (current billion US \$)



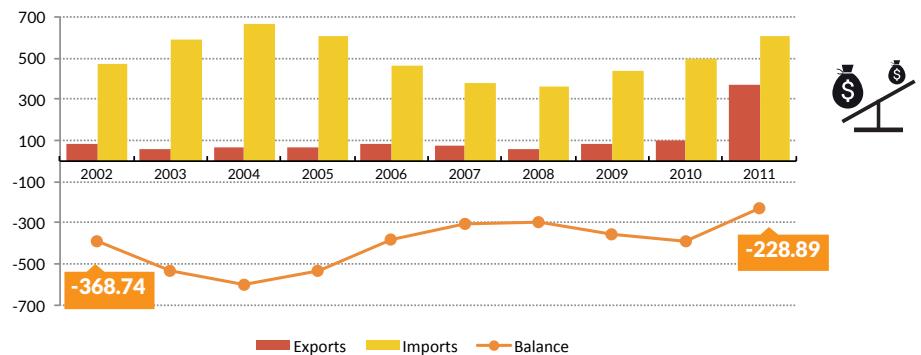
GDP per capita (current US \$)



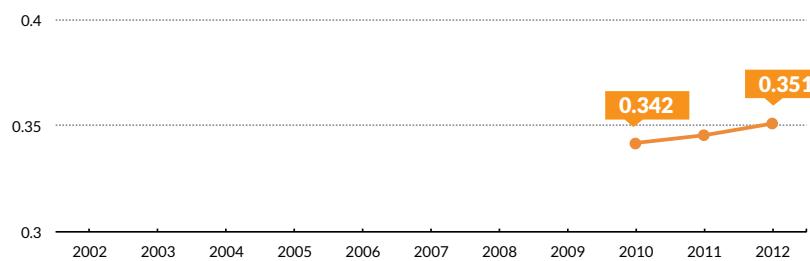
Agriculture % of GDP



Trade balance (current million US \$)



Human Development Index



Eritrea is one of the poorest countries in the world. According to UNDP sources, about two-thirds of the population are living below the poverty line, with an incidence of poverty which is higher in rural areas.

Eritrea's Human Development Index (HDI) puts the country in the 'low human development' category. With an HDI score of 0.351 Eritrea ranked 181st out of 187 countries in 2012.

2. Policy and Planning Framework

2.1. General Framework

Eritrea's Interim Poverty Reduction Strategy Paper (I-PRSP) of 2004 has been the overarching framework to orient development interventions in the country over the last decade (IFAD, 2010).

The long-term objective of the I-PRSP is to attain rapid and widely shared economic growth with macroeconomic stability together with a steady and sustainable reduction in poverty. The I-PRSP is based on four pillars: (i) re-invigorating economic growth; (ii) creating income earning opportunities for the poor; (iii) enhancing access to and utilization of essential services for human development; and (iv) promoting political, economic and social participation of the population by putting in place an enabling environment.

The I-PRSP further states that whilst Government has a particular responsibility for spreading action and creating an enabling environment and macroeconomic framework, the private sector, non-governmental and community based organizations all have a vital role to play in meeting the challenges of poverty reduction.

The transitional medium-term (2004-06) objectives assigned in the I-PRSP were to promote economic growth and development through: (i) developing exports; (ii) increasing agricultural productivity; (iii) attracting investment in high potential growth centers mainly in fisheries, tourism, construction, manufacturing and regional trade; (iv) developing a strong financial sector; and (v) expanding and modernizing the country's basic infrastructure.

Construction, fisheries, tourism, and agriculture were expected to be the lead growth sectors during the period 2004-2006.

The government is currently in the process of articulating a five-year National Development Plan, which is expected to focus on the three priority areas: (i) food security and development of cash crops; (ii) physical and social infrastructure; and (iii) human capital development in the short to medium terms (AfDB Interim Country Strategy Paper for Eritrea, 2009-2011).

Furthermore, it should be noted that Eritrea has a decentralized government with two major levels: the central level, and the zoba (regional) level. Eritrea is divided into six zobas.

2.2. Food Security Strategy

Food insecurity appears to be structural in Djibouti, with the country importing about 90% of its food. Eritrea is food insecure with the agricultural sector producing only 60 percent of food requirements even in good rainfall years (IFAD). A national Food Security Strategy was adopted by the government in 2004. The goal of this strategy is to ensure that all Eritreans have sufficient quantity of acceptable quality food at an affordable price at any time and place throughout the country. This is to be achieved by a combination of increases in domestic food production and imports, complemented by food assistance, to meet the supply gap particularly during emergencies such as severe droughts.

IOC-SmartFish (Kurien, John, Lopez Rios Javier. 2013) assessed the extent of the integration of fisheries and aquaculture in Eritrea's food security policies and plans by examining two recent documents: the United Nations Development Assistance Framework (UNDAF) 2007-2011 and the Food Security Strategy (2004).

The UNDAF does not assess the relation between the food insecurity situation in the country and the fisheries sector. Any references to fisheries in the food security section are, as in many other documents, general to many sectors. The proposed response of the UN system, to enhance the food security situation in the country, included increasing the access to credit for the rural poor to diversify their sources of income; and to strengthen the Government's capacity to better food security planning, and developing policies related to agriculture, fisheries and water resources.

In the Food Security Strategy, it is estimated that about 10 percent of all households' income comes from fisheries. In order to ensure national and household food security the proposed strategy has three pillars: increasing agricultural and fisheries production; enhancing foreign exchange earnings through exports; and using food assistance effectively. Under the first pillar, the fishing sector is assessed as one with high potential, given that it is not overcapitalized and most of the stocks are not overfished, and moreover some are considered underexploited. The strategic objectives to achieve higher production in fisheries are the increase in the productivity of the artisanal fisheries through a strengthening of fisher's cooperatives and of resource management and planning. The second pillar is related to fisheries through the expected result that investments and institutional reforms will create a positive environment to develop the fisheries sector and an increase in exports of high value products, generating revenue to buy food.

2.3. Fisheries in Public Policies

As stated above, fisheries is considered one of the lead growth sectors in the country in the 2004 I-PRSP.

The policy goal in the fishery sector in Eritrea is the long-term sustainable utilization of fishery resources for the benefit of Eritrea and its people (IFAD. 2010). The objectives are: (i) the provision of employment opportunities for the coastal population; (ii) improvement of the livelihoods of artisanal fishers; (iii) enhancement of food security; (iv) increase in foreign exchange earnings through the exportation of high value fish and fish products, principally to the regional and European markets; and (v) sustainable and balanced use of fisheries resources.

Furthermore, it should be noted that several documents, including the I-PRSP of 2004, call for the government to adopt an integrated approach to the management of the country's natural resources and in particular to introduce an effective Integrated Coastal Area Management Process to ensure the sustainable exploitation of marine and coastal resources. The policy, legal and institutional frameworks have been defined but are not yet operational.

3. Fisheries Resources

Eritrea is located on the southern coast of the Red Sea. The country has a coastline of approximately 3,200 km, of which about 1,200 km is mainland coastline (from the border of Sudan to the border of Djibouti) and about 1,950 km of coastline around the islands forming the Dahlak archipelago (about 360 islands, of which only 10 are inhabited, mainly due to the lack of freshwater). Eritrea's continental shelf covers about 52,000 km² and about 25 percent of the continental shelf is occupied by the plateau of the Dahlak archipelago. About 19 percent of the shelf is less than 30 m deep and is therefore off limits to trawling activities (FAO. 2014-2015). The country claims an Economic Exclusive Zone (EEZ) of some 121,000 km² (Marriott and Snijman. 2013).



The Eritrean marine and coastal environment provides a diversified range of ecosystems including coral reefs, sea grasses, seaweeds, and mangroves which provide nursery, shelter and feeding grounds for thousands of species including fish, crustaceans, sponges, algae and molluscs. Eritrea's coral reefs are amongst the best preserved and healthiest in the world and mangrove forests are present in about 380 km of coastline and cover an area of about 74 km² (IFAD. 2010).

The Red Sea has no permanent streams flowing into it and the waters contain limited nutrients, except in the south where the exchange of nutrient rich water with the Indian Ocean supports higher fisheries productivity. The waters of the southern part of the Red Sea are thus highly productive in part due to allochthonous advection of monsoon upwelled nutrient rich waters through Bab El Mandab (FAO. 2014-2015). This productivity supports substantial populations of over 1,000 species of fish and 220 species of corals.

Based on the last survey conducted at the end of the 1990's by IFREMER, a French research institute, the aggregated maximum sustainable yield (MSY) for main commercial species in Eritrean waters was estimated at about 80,000 MT per year. In particular, the estimated MSY per main group of species was as follows: 17,000 MT of demersal fish; 5,000 MT of coral demersal fish; 24,000 MT of small pelagics; 6,000 MT of large oceanic pelagics; 5,000 MT of sharks; 500 MT of shrimp; and 500 MT of lobster.

The main commercial species include: reef demersal fishes such as groupers, snappers, emperors, grunts and job fish; demersal fishes such as lizardfish, threadfin breams and catfish; small and medium pelagics such as sardines, anchovies and mackerels; tuna and tuna-like species and sharks; shell fishes such as shrimps, crabs and lobsters; cephalopods such as squids, octopus and cuttlefish; and other aquatic species such as sea cucumber, snail nail and trochus.

Historically the Eritrean fishery sector produced high annual catches, greater than 20,000 MT per year in the 1950s and 1960s, of which over 80 percent were small pelagic. However, as a result of conflicts with Ethiopia the fishery sector collapsed, the catch dropped to about 4,000 MT by 1972, fishing fleets were destroyed and fishers turned to other activities or fled the country (IFAD.2010). Since 2000, recorded catches have not exceeded 10,000 MT per year with the traditional/artisanal sector accounting for less than 10 percent and the temporarily licensed foreign fleet for more than 90 percent of the total.

Eritrea has some potential for both freshwater and marine aquaculture development. Both resources are currently under-exploited.



KEY INFORMATION AND FIGURES ON THE FISHERY AND AQUACULTURE SECTOR

4. Fishery Sector

4.1. Status of Resources

Fishery resources in Eritrean waters are under-exploited. Based on an estimated fishery production of less than 10,000 MT per year and an estimated aggregated MSY of approximately 80,000 MT, it can be assumed that only 15 percent of the fishery potential is being achieved.

This situation has resulted from a combination of different factors including the disruption of the fishery sector by the border conflict with Ethiopia, limited capacity and capital base of local fishers, and some weaknesses in the current fishery governance system.

4.2. Major Dynamics in the Fishery Sector

The fishery sector in Eritrea is composed of two major commercial fishing components, namely the artisanal fisheries and the foreign industrial fisheries. The artisanal fisheries account for less than 10 percent of the total catch; this was approximately 8,800 MT in 2006.

There are seven main fishing port facilities along the coast; with Massawa, in the North, being the major centre of the Eritrean fishing industry, and Assab, in the South, being the second most important fishing port. More recently, a number of ports have seen their facilities upgraded and port improvements have been accompanied by the purchase of seven modern freezer vessels, the establishment of a processing plant and the improvement of fish control laboratories (Marriott and Snijman. 2013).

There is also a third component comprising foot fishers and fishers using non-motorized canoes mostly operating in shallow waters and the intertidal zones. This fishing component is mainly for subsistence. Foot fishers, primarily elderly women and young children, collect sea cucumbers, snails and other intertidal species for sale on the local market. Cast nets are also used by these foot fishers to harvest fish for immediate local consumption (FAO. 2014-2015). Canoe operators often engage less in fishing and more in passenger transport, ferrying people from the beach to their anchored boats. Fishers in this category are not licensed and their numbers are unknown (IFAD. 2010).

Traditionally, fishing in Eritrea is reserved for men and a cultural bias precludes women's involvement at sea. However, women in coastal areas also engage in snail and shell collection and undertake foot fishing near their residences (IFAD. 2010).

Artisanal fisheries

For the most part, artisanal fisheries use two types of wooden planked boats: houris, which are 8-13m long and equipped with outboard engines, and sambuks which can be up to 16m long and equipped with inboard engines. Houris can take up to 5 crew members and sambuks up to 9 crew members. There are also a limited number of fishers using improved motorized fiberglass boats. In 2002, there were about 60 fiberglass boats, most of which were imported from neighbouring countries including Saudi Arabia and Yemen (FAO. 2014-2015).

Fishers make an average of 2-3 trips per month for seven months a year. The larger sambuks can stay be out at sea for several weeks at a time. The main fishing gear used by artisanal fishers includes gillnets for pelagics and hand lines for demersal fishes. Fish on board is preserved with ice with the

exception of sharks, which are dried. It should be stressed that a lot of unregulated fish trading takes place, particularly with Yemen.

The artisanal fishers operating motorized boats are registered and their number is estimated at about 3,300, of which 1,112 belong to fishers' cooperatives. The registered artisanal fishers own about 793 boats, of which 602 (76 percent) are owned by the cooperative members. One of the main limitations of the artisanal boats is their small size with a capacity of 0.5-1.0 MT. Moreover, most of the artisanal boats are currently not functional either due to age, lack of maintenance as a result of the shortage of spare parts, inadequate gear, infrequent supply and high fuel costs (IFAD. 2010).

The development of fishers' cooperatives started in 1993, with the assistance of UNDP/UNCDF/FAO. The cooperatives were accorded legal recognition under the framework of Fisheries Proclamation 104/1998 and are registered by the Ministry in charge of fisheries. There are 37 cooperatives with approximately 1,200 all male members. The cooperatives have received various support including the provision of inputs and credit from six Cooperative Unions organized and managed by the government (IFAD. 2010). Experience has shown however that the cooperatives have not been very successful and do not contribute adequately to the objective of developing the artisanal fisheries. The border conflict with Ethiopia is a major contributing factor to the poor performance of the cooperatives.

There is another important actor in the development process of the fishery sector in Eritrea, namely the National Fishery Corporation (NFC), which is a government owned institution. The NFC undertakes production, processing and marketing of fish through its subsidiaries including the Beilul Fishing Company. The Beilul Company owned 16 fiberglass boats in 2003 but most of the boats are no longer operational due to a lack of spare parts and fuel shortages. Recently, the company has tried to modernize its fleet by purchasing bigger boats with a carrying capacity of 40-45 MT. However, the fleet could not be operationalized due to a lack of certified captains to operate such boats (IFAD. 2010).

The Government of Eritrea, with the assistance of development partners, including the African Development Bank (AfDB), UNDP, FAO, JICA, the Dutch Government and NGOs, have been trying to resuscitate the fisheries sector since 2000. Whilst they have managed to rehabilitate certain infrastructure including jetties, landing stages, cold storage facilities and ice making machines at official landing sites, no major efforts have been placed on strengthening the capacities of the Ministry in charge of fisheries, reorganizing the cooperatives and supporting the effective marketing of fish, particularly to export markets. Thus, fish production has not increased substantially over the last decade (IFAD. 2010).

Industrial fisheries

In the early 2000's, it was noted that small trawlers (Mediterranean type), as well as large powerful industrial trawlers, in addition to longliners, were increasingly active in Eritrean waters (FAO 2014-2015.). The main targets of the small industrial trawlers were lizardfish and threadfin breams, catfish and grunts. Only about 10 percent of the industrial catch was landed and consumed locally and 90 percent was exported as whole frozen fish with no local value-added processing.

Fishing vessels from Saudi Arabia, Yemen and Egypt were licensed to fish in Eritrean waters until 2006. Currently, about 70 fishing licences are issued annually to trawlers to fish in the Eritrean EEZ (IFAD. 2010).

4.3. Fishery Production

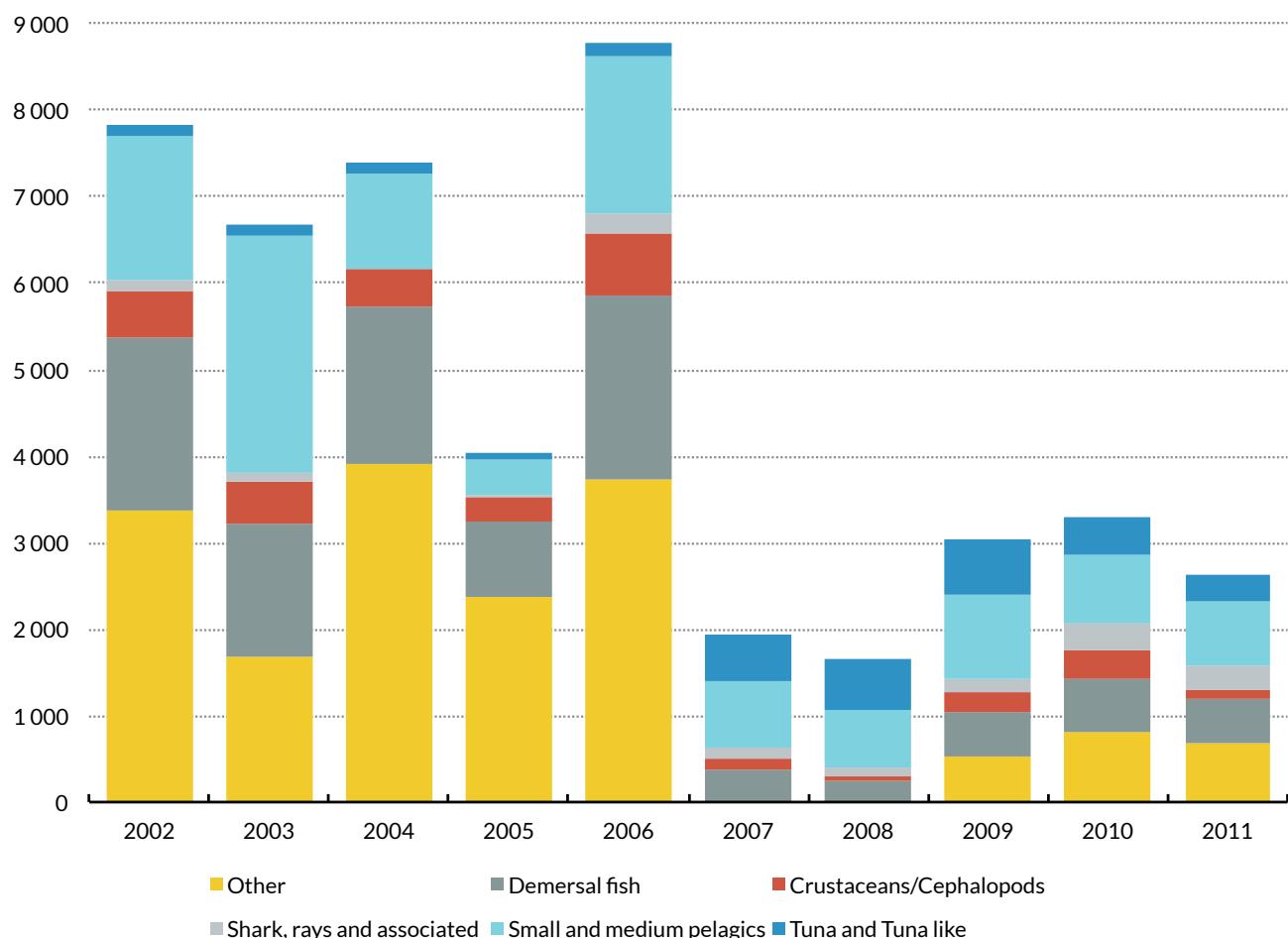
According to FAO FishStat data, domestic fish production in Eritrea has varied between 2,000 MT and 12,000 MT per year over the period 2000-2011. Since 2007, total fish production has

not exceeded 3,000 MT per year. These figures should however be considered with caution since foreign fishing vessels sell their catches directly to foreign markets without proper accounting in Eritrea. In addition, a relatively large quantity of fish and fishery products from the artisanal fisheries are informally exported to neighbouring countries, in particular Yemen.

Since 2007, 25 to 40 percent of fish production is comprised of small and medium pelagics, in particular sardines and anchovies (FAO FishStat). These small pelagics are easy for artisanal fishers to catch, but due to the lack of demand (local and foreign) this resource is not being fully exploited (IFAD. 2010).

Domestic marine fish production in Eritrea (in tons)

2014 - Figure 6 - Source FAO FISHTAT J (2002-2011)



4.4. Fish Utilization

Fish production in Eritrea has traditionally been oriented towards regional and international markets as domestic demand is low. Generally, Eritreans prefer meat despite the fact that meat is double the price of fish. Apart from habit, other constraining factors for local fresh fish markets outside coastal areas include poor distribution networks and a lack of basic cold chains throughout the country.

Two internationally accredited factories (since the end of 2009), the Eritrean Marine Products

Company (EMPC), which operates a processing plant with a capacity of 10 MT of fish per day and the ERIFISH Processing Plant, which operates a processing plant with a capacity of 15 MT of fish and 4 MT of shrimps per day, are involved in the export of whole and gutted fish, fillets and shrimps to EU markets.

Indeed, the Ministry in charge of fisheries has received major assistance from UNDP to upgrade the Fish Quality Control Laboratory at Massawa and the processing plants. Assistance included refurbishing the laboratory, training laboratory staff and upgrading the capacity of processing plant personnel in hazard analysis and critical control point (HACCP) principles, good hygiene practices and other aspects of fish quality assurance (IFAD. 2010).

There is another factory on the coast, the Assab Processing Plant. This factory is not involved in fish processing but is engaged in the buying and selling of fresh fish in local markets. There are also another 15 registered fish retailing operators along the coast.

According to regulations, registered fishers and cooperatives are obliged to land their catch at designated landing sites for inspection and grading. There are three landing sites on the northern coast (Dahlak, Massawa, and Gellalo) and four landing sites on the southern coast (Tio, Eddi, Barasole and Assab). Landed fish are sorted, graded into grades A, B or C, weighed and iced for distribution. Poor quality fish and discards are processed into fishmeal. At present, fishers' cooperatives have no capacity for fish marketing outside the coastal areas and this service is provided by NFC (IFAD. 2010).

Small artisanal fishers who land their catch outside official landing sites sell directly on the beach to buyers. These fishers are numerous but their catch is small and no records are kept regarding their catch or sales.

As part of its food security strategy the government has promoted fish consumption through price subsidies and support for local distribution networks outside the coastal regions. The Ministry in charge of fisheries is also undertaking fish promotion campaigns.

Furthermore, the government has promoted several initiatives aimed at developing regional fish trade. These have included the promotion of experimental sardine canning for the Sudanese and Egyptian markets and the creation of enabling conditions to support the export of high valued fish (fresh/frozen) for markets in Saudi Arabia and the Gulf.

5. Aquaculture Sector

The importance of aquaculture in the Eritrean economy is increasingly recognized in national development plans and strategies aimed at achieving food security and alleviating poverty. At present, 338 reservoirs and 324 dams have been constructed in the highlands and western lowlands. Seventy reservoirs have been stocked with mainly tilapia and carps for a trial period. The results so far indicate good potential though productivity is low (IFAD. 2010).

FAO recently provided technical assistance to the Ministry in charge of aquaculture (Ministry of Marine Resources) for the preparation of a draft National Aquaculture Development Strategy and Plan for Eritrea.

In line with the increased and acknowledged importance for aquaculture development in the country, IOC-SmartFish also provided support for Eritrea to participate in the regional training workshop on environmental impact assessments (EIAs) and aquaculture management.

Furthermore, mariculture has seen some progress in recent years with the culture of seaweed in

the coastal areas.

No data on aquaculture is available in the FishStat database.

6. Fish Import and Export

Eritrea has been a net fish exporter for a long time, although exports to regional and international markets have recently declined. According to FAO FishStat data, in 2009, fish exports were valued at approximately US \$1.6 million and fish imports were valued at approximately US \$106,000. Besides the formal export of fish and fishery products, there is an important informal regional trade, particularly to Yemen.

Fish import

Over the last decade, canned tuna and sardines have dominated fish imports in Eritrea.

Fish export

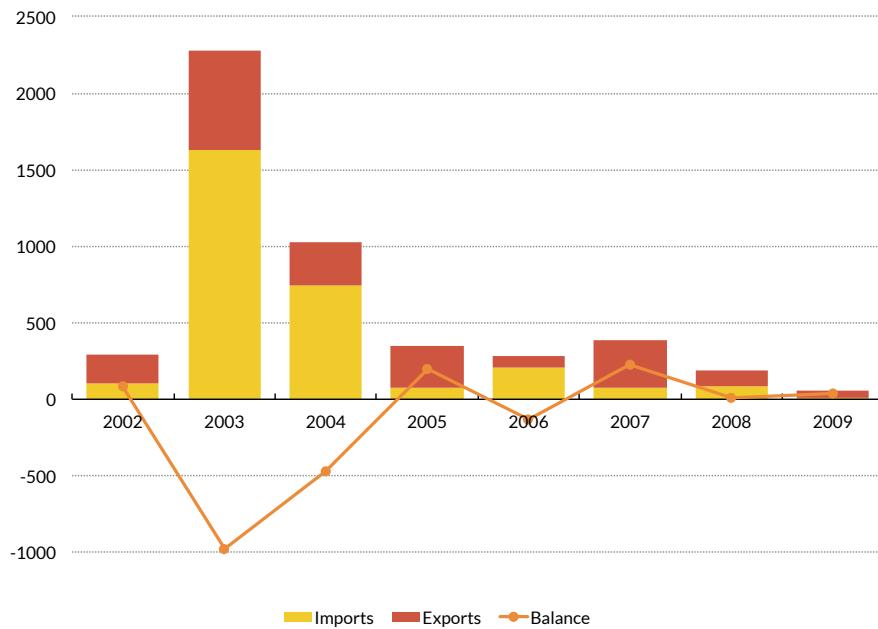
In the 2000's exports of various fish species (groupers, emperors, snappers, grunts, lizardfish, threadfin breams and shrimp) used to be undertaken in two ways. They were either exported directly by licensed foreign vessels with no landing in Eritrea, or exported through parastatal processing plants and marketing companies including EMPC and ERIFISH. In 2001, over 15,450 MT were exported to Egypt, Saudi Arabia, the UK, France and the Netherlands (FAO. 2014-2015). Since 2007, the government has refused licences to foreign fishing companies (mainly from Egypt and Saudi Arabia) and has attempted to promote local companies instead. This has resulted in a dramatic decrease of official fish exports to approximately 2,000 MT a year.

To facilitate the export of high-value perishable seafood, including fishery products, a new airport has been constructed in Massawa and Massawa port has been rehabilitated and is also being developed (African Development Bank Group. 2009). Furthermore, Eritrea started exporting sea cucumbers from the Red Sea in the early 2000's on a small scale to markets in Asia. Nowadays, the share of sea cucumber in total exports is more than 50 percent, as shown in Figure 9 below.

Traditional external markets include Egypt, which absorbs about 70 percent of exports, Saudi Arabia, which takes about 28 percent, and European countries (Netherlands, France, Germany, and United Kingdom), which take about 2 percent (IFAD. 2010). In 2009, the main fishery products exported to the EU were fresh grouper, red snapper and kingfish with a total weight of around 8 MT; it was assumed that most of this production was generated by the foreign industrial fleet, especially trawlers (Marriott and Snijman. 2013). More recent data from COMESA indicates that in 2012, the EU market absorbed about 6.5 percent of the fish exports from Eritrea.

Fish trade balance in Eritrea in volume (in tons)

2014 - Figure 7 - Source FAO FISHTAT J (2002-2009)



Fish Imports by category in Eritrea in value (% of \$)

2014 - Figure 9 - Source FAO FISHTAT J (2002-2009) - Average period

2002 - '05

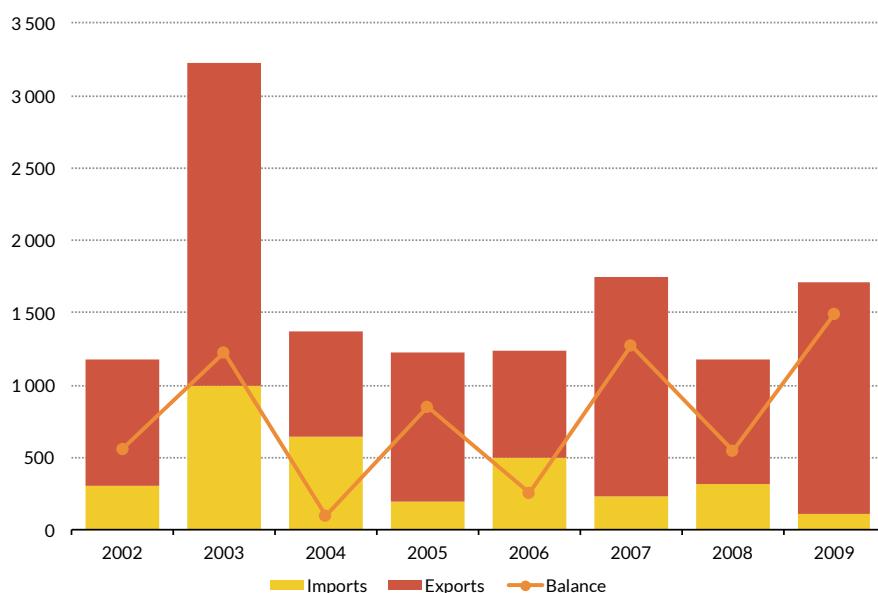


2006 - '09



Fishtrade balance in Eritrea in value (in '000 US \$)

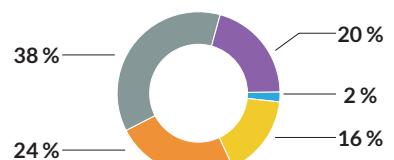
2014 - Figure 8 - Source FAO FISHTAT J (2002-2009)



Fish Exports by category in Eritrea in value (% of \$)

2014 - Figure 10 - Source FAO FISHTAT J (2002-2009) - Average period

2002 - '05



2006 - '09



SMALL PELAGIC	LARGE PELAGIC
OTHER	MOLLUSC-CRUSTACEAN
SEA CUCUMBER	PROCESSED FISH

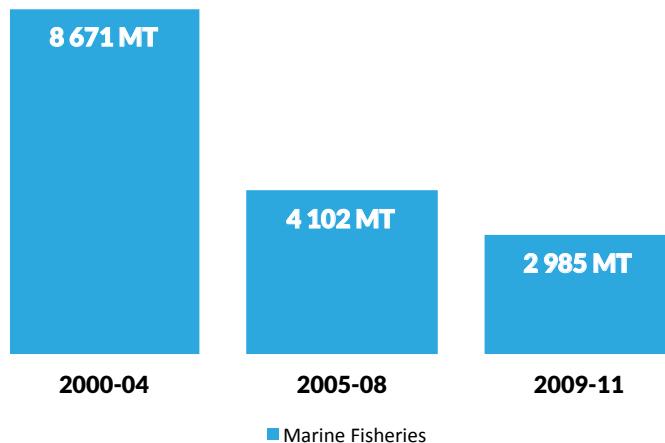
7. Contribution of the Fishery and Aquaculture Sector to the Economy

Despite the significant fishery potential of the Red Sea, the fishery sector has played a secondary role in the social and economic development of Eritrea. Meanwhile, it is estimated that the sector accounts for almost **3 percent of national GDP** (IFAD. 2010), which is significant. **Contribution of the sector to budget revenue**, whilst unknown, may also be substantial through the issuance of fishing licences.

According to FAO FishStat data, **total fish production** by domestic fleets is currently estimated at about 3,000 MT per year. However, this production does not include fish production by foreign fleets in Eritrean waters and fish production by artisanal fisheries that is exported informally to regional markets, in particular to Yemen.

Total fish production in Eritrea, volume (MT)

2014 - Figure 11 - Source FAO Fishtat J (2000 -2011)



The modest participation of the fishery and aquaculture sector in the economy is also reflected in **foreign trade** and **employment** figures. According to the Fisheries and Food Security in the ESA-IO Region (Kurien John, Lopez Rios Javier. 2013), the value of exports of fishery products accounted for only 0.6 percent of food and agriculture exports in 2011. With regards to the contribution of the sector to employment in the country, it is estimated that approximately 3,000 people are involved in fishing activities. The number of people who are indirectly involved in the fishery sector is not known.

According to FAO estimates, per capita **fish consumption** in Eritrea is also low, at 0.5-1 kg in 2009, well below the African average of 9.4 kg. This indicator is likely to hide an uneven behaviour in consumption, since fish consumption is higher in the capital and bigger cities, and is surely stronger in coastal communities. Total fish supply is based mainly on domestic production, and the fall in total landings is the main factor behind the reduction in per capita consumption since the year 2000 (Kurien John, Lopez Rios Javier. 2013).

Eritrea is amongst the countries where fisheries play a less significant role in national **food security**. According to FAO estimates, in 2009 fishery products contributed to only 2.5 percent of animal

protein intake, way below the African average of 19.1 percent. Total fish protein intake peaked in 2000, but has been declining ever since, bottoming out at 0.11 grams per capita per day.

Fish consumption in Eritrea (in live weight)

2014 - Figure 12 - Source FAO Fish and fishery product, world apparent consumption FAO STAT (2000 - 2009)

	Total fish supply quantity	Fish supply per capita	Fish protein per capita
2008 - 09	1,818 MT	0.4 kg/y	0.1 g/day
2004 - 07	5,538 MT	1.23 kg/y	0.3 g/day
2000 - 03	8,696 MT	2.25 kg/y	0.6 g/day



POLICY, INSTITUTIONAL AND LEGAL FRAMEWORK OF RELEVANCE FOR THE FISHERY SECTOR

8. Fishery Policy and Planning

There is currently no specific policy and planning document for the fishery sector in Eritrea but the government set out a policy direction for the sector in its Interim Poverty Reduction Strategy Paper (I-PRSP) of 2004. The overall objectives for the fishery and aquaculture sector are to:

1. Increase the profitability of artisanal fisheries by strengthening the fishers' cooperatives and promoting co-management mechanisms with the cooperatives;
2. Boost export earnings by creating a suitable investment climate to attract both national and foreign investors and enhance the profitability of industrial fishing; and
3. Strengthen resource management and planning for sustainability to serve as a catalyst to facilitate private investment and protect the environment (through *inter alia* improved research and MCS).

The I-PRSP of 2004 further states that the government will continue to encourage private investment in modern fishing fleets and fish processing facilities, including joint ventures with foreign investors. It further states that to increase the profitability of artisanal fisheries, other actions will be promoted including assisting cooperatives to establish Marine Protected Areas (MPAs), increasing licence fees for foreign fishers, enhancing surveillance and enforcement of industrial fisheries, and assisting cooperatives to rebuild the small pelagic fishery through improved infrastructure and training.

Furthermore, the Government of Eritrea has recently entered into a dialogue with IFAD to prepare a Fisheries Development Project (FDP). The FDP would focus on reducing poverty and food insecurity amongst artisanal fishing communities by training them in modern fishing techniques, equipping them with boats and fishing gear and building their capacity to market their catch domestically and in external markets. The FDP would also support the establishment of a functional cooperative system to improve fishers' access to credit and inputs and empower them to play a greater role in decision-making processes. The project would also address capacity building issues of the Ministry in charge of fisheries with a view to *inter alia* enhancing the regulatory framework and implementing an Integrated Coastal Area Management Plan.

9. Institutional Framework

9.1. Fisheries Administration

Fisheries in Eritrea fall under the mandate of the Ministry of Marine Resources (MMR) within the legal framework provided by the Fisheries Proclamation (No.104/1998). In particular, the MMR is mandated to promote, guide and support the sector, but it is also responsible for setting up and enforcing standards and regulations for practices pertaining to fisheries.

The MMR has two operational departments, namely the Fisheries Resources Development Department (FRDD) and the Fisheries Regulatory Services Department (FRSD), as well as two Divisions one of which deals with Training and Human Resources Development.

The FRDD has three divisions: the Artisanal Fisheries Development Division (responsible for

extension services to artisanal fishers and cooperatives); the Project Analysis and Infrastructure Development Division (whose mission includes providing support for construction, maintenance and the supervision of fish landing facilities); and the Inland Fisheries Development Division (which is also responsible for aquaculture).

The FRSD focuses on fisheries management and is composed of three Divisions: the Marine and Coastal Management Division (responsible for research, marine resources management, data collection and management, and environmental management); the Fish Inspection and Quality Control Division (involved in quality assurance and certification services including managing the quality control laboratory in Massawa and conducting post-harvest research and training); and Fish Industry Development Division (responsible for fleet licensing, promotion of investment in the fishery sector, and MCS).

MMR operations are decentralized in two zoba (regional) branches; one is located in the north (Massawa) and the other in the south (Assab). Each branch has a licence, monitoring and control unit, which issues fishing licences, ensures control and monitoring of fishing operations, provides marketing services and ensures data collection (IFAD. 2010).

In 2010, the MMR had 531 staff that could be considered sufficient to adequately fulfill its mandate. However, there was a lack of experience and capacities in key areas of fisheries development and management, including in regulatory services (IFAD. 2010).

9.2. Fisheries Research and Training

Fisheries research

The University of Asmara and the Marine and Coastal Management Division of the FRSD carry out fisheries research activities in Massawa. Data from the industrial trawlers and artisanal fisheries are collected and analyzed and their findings are released in reports. However, these reports are largely descriptive and do not meet the need to provide scientific advice to adequately support fisheries management (FAO. 2014-2015).

The College of Marine Science and Technology (COMSAT) has particular expertise in fisheries research, in particular in relation to the evaluation of small pelagic resources (IFAD, 2010). The COMSAT was established in June 2005 under the auspices of the MMR and the Ministry of Education (MOE) to fulfill several objectives in terms of training and education and also in terms of generating and disseminating knowledge on marine resources in Eritrean waters.

Fisheries training

The Training and Human Resources Development Division of MMR is responsible for upgrading the capacity of junior and senior staff of the Ministry through on-the-job training and formal training in local and foreign institutions (IFAD. 2010). It supports the COMSAT in providing practical training in fishing to undergraduates of the college. It also manages the Hirgigo Fisheries Training Centre (HFTC) which was established in 1992 for the purpose of providing skills development training for traditional and emerging fishers including women, youths and demobilized soldiers, and upgrading the management capacities of MMR staff. Training courses include fishing techniques, safety at sea, navigation, boat repairs and maintenance, cooperative development, extension activities, post-harvest management and fish marketing, amongst others (IFAD. 2010).

The COMSAT is currently offering four degrees and five diploma programmes within the following four academic departments: the Department of Applied Marine and Fisheries Science (AMFIS); the Department of Aquaculture (AQUA); the Department of Marine Biotechnology (MBT); and the Department of Marine Engineering (ME). A total of 965 students have been admitted to the college since 2005 under these different programmes (IFAD. 2010).

9.3. Other Public Institutions concerned by Fisheries

Other public institutions concerned by fisheries include the Environment Department under the Ministry of Land, Water and Environment (MLWE). The Environment Department is responsible for ensuring that development activities in the fishery sector are carried out in line with environmental rules and regulations in coastal areas. The Environment Department is expected to work closely with MMR for the preparation of an Integrated Coastal Area Management Plan.

10. Legal Framework

10.1. Fisheries Legislation

The principal law governing fisheries in Eritrea is the Fisheries Proclamation (No. 104/1998), which dates back to 1998 and was prepared with the assistance of the FAO. It makes provisions for several management measures including: resource management and conservation; preparation and implementation of Fisheries Management Plans (FMPs); protection of endangered fish species; issuance of licences to local and foreign vessels along with fisheries access agreements, regulation concerning the stowage of gear, the species, mesh sizes and other characteristics of fish and other aquatic organisms that can be caught; protection and conservation of marine resources including the establishment of Marine Protected Areas (MPAs); declaration of closed seasons and closed areas; fishing depth and distance from the coastline; and specifications of fishing methods and gears (Marriott and Snijman. 2013).

The Minister in charge of fisheries is to be assisted by a Fisheries Advisory Council, which should provide advice on the management and development of fisheries. The Minister can make regulations to implement the Proclamation (IFAD. 2010).

The Proclamation of 1998 has not been reviewed since its enactment but it has been supplemented by a range of legal notices focusing on fisheries management and fish quality to meet market demands, particularly in the EU markets. These legal notices included the Fishery Product Proclamation, the Foreign Fishing Vessel Regulations, the National Fishing Vessel Regulations, and the Fishery Product Hazard Analysis Critical Control Points Regulations. These legal notices, as key elements in the management of fisheries, have to be regularly reviewed (Marriott and Snijman. 2013).

Furthermore, an aquaculture product regulation was adopted in 2003.

Although the coverage of these legal notices is relatively good with regard to key challenges faced by the fishery sector, it is felt that the details of the legislation and regulations are not sufficient to manage and control a fast-growing industry and to adequately address issues related to increased IUU fishing in Eritrean waters, including the provision of an enabling basis for a more effective MCS. It is in this context that the ACP Fish II Programme provided technical assistance to the MMR in 2013 to review and update the Fisheries Proclamation of 1998.

The main output of the ACP Fish II intervention is a draft amended Fisheries Proclamation, which was reviewed during the course of a national workshop. The Proclamation has been updated to include provisions for VMS, FMPs, flags and Port State Measures. The section on aquaculture was entirely replaced as was the section on FMPs. A new section on management principles to be observed by the Minister on the application of the Proclamation was also inserted (Marriott and Snijman. 2013).

The offences were also revised by creating categories of offence and revised penalties. As it was felt that the Penal Code penalty provisions were inappropriate for fisheries offences, the use

of administrative penalties has been recommended by consultants and extended (Marriott and Snijman. 2013).

- Further recommendations of the ACP Fish II intervention include the following:
- The most recent amendments to the organization of the offences section, by categorization, should make determination of penalties and severity of offence much clearer;
- The decision to amend, rather than to draft new legislation, should ensure that the amended Proclamation becomes law in the very near future;
- The amended Fisheries Proclamation should serve Eritrea for the next 10 years or so, depending on any changes in regional fisheries management regimes.

10.2. Other Elements in relation to Legal Aspects

Eritrea is a member of the Indian Ocean Tuna Commission (IOTC) and the Committee for Inland Fisheries and Aquaculture of Africa (CIFAA).

The IOTC is an intergovernmental organization mandated to manage tuna and tuna-like species in the Indian Ocean and adjacent seas. Its objective is to promote cooperation among its members with a view to ensuring, through appropriate management, the conservation and optimum utilization of stocks and encourage the sustainable development of fisheries based on such stocks. The IOTC was established by an Agreement under Article XIV of the FAO Constitution in 1993. The Agreement entered into force on 27 March 1996. Under Article XIV of the FAO Constitution, bodies established by such agreements may have full management powers.

The CIFAA was established by the FAO Council in 1971 as an Article VI FAO Regional Fishery Body. CIFAA is an advisory body with the mandate of promoting the development of inland fisheries and aquaculture in Africa.

All these institutions and arrangements contribute to fisheries management, with particular reference to the exchange and sharing of scientific data and fisheries management, in particular for transboundary and high-sea regional stocks of tuna and deep-water species.

11. Fisheries Management

The current fisheries management system in Eritrea consists mainly of a fishing licensing system aimed at regulating access to the fishery and a set of technical conservation measures focused on industrial fisheries. In particular, regulations governing industrial fisheries include measures to protect the coastal ecosystem for example, a minimum depth of 30 m, a minimum distance of 6.5 nm from the shore and 4 nm from any island. Moreover, during the hot months of July through September, all industrial fishing operations are prohibited in Eritrean waters (FAO. 2014-2015).

In the meantime, the government has promoted several initiatives aimed at ensuring protection of Eritrean biodiversity resources, including the preparation of a National Biodiversity Strategy and Action Plan (NBSAP) to promote the coordinated management of natural resources including coastal resources. Despite its concerns for environmental conservation, Eritrea still lacks adequate institutional capacity to manage marine ecosystems (IFAD. 2010). Nevertheless, regulatory actions to preserve vulnerable marine ecosystems are being effectively implemented including a ban on the export of live corals and spear fishing and limited access for tourists to some islands in the Dahlak archipelago.

Furthermore, the Ministry in charge of fisheries developed a Fisheries Management Plan (FMP) with technical support from FAO in 2006. However, the Ministry has too many human and financial constraints to be able to implement the FMP.

It should be also highlighted that the IFAD project, currently under preparation, would include several activities aimed at improving various management services such as data collection, the licensing of artisanal and industrial fishing vessels, and enhancing the MCS of both the industrial fishing fleet and the motorized artisanal fisheries which have not been covered in the past.

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COUNTRY REVIEW - 2014

ERITREA



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