

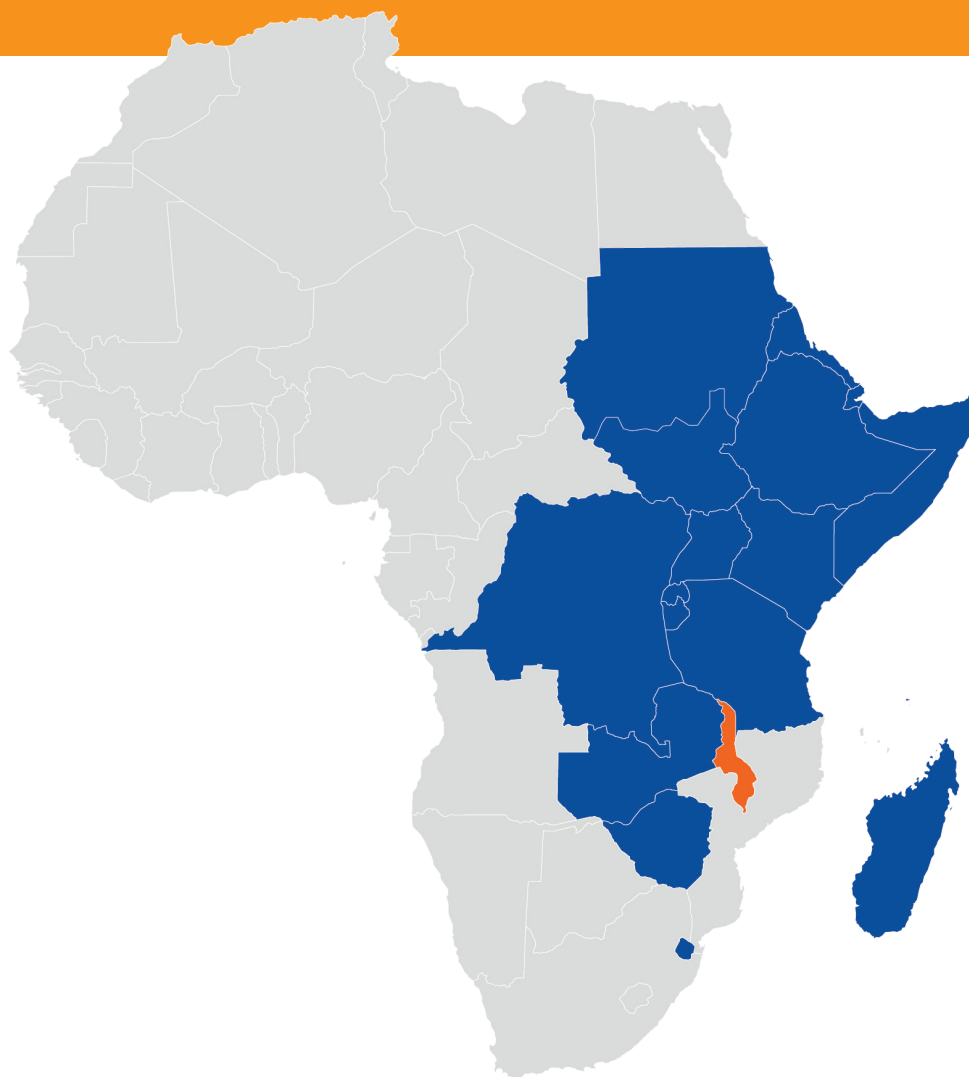


## Fisheries in the ESA-IO Region: Profile and Trends

### COUNTRY REVIEW

2014

# MALAWI





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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 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 Malawi.

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.



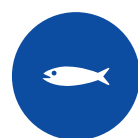
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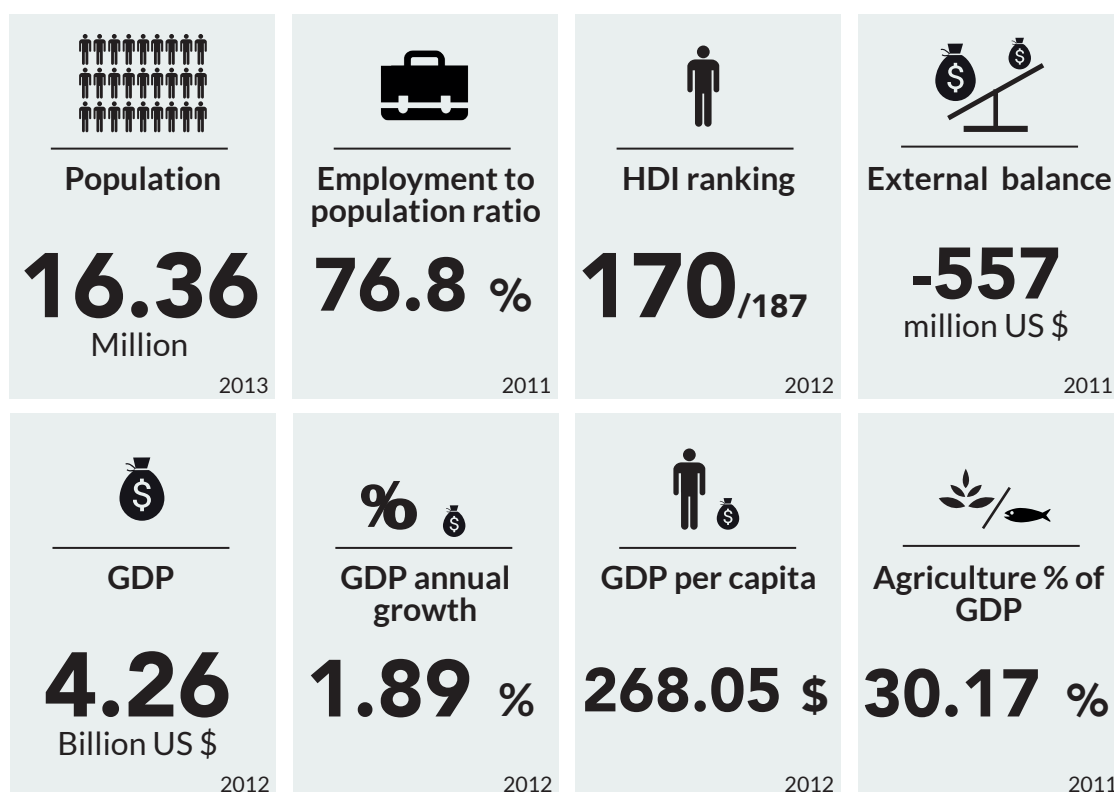


# BACKGROUND INFORMATION

## 1 Brief on the National Economy

### Key figures on Macro economic data

2014- Source World data Bank - Latest reported data



Malawi's economy is primarily driven by the agriculture sector, which contributes to approximately one third of the GDP. Land is the country's most valuable resource considering its agro-based economy. Most land is used for food production, mainly maize, and for tobacco, which is the main export commodity. Growth of the national economy is highly correlated to any growth and development in agriculture, and thus to annual climatic conditions. The manufacturing sector contributes to about 11 percent of GDP. Malawi has recently begun mineral exploitation, with the opening of the Kayelekera uranium mine in 2009, and oil prospecting.

In 2011 and 2012, Malawi faced serious macroeconomic challenges. In 2012, the new Government instituted bold macroeconomic policy adjustments, including devaluation of the national currency by 49 percent, with a move towards a flexible exchange rate regime, a tightening of monetary and fiscal policies and the removal of subsidies for fuel; the new Government has also re-engaged its arrangements with the IMF, resulting in the resumption of direct budget support by donors (OECD et al. 2013).

In 2012, total GDP in Malawi was about US \$4.3 billion (World Bank). The GDP growth rate was 4.35 percent in 2011 and 1.89 percent in 2012. With a total estimated population of 15.9 million inhabitants, GDP per capita was approximately US \$268 in 2012.

The new national development plan, the Malawi Growth and Development Strategy II (MGDS II, 2011-2016) was officially launched in September 2012 along with an economic recovery plan. The MGDS II aims inter alia at re-prioritizing expenditure towards sectors that have the potential to boost economic growth and export earnings, including the agriculture sector.

The private sector is recognized as the engine of growth in Malawi. However, the business environment has deteriorated in recent years. The World Bank's 'Doing Business 2013' report ranked Malawi 157 out of 185 economies in its ease of doing business; six rankings lower than in 2012. The key constraints to private sector development and competitiveness in Malawi include weak infrastructure, high transport costs, limited access to finance, a weak skill base, red tape and a high tax burden (OECD et al. 2013).

Furthermore, Malawi is faced with a relatively high inflation rate, averaging 10 percent per year.

Malawi's trade deficit was MKW 171.9 million in 2011 (Africa Yearbook, 2013), i.e. the equivalent of approximately US \$711.4 million. The major export commodity is tobacco, which had a total value of US \$481 million in 2012 (OECD et al. 2013).

Malawi is a member of SADC and COMESA. It is a signatory of the COMESA Customs Union and the SADC Free Trade Area and is in the process of aligning its tariffs with the COMESA/SADC thresholds. As a landlocked country, Malawi faces high transport costs and delays in the clearance of goods at the border, resulting in a low competitiveness. A number of reforms and programmes to boost regional trade are already underway, including developing regional transport corridors (OECD et al. 2013).

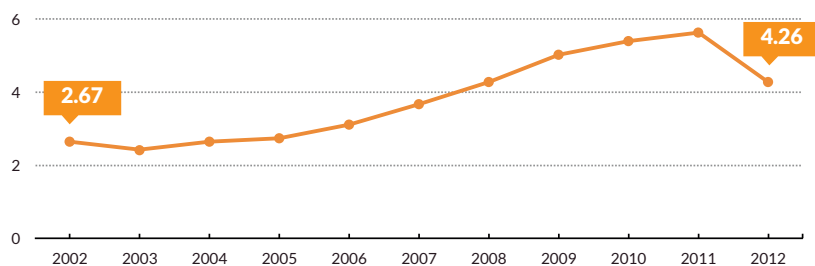
The active population in Malawi was an estimated 7.9 million in 2012 (Mehler A.; Melber H.; Van Walraven K. 2014). Agriculture, which is a major contributor to national and household food security, employs over 80 percent of the country's workforce (United Nations Country Team in Malawi. 2011).

Malawi's Human Development Index (HDI) puts the country in the 'low human development' category. With an HDI score of 0.418, Malawi ranked 170th out of 187 countries in 2012.

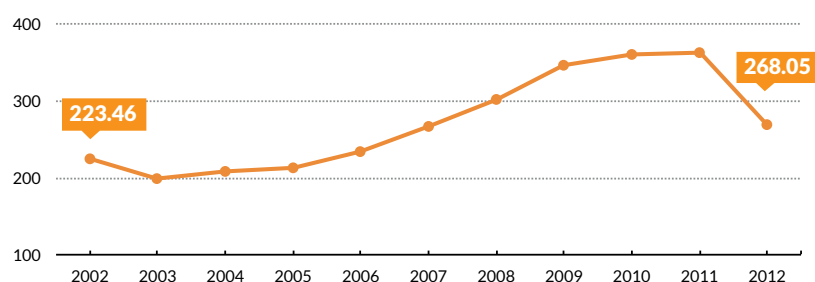
# Trends

2014 - Figure 1-5 - Source World Data Bank - Last ten years

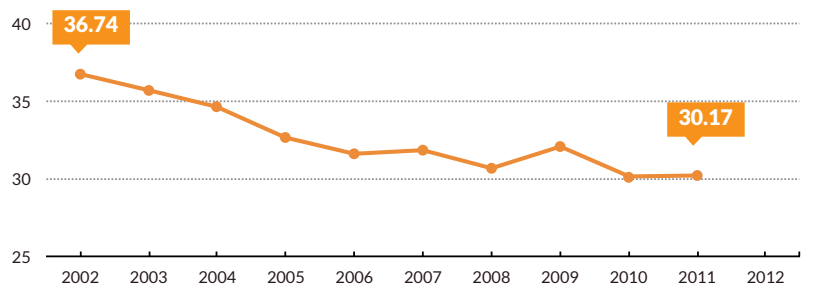
## GDP (current billion US \$)



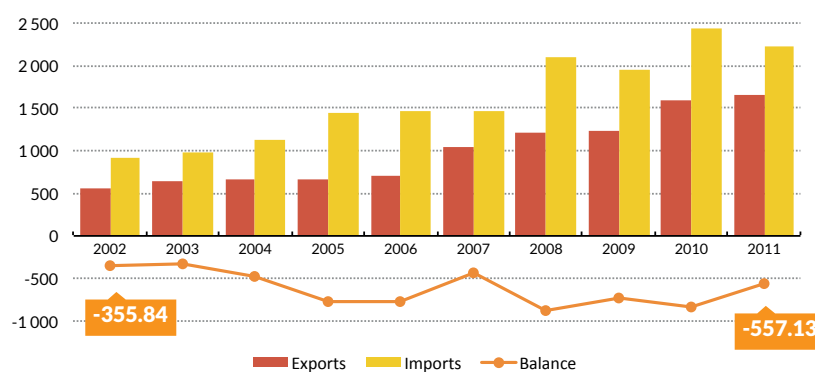
## GDP per capita (current US \$)



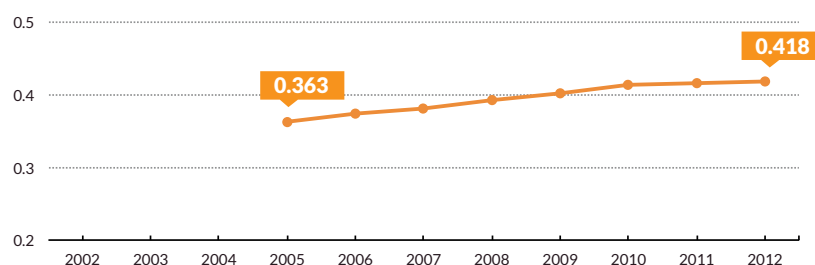
## Agriculture % of GDP



## Trade balance (current million US \$)



## Human Development Index





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## 2. Policy and Planning Framework

### 2.1. General Framework

The MGDS II is the overarching medium-term strategy (2011-2016) to attain Malawi's Vision 2020. The main thrust of the MGDS II is to promote wealth creation and poverty reduction through sustained and inclusive growth. This is expected to transform the country from being a predominantly importing and consuming economy to a predominantly manufacturing and exporting economy.

The MGDS I outlined six priority areas, namely: (i) agriculture and food security; (ii) irrigation and water development; (iii) transport infrastructure development; (iv) energy generation and supply; (v) integrated rural development; and (vi) the prevention and management of nutrition disorders, HIV and AIDS. This policy represented a shift from social consumption as a poverty reduction strategy, to more emphasis on economic growth and infrastructure development (FAO 2005-2015).

The MGDS II identifies six thematic areas in which progress must be made if the overall strategy is to be successful: sustainable economic growth; social development; social support; infrastructure development; governance; and gender and capacity building.

At the same time, in September 2012, the new government launched an 18-month Economic Recovery Plan (ERP) focused on priority sectors and activities, such as commercial agriculture, tourism, mining, infrastructure and information-communication & technology.

One of the aims of the MGDS is to increase the contribution of the agricultural sector to economic growth through enhancing production and value addition for both domestic and export markets. In order to operationalize agriculture-related goals, an Agricultural Sector Wide Approach (ASWA) - a medium-term prioritized investment framework for the agricultural sector - was approved by the Cabinet in 2009. This policy and planning document still seems to be the reference document for the Ministry of Agriculture and Food Security (MoAFS) which is responsible for the overall agricultural sector including crops, fisheries, livestock, agricultural land development and extension services.

Furthermore, it is important to stress that in the past, the management of natural resources in Malawi, including fisheries, was highly centralized. To ensure a bottom-up approach, the management has now been decentralized to local communities and villages.

### 2.2. Food Security Strategy

The long-term goal of the Food Security Policy, prepared by the MoAF in 2006, is to significantly improve the food security of the population. The goal implies increased agricultural productivity as well as diversity and sustainable agricultural growth and development.

The specific objective of the Food Security Policy is "to guarantee that all men, women, boys and girls, especially under-fives, in Malawi have, at all times, physical and economic access to sufficient nutritious food required to lead a healthy and active life."

The concept of food security implies that: (a) all Malawians at all times have both physical and economic access to enough nutritious food for an active, healthy life; (b) the ways in which food is produced and distributed should be environmentally friendly and sustainable; (c) both the production and consumption of food are governed by social values that are just and equitable as well as moral and ethical; (d) the ability to acquire food is ensured; (e) the food is obtained in a manner that upholds human dignity.

## 2.3. Fisheries in Public Policies

In Malawi, about 20 percent of the surface area is covered by water and fishing is an important economic sector that contributes to the livelihoods of the rural population and to the economic growth of the country. Total domestic fish production has averaged 70,000 MT per year for the last decade (Government of Malawi, 2012).

In national policy documents, fisheries are considered a sector with vast potential as yet to be explored. Special focus is given to the exploitation of untapped fish resources in Lake Malawi and on the promotion of aquaculture as a way to compensate for declining catches. Fish is the main and most affordable source of animal protein, and some of the actions proposed focus on the increase of productivity, the strengthening of institutional frameworks, capacity building for aquaculture development and promotion of consumption (Kurien, J and J. López Ríos, 2013).

The ASWA identifies fisheries as an important component of food security and establishes the objective of increasing fish catch landing (capture fisheries) from 70,000 MT in 2012 to 110,000 MT in 2017.

The MGDS II (2011-2016), calls for enhancing livestock and fisheries productivity as a key strategy, and the ERP for Malawi (both of which were adopted in 2012), focuses the MGDS on a few priorities that are pro-growth, represent quick wins, and are highly effective, identifying agriculture as such (Amador and Banda, 2013).

Finally, the recently prepared National Fisheries Policy (NFP), 2012-2015, states “the main goal of Agriculture and Food Security priority area is to increase agricultural productivity and diversification which focuses on increased sustainable fish production within the medium-term outcome.”

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## 3. Fishery Resources

Malawi is well endowed with aquatic resources. Lake Malawi - which can be considered as a shared lake with Tanzania and Mozambique - has a total surface area of 29,500 km<sup>2</sup> and is the main source of fish resources for the country (i.e. about 85-90 percent of total domestic fish production). The lake shoreline extends to about 700 km on the Malawi side.

Lake Malawi is one of the deepest lakes in the world with a maximum depth of up to 700m (the layer below 220 m is anoxic and thus no fish are found below this limit). The nearshore topography varies greatly between gently sloping beaches and steep, rocky coastline (particularly on the eastern side). The lake can be classified as oligotrophic to mesotrophic (i.e. low to medium fish productivity). Dominant commercial species are small pelagics, notably *Engraulicypris sardella* (Usipa) and *Copadichromis spp* (Utaka), which represent about 70 percent of the total catch. Tilapias, in particular *Oreochromis karongae* (Chambo) are also important species in terms of value.

For fisheries management purposes, a distinction is made between inshore and offshore waters. For pelagic resources, the limit is set at 3 km from the shore or for waters deeper than 100m. For demersal resources, the limit is set at 50m depth to distinguish shallow from deep water communities. However, generally speaking, inshore waters are defined as waters between 0 to 50m deep. Under this definition, offshore waters include both pelagic (shallow and deep water) and demersal resources (depth more than 50m).

It should also be noted that Lake Malawi is the most species-rich lake in the world with up to 1,000 species (mainly Cichlidae species). Some companies along the lake have developed ornamental fish export businesses, targeting the European market in particular.

Other water bodies in Malawi include Lake Chilwa (750 to 2,000 km<sup>2</sup> depending on the season), Lake Malombe (390 km<sup>2</sup>), Lake Chiuta (about 200 km<sup>2</sup>) and the Lower Shire Rive system (the only outlet of Lake Malawi).

Total fishery potential in Malawi may be close to 100,000 MT per year according to several expert reports. Note also that an 'untouched' deep-water fish stock with a potential of about 43,000 MT per year was identified in the mid-90's through an ODA/SADC research project. This stock mainly consists of pelagic resources (79 percent of total) including *Diplotaxodon sp* (Ndunduma) 22,700 MT per year, *Engraulicypris sardella* (Usipa) 3,200 MT per year and *Rhamphochromis sp* (ncheni) 2,800 MT per year. The deep-water demersal stocks (about 9,000 MT) are located between 50 and 150m and are composed of several species groups, with *Lethrinops sp* (Chisawasawa) the dominant one. Until now, only semi-industrial fishing units have targeted these resources with some bycatch taken by artisanal units.



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# KEY INFORMATION AND FIGURES ON THE FISHERY AND AQUACULTURE SECTOR

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## 4. Fishery Sector

### 4.1. Status of Resources

Several signs of overexploitation of inshore resources can be observed on Lake Malawi, such as the diminution of the average size of species, diminution of catch per unit of effort or change in species composition. The Malawi Research Institute is conducting regular demersal stock assessments based on bottom trawl biomass surveys in the southern part of the lake. Results confirm that inshore stocks seem to be declining.

The Lake's Chambo Fishery appears to have dramatically declined as a result of over-fishing in shallow waters and the degradation of inshore habitat. Peak production of Chambo was 17,400 MT in 1984, current production is stagnating around 3 to 4,000 MT per year.

If inshore stocks seem to be declining, this is not the case however for off-shore stocks on Lake Malawi. There is indeed a large underexploited offshore deep water resource in Lake Malawi that is estimated at 33,000 MT per year (Ndunduma - *Diplotaxodon spp.*) according to the NFP 2012-2015. As indicated above, deep-water fish resources have not been tapped yet by artisanal fisheries due to a lack of appropriate technology.

The NFP 2012-2015, indicates that other water bodies are intensely fished such as Lake Malombe, due to excessive fishing effort.

It should also be noted that Potamodromous species - i.e. fish that migrate from lakes to rivers to reproduce - including *Opsaridium microlepis* (Mpsa, or the Lake Salmon) and *Labeo mesops* (Ntchila), are declining due to a combination of overfishing and habitat degradation, particularly in the Songwe River. These species are of a high economic and ecological value. Adults are principally caught during their seasonal migration along the rivers, when they are in abundance and easier to capture. A Transboundary Participatory Fisheries Management Plan on the Songwe River (shared between Malawi and Tanzania) focused on Potamodromous species has been under preparation since late 2006.

### 4.2. Major Fishery Dynamics in the Sector

The fishery sector is dominated by a multi-gear and multi-species, small-scale (traditional and artisanal) sector. A semi-industrial trawler fleet also operates in the southern part of Lake Malawi.

#### Small-scale sector

The bulk of fish production in Malawi is from small-scale traditional fisheries (i.e. use of dugout canoes) and artisanal fisheries (i.e. use of motorized or non-motorized planked boats). Small-scale fishermen normally use gillnets, open water seine/hybrid lampara nets (Chirimila net), beach seine, traps, hand lines and longlines. Landings are dominated by small pelagics with fishing units operating with open water seine nets at night (for Usipa).

According to the 2009 Frame Survey, the small-scale fishing fleet was composed of 15,867 fishing vessels of which 872 were motorized planked boats, 2,942 were non-motorized planked boats and 11,289 were dugout canoes. About 81 percent of these fishing vessels were recorded on Lake Malawi. A comparison of figures over the period 1991-2009 shows that the number of planked boats in Malawi is steadily increasing (+39 percent over the period), with an increased rate of

motorization (13.5 percent in 1991 versus 22.8 percent in 2009). The number of dugout canoes has also increased over the same period (+16 percent) though it seems to have stabilized over the last decade.

The number of fishermen recorded countrywide during the 2009 Frame Survey was 59,526 with the majority being crew members (77 percent) and the rest, fishing unit owners. The rate of increase of the number of fishermen over the period 1991-2009 was about 60 percent.

Frame Survey figures on all effort indicators expressed as number of fishermen, fishing crafts (including rate of motorization) and fishing gear (including a number of Chirimilla) suggest an overall steadily increasing trend in fishing capacity between 1993 and 2009. This trend may result from the combination of population growth, lack of alternative income-generating activities within fishing communities and the relative profitability of fisheries.

In the meantime, a relative stabilization of the overall catch level can be observed, in particular on Lake Malawi. This is believed to be linked with the increasing fishing effort in terms of the duration of fishing trips and changes in fishing strategy (e.g. increased size of open-water seine nets, increased number of pressure lamps, etc.). With regards to small pelagic fisheries, traditional lampara units tend to go further offshore where stocks in shallow waters would be moderately exploited. Fishers have also developed new strategies based on increased mobility in the inshore waters, using motorized mother boats for instance. The extension of the fishing area however has been made to the detriment of safety at sea, since most of the fishing units are dugout, paddle-operated canoes.

For the last 15 years, Malawi has encouraged the development of an advanced artisanal fishery sector on Lake Malawi, capable of targeting offshore and deep water species with the assistance of development partners including ICEIDA and AfDB. Preliminary results show that fishing and economic conditions for improved techniques would be more supportive in the southern part of the lake. Meanwhile, deep water fisheries development is still at the experimental stage due to the complexity of identifying and promoting suitable and profitable techniques for the small-scale industry.

### **Industrial sector on Lake Malawi**

Large-scale commercial activities, highly mechanized and capital intensive, are undertaken in the southern part of Lake Malawi, mainly by pair trawlers and stern trawlers targeting bottom and pelagic species. The trawlers are operated by MALDECO, which is a quasi-government type company. Pair trawling involves vessels with an average length of 7.6m with twin engines (90 HP combined) operating in the shallow waters - between 18m to 50m deep. Stern trawling involves larger vessels with more powerful engines (ranging from 125 to 400 HP) and is carried out in waters between 50m and 130m deep.

In 2010, there were 15 pair trawlers and 5 stern trawlers, all of them, except one pair trawler, in Nkhotakota, confined to the southern part of Lake Malawi which is relatively shallow and the most productive (Nagoli, 2010).

The annual estimated catch for this sector ranges from 4,000 to 5,000 MT, and consists mainly of *Lethrinops*, *Copadichromis spp* (Utaka) and *Diplotaxodon spp* (Ndunduma).

### **4.3. Fishery Production**

According to the NFP, 2012-2017, fish production in Malawi varies annually with estimates from the years 2000 to 2010 averaging 70,000 MT per year. There are significant inter-annual fluctuations resulting from the nature of the fisheries which are dominated by small pelagic resources, and notably Usipa (Lake Sardine) a short-living species that is highly dependent on the hydro-climatic

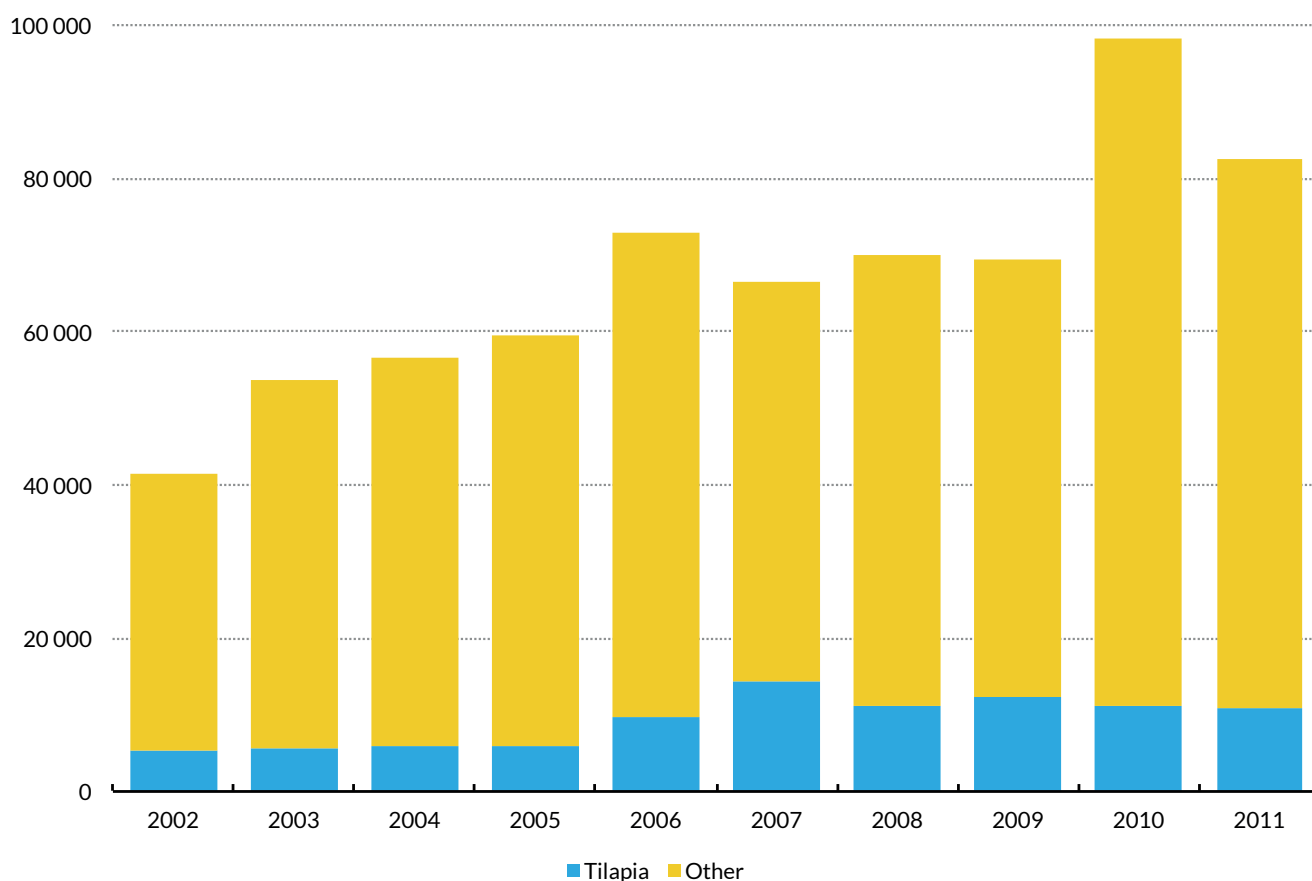
conditions of Lake Malawi.

The estimated fish production has increased for the past decade mainly due to the promotion of offshore deep water fishing in Lake Malawi and the intensification of recording. Catch are mostly composed of small pelagics (Usipa and Utaka).

On Lake Malawi, no loss of fish biodiversity has been observed for the last two decades. However, the fish composition has changed due to overfishing and environmental degradation.

## Domestic inland fish production in Malawi (in tons)

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



### 4.4. Fish Utilization

Fish is one the most valuable food commodities traded in the country. It is estimated that out of the total quantity of fish landed, 25 percent is marketed fresh and the rest is processed using traditional methods of smoking, frying, parboiling and sundrying (Nagoli, 2010). A trader's decision to deal in one or another product is determined by various factors including size and species of fish, distance between supply and consumer market, and availability of appropriate transport and handling facilities.

Most of the landing sites in Malawi are used as trading and traditional processing sites. Few are equipped with infrastructure and services to support good handling and preservation practices. There are two methods used in selling fish at landing sites. Fish is sold either by auction or as a unit of a dozen fish for a predetermined price set by the fisher. Auctioning is common on Lakes Malawi, Malombe and Lake Chilwa for fresh fish, especially for the most valuable species and where demand is quite high (FAO, 2005-2015).

Small pelagics (Usipa and Utaka) are mostly dried on basic raised wooden racks, by both women and men. Usipa is sometimes boiled before drying to add value to the product. Dried fish products seem to adequately meet the fish demand whilst allowing for the easy storage and transport of products over long distances. In general, fish marketing also enables fishermen to sell their produce as soon as the fish is landed. The post-harvest sector is however facing two major problems. The first is that during the rainy season, working conditions for fish processing and storage are poor (diminished duration of sun exposure, humidity) which leads to physical and economic losses. The second is that most fish traders usually operate with a small working capital which can result in problems of unsold production on the fish landing sites when the catch is high, leading again to physical and economic losses.

The problem of post-harvest losses is exacerbated by the absence of cold storage facilities. Furthermore, fish processing and quality control in Malawi are still poorly developed, with one of the major challenges being the lack of adequately trained personnel (Kapute, 2008). There is also a lack of access to proper technology and equipment as well as ice, partly due to a lack of available credit and micro-finance for fishery stakeholders. The figure of 40 percent is frequently mentioned in official documents to assess the level of post-harvest (economic and/or economic?) losses. However, no systematic loss assessment has taken place to confirm or dispute this figure and it is believed that this figure is largely over-estimated.

The marketing of fish is well integrated in a highly organized and commercialized trading system, which connects fishers with urban markets. This provides opportunities for rural fishers to earn cash, which is often in turn reinvested in other activities such as farming. The bulk of landed fish is sold to urban markets within the country due to increasing market demand (Nagoli, 2010). Small quantities of fish are believed however to cross borders into other countries. The majority of the consumers purchase fish supplied through the distribution chain.

The Malawi Bureau of Standards (MBS) has developed several product standards for fish as a means to promote food safety and better trade.

Some of the commercial fishing companies have their own fish handling, processing and marketing facilities at their landing bases. An example of this is the MALDECO fishing company, which has its own ice factory, cold rooms, freezing plants, smoking kilns, within its premises very close to Lake Malawi and insulated fish distribution lorries (FAO, 2005-2015).

#### **4.5. Infrastructure**

Infrastructures for fishing and related activities are poorly developed in Malawi, with the exception of the commercial fishing industry in the southern part of the Lake, notably in Monkey Bay and Mangochi areas. This situation is particularly detrimental to the post-harvest sector. The NFP 2012-2017 stresses the urgent need to address public services and infrastructure issues along the whole fish value chain.

A recent initiative (2003 – 2010) financed through an AfDB project was to introduce highly subsidized cold-chain systems (ice plants, cold storage rooms, etc.) in selected sites on Lake Malawi. The original project design centred on targeting the estimated above-mentioned untapped deep water fishery in the Lake. A total of nine ice plants and nine chill rooms were procured and the sites to receive such infrastructure were designated. Reports indicated that ice machines

of a capacity of 5 MT of flake ice per day were made available but never installed. This activity was aimed at improving the quality of marketed fish by providing cold storage facilities for fresh produce. It was argued that consumers would have to be ready to pay extra costs if the ice was used for small pelagic products, however, these products are generally demanded by the country's low-income population. A growing regional demand for the product, including South Africa and Zambia, indicates that the potential still exists for using the ice for this fishery also.

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## 5. Aquaculture Sector

Aquaculture in Malawi consists of two sub-sectors, namely a long established 'low input-low output' rural aquaculture, and a nascent commercial sector, which ensures the bulk of production.

The development of rural aquaculture was supported with the establishment of the Domasi Experimental Fish Farm in 1957 for the breeding and distribution of *Tilapia rendalli* and *Oreochromis shiranus*. In the 1970s and 1980s the sub-sector received support from several donors and NGOs, promoting the wide adoption of fish farming in Malawi. A typical small-holder fish farmer has one or two small ponds of about 200 m<sup>2</sup> or less, usually located in close proximity to a seasonal wetland. It is estimated that there are currently about 6,000 fish farmers countrywide working on about 10,000 ponds. Fish production from rural aquaculture has steadily increased from 800 MT in 2003 to 1,200 MT in 2008. The production is mostly composed of Tilapia and to a lesser extent, Catfish.

Commercial aquaculture began in 2004 with the establishment of two large-scale production units. One is a large-scale cage culture operation (MALDECO Aquaculture), which produces around 1,000 MT per year of *Oreochromis karongae* (Chambo) in circular floating cages in Lake Malawi (Mangochi area). MALDECO also built its own feed mill, complete with a pellitiser, for easy access to commercial quality feed (Litvinoff, 2009). The other is a medium-scale pond culture operation (GK Aquafarms) in the Lower Shire Valley at Kasinthula, which produces *Oreochromis mossambicus* and Common Carp (*Cyprinus carpio*). GK Aquafarms was allowed by the government to raise Common Carp as the Lower Shire is outside the catchment area of Lake Malawi. It should also be noted that the development of commercial aquaculture was supported by a Presidential Initiative on Aquaculture Development (PIAD) that was launched early in 2006.

Current total fish production from aquaculture in Malawi is estimated at 2,600 MT per year. As indicated in the NFP 2012-2017, aquaculture has the potential to contribute to food security and poverty reduction goals by supplementing capture fisheries that are being over exploited. There is indeed considerable potential for the development of aquaculture in Malawi (Commonwealth/GTZ 2007) due to the good availability of perennial water and the warm climate that favours fast fish growth.

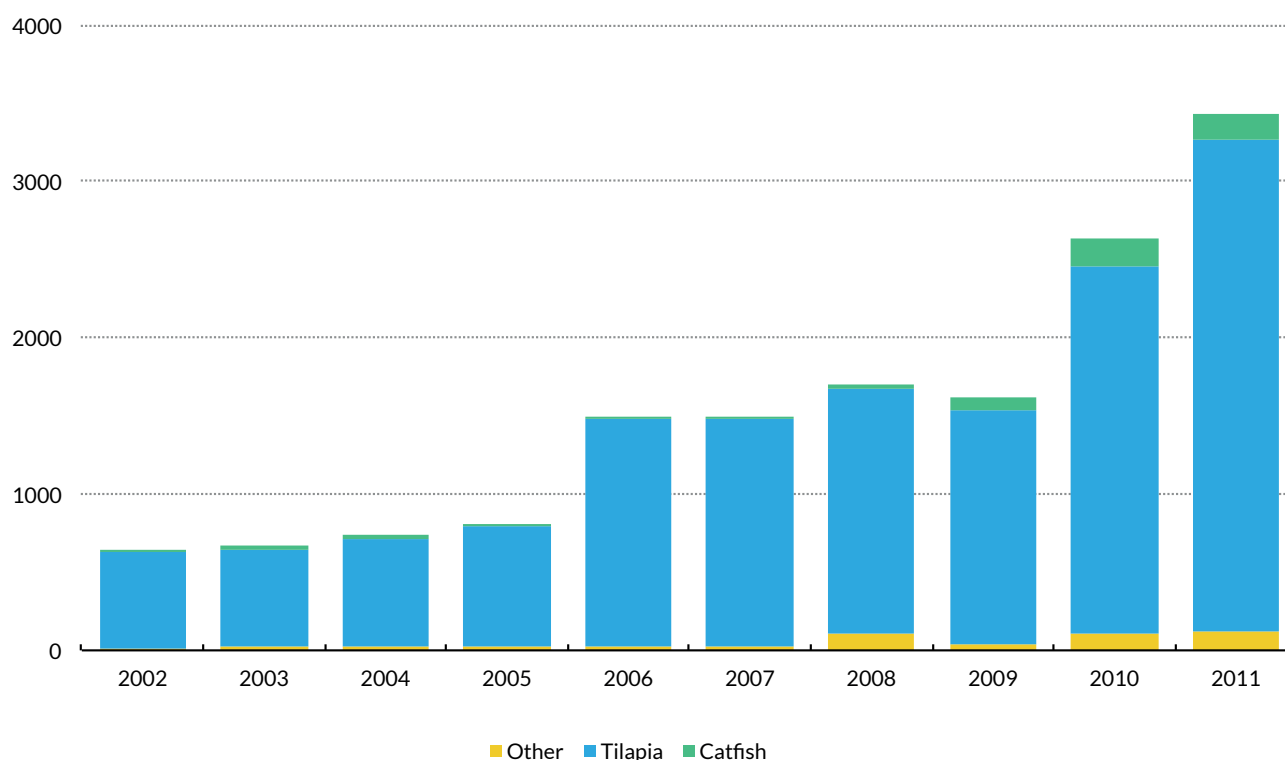
As stated in the NFP 2012-2017, there is great potential for aquaculture growth in Malawi but development is constrained by three key challenges. One of the immediate challenges to aquaculture development in Malawi is the common use of slow growing indigenous species due to the ban on the use of exotic fish species in the catchment of Lake Malawi, which therefore includes most of the country. Another is access to good quality commercial feeds, which have to be imported. Finally, another key challenge relates to the low participation of private investors. The new policy insists on the need to target large-scale operations and promote aquaculture as a business at various operational levels (small, medium or large).

Research in fish farming is done by the National Aquaculture Center (NAC) based in Domasi, Zomba.



## Aquaculture production in Malawi (in tons)

2014 - Figure 7 - Source FAO FISHTAT J (2002-2011)



## 6. Fish Import and Export

### Import

Over the past decade, there has been a high proportion of imported dried fish (*Tilapia and Barbus spp*) from Tanzania, which has dominated markets in some towns such as Mzuzu, Kasungu, Lilongwe and Limbe. Dried Kapenta from Zambia and small, frozen marine pelagics also are being imported. Dried 'Tchenga' fish imported from Mozambique (Cahora Bassa Dam) is also common at Limbe market.

According to COMSTAT data, Malawi imported 3,200 MT of fish valued at US \$1.2 million in 2008. Imported fish from Tanzania and Mozambique represented 79.6 percent and 14.2 percent of the total in volume (i.e. 93.8 percent in total) and 31.8 percent and 31.1 percent in value respectively.

### Export

Overall, fish exports have decreased over time in terms of volume. Note however that exports of processed fish products from Malawi (often dried) to neighbouring countries seem to be unrecorded and therefore go unaccounted as do fish imports. Some exports of processed fish products also are basically re-exports (i.e. imported into Malawi and then exported to other neighbouring countries) such as frozen shrimp and prawns, trout salmon, cod fish and flat fish (Nagoli, 2010).

According to COMSTAT data, Malawi exported 33 MT of fish valued at US \$293,000 in 2008. The

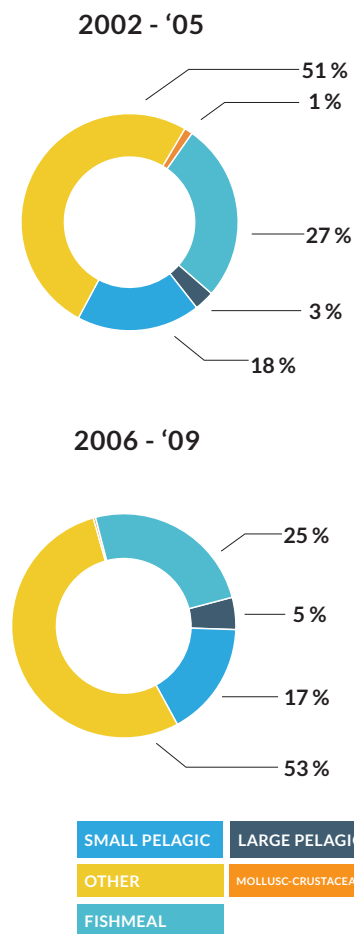
## Fish trade balance in Malawi in volume (in tons)

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



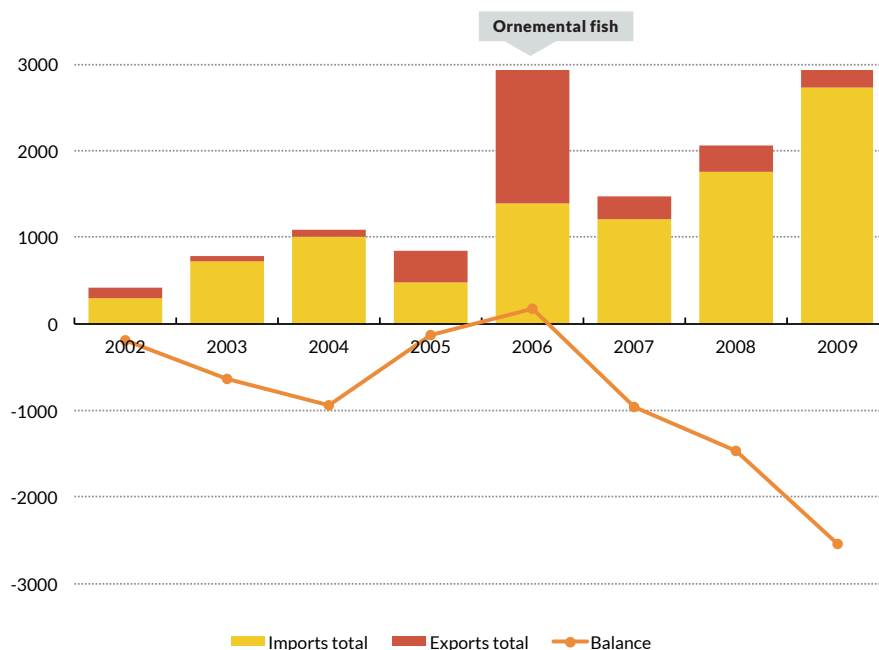
## Fish Imports by category in Malawi in value (% of \$)

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



## Fish trade balance in Malawi in value (in '000 US \$)

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



main export market in the region is Zambia (34.5 percent in volume but only 1.9 percent in value).

The second export destination for fishery products is Germany (20.9 percent in volume and 29.0 percent in value); this refers to ornamental fish, which peaked at US \$1.5 million in 2006. Malawi is indeed exporting live ornamental fish, particularly Mbuna fish. The aquarium trade is dominated by only a few operators. Of particular concern, regarding Mbuna fish trade, is the issue of certification and the development of a value chain for the fish. This is the only fisheries sub-sector that is currently being promoted by the Malawi Export Promotion Council (MEPC). The aquarium trade has, however, steadily decreased over the last decade since many aquarists are now able to breed their own fish.

Importantly, Malawi is not allowed to export fish to the EU for human consumption as it lacks the recognized Competent Authority.

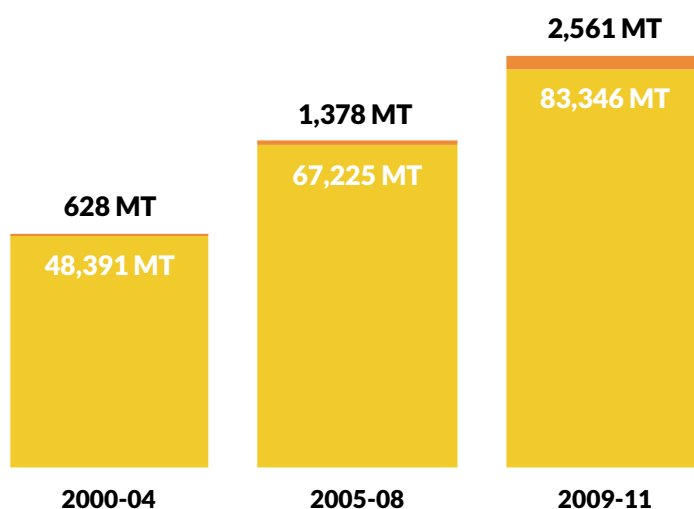
## 7. Contribution of the Fishery and Aquaculture Sector to the Economy

Total fish production in Malawi has ranged between 70,000 MT and 80,000 MT per year, with major trends showing a slight increase of fish landings over the last decade.

In terms of value, the fishery sector is considered an important source of income, particularly in rural areas. Commonwealth/GTZ (2007) reported local revenue of about US \$24 million from fish sales annually (Kapute, 2008).

### Total Domestic Fish production in volume in Malawi (in tons)

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



In terms of its **contribution to GDP**, it is estimated that the fishery sector contributes about 4 percent of the GDP (Government of Malawi, 2012).

**Contribution to budget revenue** is not known but is believed to be marginal due to the weak taxation system.

With regards to **employment**, the capture fisheries sub-sector directly employs nearly 60,000 fishers, and over 500,000 people are indirectly involved in fish processing, fish marketing, boat building and engine repairs (Government of Malawi, 2012).

### Fish consumption




According to the NFP 2012-2017, the per capita consumption of fish in Malawi has subsequently fallen by more than 60 percent, from 14 kg per person per year in the 1970s, to approximately 5.6 kg in 2011.

In the 1970s, fish provided 70 percent of the animal protein intake of the Malawian population and 40 percent of total protein supply for the country. These figures have declined as a result of the decline in catches and rapid population growth over the last thirty years. The current contribution of fisheries to food security, especially in the supply of animal protein, is still important however in comparison with other IOC-SmartFish participating countries and considering that Malawi is a land-locked country. In 2009, according to FAO Food Balance Sheets, fishery products represented 28.4 percent of total animal protein intake, well above the African average (19.1 percent).

Fishery products have been assessed as the preferred source of animal protein, playing an important role in **food security in Malawi** (Kurien, J and J. López Ríos, 2013). This consumption habit is reinforced with promotional campaigns in printed press, radio and TV, as well as nutrition programmes at several levels of the educational structure.

### Fish consumption in Malawi (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	71,965 MT	5.05 kg/y	1.5 g/day
2004 - 07	66,781.25 MT	5.13 kg/y	1.53 g/day
2000 - 03	48,408.5 MT	4.15 kg/y	1.25 g/day

Little information is available on **gender issues in fisheries**. Women are mostly engaged in fish processing and marketing activities.



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

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## 8. Fishery Policy and Planning

The 2001 National Fisheries and Aquaculture Policy document used to be the sectoral policy reference in Malawi until recently. This document was revised in 2012 with the support of ACP Fish II and UNDP, notably to take into consideration overall policy shifts from natural resources conservation and management to promoting the sustainable production of fish for food security as well as for income generation. The new document, entitled National Fisheries Policy (NFP) 2012-2017, was expected to be submitted to Cabinet in early 2013.

The NFP is to be implemented in pursuit of the Malawi Growth and Development Strategy II (MGDS), which is an overarching policy document. Amongst the priority themes in the MGDS II are sustainable economic growth and social development as a key to poverty reduction and improvements in livelihoods. The NFP is also consistent with the main goal of the Ministry of Agriculture and Food Security (under which the Department of Fisheries falls), which emphasizes the need to increase agricultural productivity and diversification, including in the fishery sector. Finally, the new policy also takes into account key agreements and protocols including the SADC Protocol on Fisheries and the Abuja Declaration, both of which call for an end to open access in capture fisheries.

The NFP focuses on the sustainable increase of fish production from capture fisheries and aquaculture, enhancing fish quality and value addition, promoting technology development and its transfer to users, enhancing capacity for the sector's development and promoting social development, decent employment and fisheries governance through participatory resource management regimes.

In the fishery sector, the NFP emphasizes the need to improve current fisheries management notably through putting an end to the open access regime of fisheries and controlling fishing capacity. Indeed the NFP recognizes that in an open access regime, regulating fishing through the licensing of fishing gear (the main tool used by the administration for regulating fishing capacity) has proved to be inefficient in Malawi. The NFP also recognizes that "governance reforms that have been adopted since the 1990s with adoption of Participatory Fisheries Management (PFM) or co-management arrangements have not been successfully concluded". Consequently, the NFP encourages a right-based approach with governance reforms, including establishing community property regimes whereby empowered fishing communities and other stakeholders would be responsible for formulating fisheries by-laws, management plans and signing management agreements with district councils in a decentralized framework.

With regards to the need to improve fish quality and value addition, the NFP identifies key challenges including promoting proper fish landing and handling facilities and establishing a Competent Authority to monitor controls on fish quality aspects and guarantee safety for consumption.

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## 9. Institutional Framework

### 9.1. Fisheries Administration

The Department of Fisheries (DoF) is responsible for many fisheries and related issues including fisheries management, data collection, MCS, research, the collection of fees, and the promotion of aquaculture. The DoF was formerly a branch of the Ministry of Mines, Natural Resources and

Environment. Since 2007, the DoF has been under the Ministry of Agriculture and Food Security (MoAFS). This represents a policy shift from natural resources conservation and management to promoting the production of fish for food security as well as income generation.

At the central level, a Fisheries Advisory Board advises the Minister on the overall development, administration, conservation and management of fisheries. In the context of the recent revision of the fisheries legislation (see below), the need to review the Board appeared in light of the fact that it has scarcely met over the last years.

The fisheries research unit of the DoF is located in the field, in Monkey Bay (see below).

District Fisheries Officers are present in all Districts throughout the country.

Furthermore, it should be noted that there is no Competent Authority responsible for food safety conditions in the fishery sector. The Malawi Bureau of Standards (MBS) has published voluntary standards concerning fish quality. However, fisheries officers are not granted with the power to monitor and control fish quality and enforce the standards.

## 9.2. Fisheries Research

The Fisheries Research Unit (FRU) of the DoF was established in 1962 and is currently based in Monkey Bay. The mandate of the FRU is to provide information necessary for the sustainable exploitation, management, conservation of biodiversity and investment in the fisheries sector through the appropriate biological, technological, sociological and environmental research programmes.

Current research programmes/activities in fisheries include: Stock assessment (monitoring changes in commercial and small-scale fisheries); Frame surveys of the capture fisheries sector (annual counting of fishers, crafts and fishing gears in all major water bodies); Exploratory surveys (including assessing the viability of new fishing grounds); Biological and taxonomical studies (to support inter alia the definition of technical management measures); and Bio-limnology studies (environmental monitoring surveys, surveillance survey of fish diseases, etc.). The FRU research facilities include laboratory facilities and two research vessels (R/V Ndunduma and Ethlywynn Trewasas).

The FRU mostly carries out research on capture fisheries, since research in fish farming is done by the National Aquaculture Center (NAC). The FRU is however involved in cage aquaculture research with activities aimed at identifying potential cage culture sites and monitoring cage culture establishments.

Most of the RFU's current research activities refer to stock assessments of demersal resources and to fisheries monitoring (data processing and dissemination). Other important activities in support of fisheries, such as acoustic surveys to assess pelagic resources, biodiversity studies, lake productivity processes and social sciences studies (in relation with co-management), seem to be neglected due to financial constraints and limited skills.

## 9.3. Fisheries Training

All fisheries training is done at Mpwepwe in Mangochi, where the Malawi College of Fisheries (MCF) is located (FAO, 2005-2015). The main purpose of the MCF is to develop capacity, knowledge and skills by providing appropriate training programmes for the Department of Fisheries and in the SADC region. The MCF is also mandated to execute fisheries management training programmes for user communities.

Unlike the Malawi College of Fisheries, the Natural Resources College (NRC), which used to fall under the government, has now been privatized (Kapute, 2008). The NRC is also involved in training

staff at the technical level (diploma) in different fields. The NRC runs training programmes in natural resources, environmental management and agriculture. However, the fisheries section is not fully developed because there is only one fisheries module - Sustainable Aquaculture and Fisheries Management - which is taught as a component within a non-fisheries related course (Kapute, 2008).

Chancellor College (Biology Department) also offers fisheries courses to 3rd and 4th year students majoring in biology. In particular, there is a course on freshwater biology (3rd year) and fish biology (4th year).

## 9.4. Private and Community-Based Institutions

The Local Community Participation Rules (LCP Rules) 2000 define Beach Village Committees (BVCs) as the primary community-based institution, each having jurisdiction over one landing beach. The BVCs are responsible for the conservation and management of the fisheries resources within their area of jurisdiction and are expected to play an important role in data collection and MCS in support of the district staff.

According to the LCP Rules 2000, the BVCs are encouraged to form fisheries associations within an area of jurisdiction equivalent to the fisheries districts established under the current fisheries legislation. Each fisheries district should have its own fisheries management plan and Fisheries Management Agreements (FMA) should be established between the DoF and existing fishermen's associations, setting out their rights and respective obligations.

The BVCs are young institutions and would benefit from capacity building in a number of organizational management and technical issues and at many fish landing sites. Such institutions, however, sometimes lack legitimacy and this causes conflict with traditional village organizations and with the fishermen's associations they oversee.

Whilst preparing of draft Bill (see below), several stakeholder meetings were organized in 2012 with the support of ACP Fish II, during which many fisheries related aspects were discussed, including the role of BVCs in fisheries management. During these meetings, it was stressed that the jurisdiction of the BVCs should be reviewed since presently they have jurisdiction over the beach but not where fishing activities are taking place. It also came to light that there are no tangible incentives for the community to actively participate in the co-management and MCS of fisheries, including prosecuting offenders. Finally, it was put forward that fisheries associations and BVCs be better integrated in the overall decentralization scheme, notably through increased participation in district councils

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## 10. Legal Framework

### 10.1. Fisheries Legislation

The legal framework that governs the fisheries sector in Malawi is composed of: the Fisheries Conservation and Management Act (FCMA) 1997; the Fisheries Conservation and Management Regulations (Regulations) 2000; and the Local Community Participation Rules (LCP Rules) 2000.

The FCMA, 1997, is composed of several 'classical' parts. A more specific part provides for local community participation in conservation and management of fisheries, under which the Director may enter into a fisheries management agreement with any local fisheries management authority. This has supported the move from a top-down centralized fisheries management style towards a more decentralized co-management approach. Another part of the FCMA makes provision for the registration of local fishing vessels.

Some of the technical management measures that appear in the FCMA Regulations, 2000 include:

closed fishing seasons and areas; mesh size restrictions; minimum catchable size of fish; maximum headline length of fishing net, amongst others. The regulations also include a provision relating to the licensing of fishing gears aimed at controlling fishing capacity, including in the small-scale sector.

A draft Bill was recently prepared with the support of the ACP Fish II project (Amador and Banda, 2013). The rationale for up-dating the FCMA includes the need to align the current legal framework with the new institutional framework (since 2007) and the new fisheries policy framework (Government of Malawi, 2012) and to ensure compliance with commitments made by Malawi at sub-regional and international levels, and in particular with the SADC Protocol on Fisheries and the Abuja Declaration on Sustainable Fisheries and Aquaculture in Africa (see below). The up-dating of the FCMA was also motivated by the need to better address several new sensitive issues including improving fisheries co-management, improving MCS and combatting IUU fishing, improving fish quality and promoting aquaculture.

With regards to fisheries management, a new set of provisions should be introduced including the adoption of fisheries management measures, the designation of fisheries protected areas, fish sanctuaries and closed seasons as well as the adoption of a National Fisheries Management and Development Plan (NFMDP) to guide the Local Fisheries Management and Development Plans (LFMDP) and to be adopted by the District Councils in the fisheries management areas under their jurisdiction. Several provisions for improved procedures for registration and the licensing of all fishing vessels should also be introduced. The Bill will also put a particular emphasis on improved MCS, including a new classification of offences and corresponding sanctions and penalties.

## 10.2. Other Elements in relation to Legal Aspects

Other legislations of relevance for the fishery sector include the Environmental Management Act (1996), which regulates conservation of the environment and sustainable use of natural resources and seeks to strengthen coordination amongst environment and natural resources sector agencies, and the National Parks and Wildlife Act (1992), amended in 2004, which provides for the management of protected areas including those of Lake Malawi and the Shire River.

The Inland Waters Shipping Act (1995) provides for the registration of large (commercial) fishing vessels. Registration of vessels under this act is a condition to be fulfilled before registering for commercial fishing under the FCMA (Amador and Banda, 2013).

At the international level, Malawi is signatory to several agreements and protocols, including the SADC Protocol on Fisheries and the Abuja Declaration on Sustainable Fisheries and Aquaculture in Africa, and the SADC Revised Protocol on Shared Watercourses. The SADC Protocol on Fisheries makes reference to many obligations in relation to the need for improved information sharing, the promotion of fisheries management plans, the control of fishing capacity, the strengthening of MCS, combatting IUU and legislation harmonization. Malawi also is member of the Zambezi Watercourse Commission (ZAMCOM) whose mandate is “to promote the equitable and reasonable utilization of the water resources of the Zambezi Watercourse as well as the efficient management and sustainable development thereof”.

Malawi’s participation in **Regional Fishery Bodies** has been limited to the FAO Committee for Inland Fisheries and Aquaculture of Africa (CIFFA). The FAO Council established CIFFA in 1971 as an Article VI FAO Regional Fishery Body. CIFFA is an advisory body with a mandate to promote the development of inland fisheries and aquaculture in Africa.

For several years, Malawi has also engaged in political dialogue with Tanzania and Mozambique with a view to possibly establishing a commission for the management of Lake Malawi and its basin. A draft Convention on the Sustainable Development of the Lake and its Basin was developed in 2003, with the support of UNFAO.



A Bilateral Commission was also recently created by Malawi and Tanzania for the joint management of the Songwe River Basin. The Commission's mandate includes fisheries issues.





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# FOCUS ON FISHERIES MANAGEMENT AND RELATED ISSUES ON INLAND FISHERIES

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## 11. Administrative Functions

### Fleet registration and management

The registry of fishing vessels is foreseen under the FCMA however, this is not being implemented for the majority of vessels currently operating in Malawi – small-scale vessels (Amador and Banda, 2013). The only registry of vessels is provided by the Marine Services, certifying that the vessel is seaworthy in accordance with the Inland Waters Shipping Act (1985).

### Authorization to fish

The FCMA Regulations, 2000, includes the licensing of all fishing gears. However, this regulation is only strictly applied to commercial fisheries and although small-scale fishers are licensed, their fishing capacity is not regulated under this regulation (Nagoli, 2010).

In fact, small-scale fisheries in Malawi operate under an open access regime with licensing being of a purely administrative nature.

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## 12. Fisheries Monitoring

The DoF, through its research unit, conducts an annual frame survey, which is a complete census of Malawi's basic fishery characteristics for the purpose of planning and management. These surveys are usually conducted in the dry season (August to October) when most fish landing sites are accessible by land. During these surveys all landing sites within the main water bodies i.e. Lakes Malawi, Chilwa, Malombe and Chiuta, and Upper and Lower Shire are visited and fishers, their gears and fishing crafts enumerated. The data collected from the frame surveys is subsequently used for the selection of beaches from which catch and effort data are collected.

The major component of the fisheries monitoring system in Malawi was introduced in 1974. It is a boat-based system. In the 1990's, a gear-based system (called the MTF) was introduced in Mangochi on Lake Malawi. Nowadays, both systems are used to cover the whole lake.

The fisheries monitoring system is operational in Malawi and is supportive of fisheries management. However, the system cannot meet all research and policy-makers needs for fisheries management due to its obsolescence (Darwall and Allison, 2002). Furthermore, there is a need to update the whole system to make it more efficient: currently its requirements for the sampling strategy, in terms of human resources from the District fisheries offices, are top heavy; assessments of catch rates and fishing efforts are imprecise; and there is a lack of participation of fishing communities.

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## 13. Fisheries Management Systems

Malawi has developed significant initiatives and efforts to promote the sound management of its fisheries. In particular, this includes regular stock assessments of demersal resources, data collection, the adoption of regulations to improve fish stock recruitment (e.g. restrictions on fishing gears, fishing areas, fishing times and size of catch), support for BVCs and more recently the adoption of the Chambo fisheries management plan on Lake Malawi (entitled the Chambo



Restoration Strategic Plan, 2003-2015) developed as a follow-up to commitments made by Malawi at the 2002 World Summit on Sustainable Development.

Malawi also has encouraged the development of protected areas, including the Lake Malawi National Park (a World Heritage Site), which covers a small portion of the lake shore (94 km<sup>2</sup>) in the southern area of the lake. The recent Chambo fisheries management plan includes the establishment of sanctuaries or protected areas, and potentially artificial reefs, to preserve sensitive areas. However, in order to be effective, these measures need assistance from additional inputs, since the Plan emphasizes a need to shift from 'open access' to 'regulated or limited access' to the fisheries.

The effectiveness of such a management approach has proved to be questionable given the continuous decline of inshore fish stocks, the change in species composition and the decrease in catch per unit effort. Reasons to explain this situation include the failure to enforce regulations, the absence of controls for fishing capacity and an unwillingness of fishing communities to invest in resource management and conservation as a result of the open access nature of fisheries and state-led management approach. Based on this, the Malawi government is reconsidering its overall approach so as to further involve community-based organizations in fisheries planning and management while promoting a property rights approach.

For instance, the Chambo fisheries management plan, 2003, envisages the creation of 'exclusive fishing zones' whereby residents would have exclusive fishing access rights. The new fisheries policy (NFP, 2012-2017) states "open access and overcapacity are the major problems hampering achievement of sustainable fisheries. The small-scale fisheries are conducted under the open access regime and it is very difficult to regulate fisheries and easily put in place an appropriate fisheries management system. A clear tenure rights to fishing is, therefore, a fundamental step towards improved fisheries governance".

With regards to participation in fisheries management, some remarks can be derived from the minutes of the local and national workshops that were held during the preparation of the new fisheries Bill (with the support of the ACP Fish II project). It was stated that the rules on Participatory Fisheries Management (PFM) should be reviewed in order to become effective. This should include capacity building of BVCs and fishermen's associations, the promotion and application of indigenous knowledge systems alongside scientific knowledge, and the effective empowerment of communities to formulate, implement and enforce by-laws together with Fisheries Officers. The meetings also brought to light the fact that there are many stakeholders involved in the governance of fisheries (including fishers, fish farmers, fish traders, traditional leaders, local communities, councils, fish processors and the DoF) with overlapping roles and a lack of clarity in terms of rights and obligations, which leads to ineffective community participation and weak implementation of legislation. Finally, it was noted that the lack of proper coordination between fisheries institutions, such as BVCs and associations on the one hand, and local development institutions as well as related natural resources institutions on the other, is another major concern that should be addressed.

A pilot project of a grass roots management system, whereby local communities have implemented by-laws both through customary mechanisms and municipal by-laws, has shown promise in the Nkhata Bay district. Fish nursery areas, a closed season and mandatory registration of resident fishers (who have tenure in the community) are enforced by a collection of villages in Nkhata Bay. Reports indicate improved catches and adherence to locally enforced by-laws.

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## 14. Fisheries Monitoring, Control and Surveillance

Fisheries MCS is relatively weak in Malawi due to a combination of financial, logistical and institutional reasons. In actual fact, MCS mostly consists of controlling (selling) the licensing of fishing gears in the commercial sector as well as some technical management measures such as closed seasons, which are not adhered to by the majority of fishers. Moreover, voluntary compliance

with legislation at most landings sites is not observed due to the lack of motivation of communities, and declining fish stocks, which makes it impossible to catch fish with legal gear and mesh sizes.

The new Fisheries Bill includes many provisions for improved MCS, however, the Bill will only be as effective as the funding provided to implement the proposed measures. Furthermore, the technical report prepared under the ACP Fish II (Amador and Banda, 2013) puts forward recommendations addressed to the DoF in relation to MCS when the new Bill is in force. Recommendations include the capacity building of fisheries' protection officers, MCS fisheries' observers and prosecutors and enforcement of the new legislation. It is also recommended to work with magistrates and judges to ensure that they are aware of the new legislation and that they deal with fisheries offences appropriately and determine a sanction scheme effective in deterring non-compliance. Finally, in view of the new local fisheries governance framework, which has added responsibilities for district councils and local communities, the provision of technical support to council staff is recommended to enable them to better mobilize fisheries management authorities to implement and enforce the new legislation.

The recommendations described above will certainly assist in improving MCS and help reduce IUU fishing. However, funds are urgently needed to implement these measures.

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## 15. Major Issues relating to IUU Fishing

The mayor issues relating to IUU fishing are the lack of enforcement of the existing provisions of the fisheries act and regulations. This lack of enforcement and the focus on office-based revenue collection has alienated the community from the fisheries administration. This has resulted in a commercial industry that fishes with impunity, with no regard for licence conditions, gear restrictions or fishing in shallow waters and breeding areas. The lack of fish, principally as a result of too many fishers, fishing with inappropriate fishing gear (monofilament, and beach seines in breeding and nursery areas), has resulted in fishers investing in even smaller net sizes and bigger beach seines (the biggest confiscated beach seines were double the size of confiscated beach seines from Lakes Victoria or Tanganyika). The lack of fish has also resulted in migrating fishers, the creation of migrating fishing camps up and down the lake, chasing fish wherever they are. This has caused local user conflicts and social challenges.

Thus, technically the major cause of IUU fishing is the inability of the government to implement effective MCS, primarily due to a lack of funds to implement appropriate management measures.

To remedy the situation, two main aspects need to be urgently addressed: the lack of funding to implement effective MCS; and the empowerment of local communities and districts to enforce their own by-laws. Without substantial investment in efforts to reduce illegal gears, and control destructive fishing practices, together with capacity building for local communities and municipalities, halting the decline of fish stocks in Lake Malawi will be impossible.

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FISHERIES IN THE ESA-IO REGION: PROFILE AND TRENDS

COUNTRY REVIEW - 2014

**MALAWI**



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INDIAN OCEAN  
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