



Fisheries in the ESA-IO Region: Profile and Trends

COUNTRY REVIEW

2014

BURUNDI





Breuil, Christophe. Grima, Damien. 2014. Baseline Report Burundi. SmartFish Programme of the Indian Ocean Commission, Fisheries Management FAO component, Ebene, Mauritius. 24 pp.

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

The views expressed in this information product are those of the author(s) and do not necessarily reflect the views or policies of FAO.

The contents of this publication are the sole responsibility of the author(s) and can in no way be taken to reflect the views of the European Union.

© FAO 2014

FAO encourages the use, reproduction and dissemination of material in this information product. Except where otherwise indicated, material may be copied, downloaded and printed for private study, research and teaching purposes, or for use in non-commercial products or services, provided that appropriate acknowledgement of FAO as the source and copyright holder is given and that FAO's endorsement of users' views, products or services is not implied in any way.

All requests for translation and adaptation rights, and for resale and other commercial use rights should be made via www.fao.org/contact-us/licence-request or addressed to copyright@fao.org

FAO information products are available on the FAO website (www.fao.org/publications) and can be purchased through publications-sales@fao.org

For more information, please contact smartfish@fao.org

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 Burundi.

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.



CONTENTS



BACKGROUND INFORMATION 6

1. Brief on the National Economy	6
2. Policy and Planning Framework	9
2.1. General Framework	9
2.2. Food Security Strategy	9
2.3. Fisheries in Public Policies	10
3. Fishery Resources	10



KEY INFORMATION AND FIGURES ON THE FISHERY AND AQUACULTURE SECTOR 12

4. Fishery Sector	12
4.1. Status of Resources	12
4.2. Major Fishery Dynamics in the Sector	12
4.3. Fishery Production	13
4.4. Fish Utilization	14
5. Aquaculture Sector	14
6. Fish Import and Export	15
7. Contribution of the Fishery and Aquaculture Sector to the Economy	18



POLICY, INSTITUTIONAL AND LEGAL FRAMEWORK OF RELEVANCE FOR THE FISHERY SECTOR 20

8. Fishery Policy and Planning	20
9. Institutional Framework	20
9.1. Fisheries Administration	20
9.2. Private and Community-Based Institutions	20
9.3. Fisheries Legislation	21
9.4. Other Elements in relation to Legal Aspects	21



FOCUS ON FISHERIES MANAGEMENT AND RELATED ISSUES OF LAKE TANGANYIKA'S (BURUNDI JURISDICTION) FISHERIES 22

10. Administrative Functions	22
11. Fisheries Management Systems	22
12. Fisheries Control, Surveillance and Enforcement	23
13. Major Issues relating to IUU Fishing	23



LIST OF FIGURES

Figure 1:	GDP (current billion US \$)	8
Figure 2:	GDP per capita (current US \$)	8
Figure 3:	Agriculture % of GDP	8
Figure 4:	Trade balance (current million US \$)	8
Figure 5:	Human Development Index	8
Figure 6:	Domestic inland fish production in Burundi (in tons)	13
Figure 7:	Fish Imports by category in Burundi in value (% of \$)	16
Figure 8:	Fish trade balance in Burundi in volume (in tons)	17
Figure 9:	Fishtrade balance in Burundi in value (in '000 US \$)	17
Figure 10:	Total Domestic Fish production in volume in Burundi (in tons)	18
Figure 11:	Fish consumption in Burundi (in live weight)	19



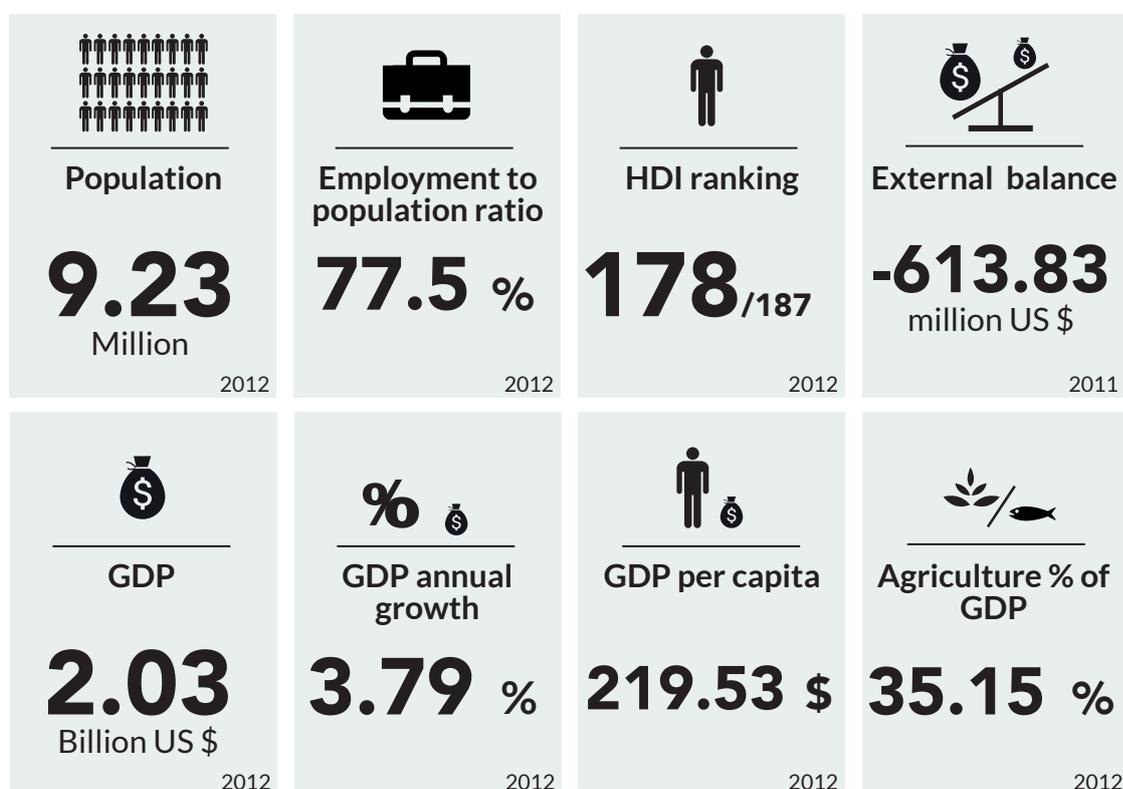


BACKGROUND INFORMATION

1 Brief on the National Economy

Key figures on Macro economic data

2014- Source World data Bank - Latest reported data



Burundi is a land-locked country with a surface area of about 27,800 km² and substantial natural resources, including land, water and minerals. Burundi is steadily emerging from a deep socio-political crisis that has seriously affected its economic development. Much progress has been made since 2005 towards restoring peace and security (OECD, et al. 2013). The population of Burundi was estimated at 9.2 million in 2012 and the population density is one of the highest in Africa (approximately 310 inhabitants per km²).

Burundi's economy is primarily driven by the agriculture sector, which contributes to approximately one third of the GDP, 90% of employment and 80% of export revenues (International Monetary Fund. 2012). Land is the country's most valuable resource given its agro-based economy. Most of the land is used for food production and for coffee and tea, which are the main export commodities. Growth of the national economy is highly correlated to agricultural growth and development, and thus to annual climatic conditions. In 2012, the manufacturing sector contributed about 15% of the country's GDP and the tertiary sector contributed about 38%.

The development of minerals (lateritic nickel, vanadium, phosphates, carbonatites, coltan, etc.) and hydroelectric potential could substantially boost economic growth and job-creation in Burundi. For now, the mining sector is characterized by the expansion of subsistence mining that has a limited impact on the economy. This situation is a result of the long civil war and a lack of basic infrastructure, especially energy (OECD, et al. 2013).

Economic growth rates have averaged about 4% since 2005. In 2012, according to World Bank data, total GDP in Burundi was estimated at US \$2.03 billion. In the same year, the GDP per capita was estimated at US \$219.5, showing a significant increase of 13% compared to 2011.

Since the adoption of the first Strategic Framework for Poverty Alleviation (SFPA) in 2006, national development strategies and plans have recognized the private sector as an engine for growth. In the meantime, the government has pursued structural and financial reforms in order to strengthen the productive base, improve the business climate and revive economic activity (OECD, et al. 2013). However, the private sector still faces several constraints including weak infrastructure, lack of access to long-term credit, fiscal pressure, inadequate business support services, and poorly-trained labour force. According to the World Bank's 'Doing Business 2013' report, Burundi ranked 159 out of 185 economies in its ease of doing business in 2012.

Inflation in Burundi has been more than 10% since 2011, mainly as a result of increased food prices. Inflation was estimated at 18.2% in 2012 (Mehler A.; Melber H.; Van Walraven K. 2014).

Burundi is faced with a structural imbalance in trade and the country is a net importer; the trade deficit was estimated at US \$613.4 million in 2012 (World Bank). This situation can be explained by its narrow export base (coffee represents about 70% of export revenues) and weak local industries, which cannot satisfy the local demand for manufactured goods, which represent the majority of imported goods. Most export goods are sold to the sub-region (East African Community - EAC - and the Democratic Republic of Congo). Most imported goods come from the EAC, the EU and Asia.

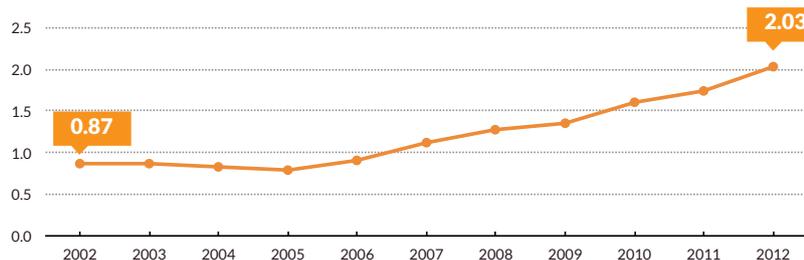
Burundi is a member of various regional organizations, including the International Conference on the Great Lakes Region (ICGLR), the Economic Community of Central African States (ECCAS), the Common Market for Eastern and Southern Africa (COMESA) and the EAC. Burundi seems to be most active in the EAC, in response to various programmes to facilitate trade through single border crossings, the development of regional roads and the free movement of people and goods (OECD, et al. 2013).

The active population in Burundi was estimated at 4.27 million in 2012 (Mehler A.; Melber H.; Van Walraven K. 2014). The country's workforce is mostly concentrated in the agriculture and informal sector, which employs almost 95% of the country's workforce (NMTPF, 2010-2014).

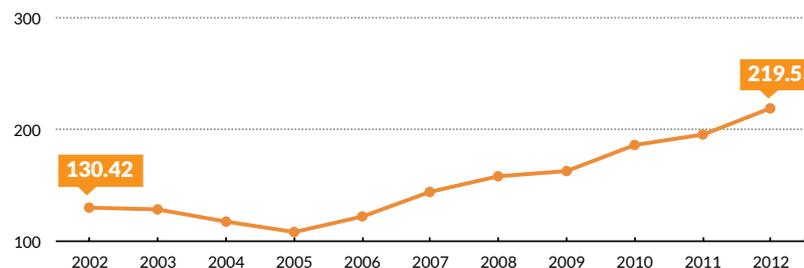
Trends

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

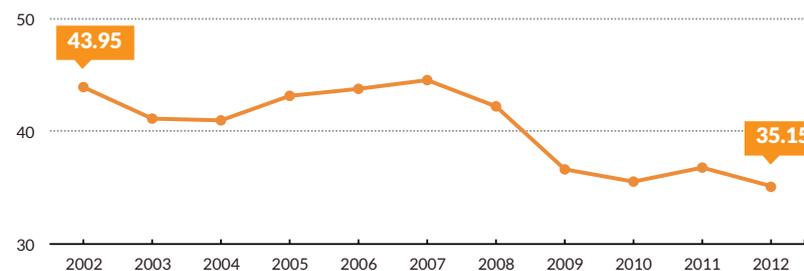
GDP (current billion US \$)



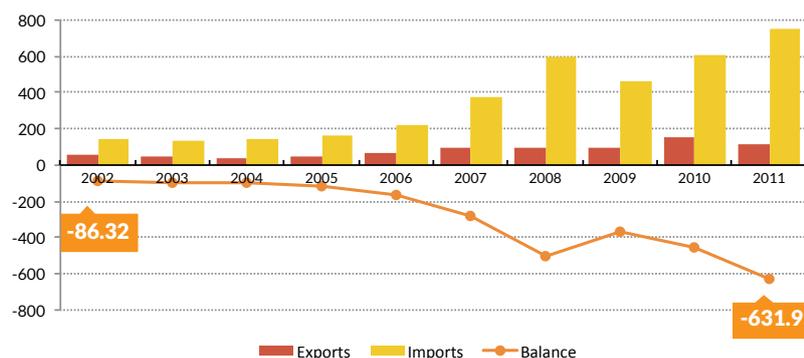
GDP per capita (current US \$)



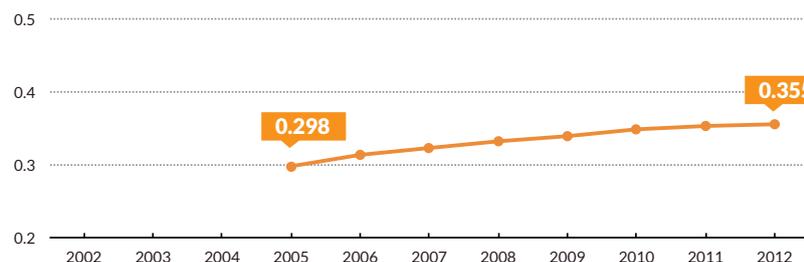
Agriculture % of GDP



Trade balance (current million US \$)



Human Development Index



Although the economic growth rate, which has averaged 4% since 2005, has been greater than the population growth rate (currently about 2.4%), poverty in Burundi remains prevalent and has been stagnant since 2006 when the rate of poverty was estimated at 67% (International Monetary Fund. 2012). It should also be noted that anti-poverty spending has risen steadily for the past four years (OECD, et al. 2013).

Burundi's Human Development Index (HDI) puts the country in the 'low human development' category. With an HDI score of 0.355, Burundi ranked 178th out of 187 countries in 2012.

2. Policy and Planning Framework

2.1. General Framework

The overall policy and planning framework in Burundi is provided in the Strategic Framework for Poverty Alleviation (International Monetary Fund. 2012). The first SFPA was adopted in 2006 and organized around four priority strategic axes as follows:

- Improving governance and security;
- Promoting sustainable and equitable economic growth;
- Developing human capital;
- Combatting HIV/AIDS.

The agriculture sector (including fisheries) was identified as the key sector to drive the country's economic growth.

Burundi adopted a second SFPA in January 2012. This Strategy continues the focus on accelerated economic growth through promoting an enabling environment with a view to supporting sustainable development, job-creation, improved wealth distribution and a transformation process of the national economy. Priorities are to reduce the energy deficit, increase productivity in the agriculture sector, consolidate programmes for human development and further support the private sector.

Furthermore, a National Agricultural Investment Plan (NAIP) was adopted in 2011, which defines the government's vision and main policy orientations in the agriculture sector for the period 2012-2017. Priority axes are organized around the four following objectives: (i) sustainable growth in production and food security, (ii) professional training of farmers and promotion of innovation, (iii) development of value chains and agribusiness, (including the livestock and fisheries sectors), and (iv) institutional building for public bodies.

2.2. Food Security Strategy

The Government of Burundi adopted a Global Agriculture and Food Security Program (GAFSP) in March 2012. The aim of the GAFSP is to complete the financing of the National Agricultural Investment Plan (NAIP), which focuses on an increase in production and a reduction in poverty and food insecurity. The specific objectives of the GAFSP are as follows:

- An increase in the availability and quality of food thanks to an intensification and diversification of production and an increase in agricultural productivity in the Imbo and Mosso regions by improving access to inputs (seeds and fertilizer) and technical know-how;
- An improvement in food security and a reduction in malnutrition among the most vulnerable

groups;

- Effective organization of producers and their integration into a value chain process, enabling them to ensure the production, processing, storage, market access, enhancement and marketing of their produce.

It should also be stressed that the GAFSP makes no reference to fisheries.

Furthermore, Burundi has a National Programme for Food Security (2009-2015), which has the overall objective to re-establish food self-sufficiency and to improve the population's nutrition, with the goal of reducing hunger and malnutrition by 50% by 2015.

2.3. Fisheries in Public Policies

The country's vision regarding fisheries is indicated in the Strategic Framework for Poverty Alleviation (International Monetary Fund, 2012). In particular, fisheries as part of the agriculture sector falls within the context of promoting a sustainable and equitable economic growth, and fisheries is expected to contribute to the whole transformation process of the economy, which should start in the agriculture sector (Swan Judith, 2012). The major objective assigned to the fisheries sector is to increase fish supply for the population.

The National Agricultural Investment Plan (NAIP), 2012-2017, gives further elements on how the fishery and aquaculture sector could be revived. Notably, the NAIP calls for the development of a plan, whose main objective would be to ensure the rational management of the sector while preserving the resource base and promoting responsible, optimal and profitable exploitation.

Furthermore, it should be stressed that in the NPFS 2009-2015, one of the specific objectives is to increase the production of fish products by introducing new technologies and adapted products. Under the sub-programme for sustainable food security, one of the four components is the development of fisheries: the promotion of fisheries and aquaculture is listed as one of the strategic elements for food security by 2015. To achieve the proposed goals, the required annual average growth rate for fishery products is 15% (Kurien John, López Ríos Javier, 2013).

3. Fishery Resources

The total freshwater surface area in Burundi is estimated at 2,300 km². Fisheries resources are dominated by fisheries on the northeastern part of Lake Tanganyika, which contribute more than 90% to the national fish production. Other inland fisheries of commercial importance can be found on Lake Cohoha, Lake Rweru and on some riverine systems (FAO 2005-2015).

Lake Tanganyika is the second largest lake in Africa, with a surface area of 32,900 km², and is shared with the Democratic Republic of Congo, Tanzania and Zambia. The waters under the jurisdiction of Burundi make up about 8% of the lake and are restricted to the northern coastline. Lake Tanganyika is known internationally for its endemic cichlid fish fauna that comprises a genetically diverse demersal community assemblage.

In terms of management structures, while the riparian countries are responsible for the management of their waters, the Convention on the Sustainable Management of Lake Tanganyika provides for the Lake Tanganyika Authority (LTA) to act as the overarching management body for the lake system.

The pelagic fish community on Lake Tanganyika primarily comprises six endemic species including small pelagics or lake sardines locally known as 'ndagala' (*Limnothrissa miodon* and *Stolothrissa tanganicae*) and their major predators composed of *Luciolates Stappersii* (locally known as 'mukeke')

and three members of the genus *Lates*, locally known as 'sangala' (*L. angustifrons*, *L. mariae*, and *L. microlepis*). *L. stappersii* and *S. tanganyicae* live exclusively in the offshore zone and make up 90% of the catches from the lake fishery (Petit and Shipton, 2012). Other species of commercial importance include *Tilapia spp.*

Total fishery production in Burundi is currently estimated around 13,000 MT per year. It should be noted that fishery production was estimated at 17,300 MT in 2000.

Some aquaculture is also conducted in Burundi with artisanal activities focused on Nile Tilapia (*Oreochromis niloticus*). Total aquaculture production is about 200 MT per year. Experiments have also been recently conducted on Catfish (*Clarias gariepinus*).



KEY INFORMATION AND FIGURES ON THE FISHERY AND AQUACULTURE SECTOR

4. Fishery Sector

4.1. Status of Resources

On Lake Tanganyika, there are indications of reduced catches and changes to catch composition, and in some areas fish stocks have already collapsed as stressed in the Strategic Action Program, 2000, of the LTA. These changes are most marked in the northern and southernmost parts of the lake (Petit and Shipton, 2012).

The various factors that have led to such a situation include an increase in fishing effort resulting from open access whether legal or illegal, a high level of illegal, unreported and unregulated (IUU) fishing and an overall degradation of the environmental quality of the lake.

4.2. Major Fishery Dynamics in the Sector

Fishing activities in Burundi are carried out by artisanal fishers and semi-industrial fishers. Artisanal fishers primarily operate in the inshore area targeting juvenile *Limnothrissa miodon* and their demersal components. The semi-industrial fishers primarily operate offshore targeting the *Clupeid* and *Lates* species groups. The description of the fisheries that is provided below makes reference to a recent study on Lake Tanganyika fisheries (Petit and Shipton, 2012).

Artisanal fishers use small un-motorized fishing craft propelled by sail and paddle and fisheries are multi-gear and multi-species oriented. Fishing gears mostly include gillnets, long-lines, and hooks and lines. Gillnets are used all along the lake at various depths according to the species targeted (*Microlepis stomsis*, *Auchenoglanis occidentalis*, *Boulengerochromis microlepis*, *Malapterurus electricus*, *Synodontis spp* and *Bathybathes spp*). Hooks and lines, and long lines target predators, notably Catfish in the inshore areas and the large *Lates mariae* in the offshore zone.

Semi-industrial fishers use motorized catamarans with lift-nets. Two types of semi-industrial units can be distinguished: the 'classical' catamaran and the 'Apollo' unit. The Apollo nets, introduced early in the 1990's are wider and heavier than the traditional lift-nets and require a crew of six men to haul them (versus four men in the case of the 'classical' catamaran). The Apollo nets are also cast deeper than the traditional lift-net and can access the larger *Luciolates* stocks, and schools of immature fish. Since Apollo units are equipped with more powerful outboard engines, fishers can also extend their fishing areas up to Tanzanian and Congolese waters whilst still being able to return to Burundi in the early hours of the morning to land their catches. In order to access DRC waters, Burundian fishers often recruit Congolese nationals from the local riparian communities as crew, or provide the local Congolese leaders with items that are hard to obtain in their country (notably petrol). Finally, it should be stressed that Apollo units have proved to be highly profitable.

The last frame survey conducted in 2011 by LTA indicated that there were a total of 93,000 fishers on Lake Tanganyika, of which 8,200 were Burundian fishers (8.8% of the total), operating 1,515 fishing vessels (all types). This last frame survey also indicated that there were 40 operational fish landing sites in Burundi, although only 15 of these were official sites (Beyens, 2012). Fishing gears currently in use in Burundi include 447 long lines, 710 lift-nets (catamaran and Apollo), 369 gillnets and 9 hooks and lines.

Another five beach seines and 29 musipa nets (used to catch the larger catfishes such as *Protopterus aethiopicus*), can be added to these figures. It should be noted that beach seines are considered illegal since they catch a mixture of small fish of low intrinsic value, mostly Cichlids. However, as

a result of recent improvements in law enforcement, the number of beach seines has reduced significantly along Burundian shores (Petit and Shipton, 2012).

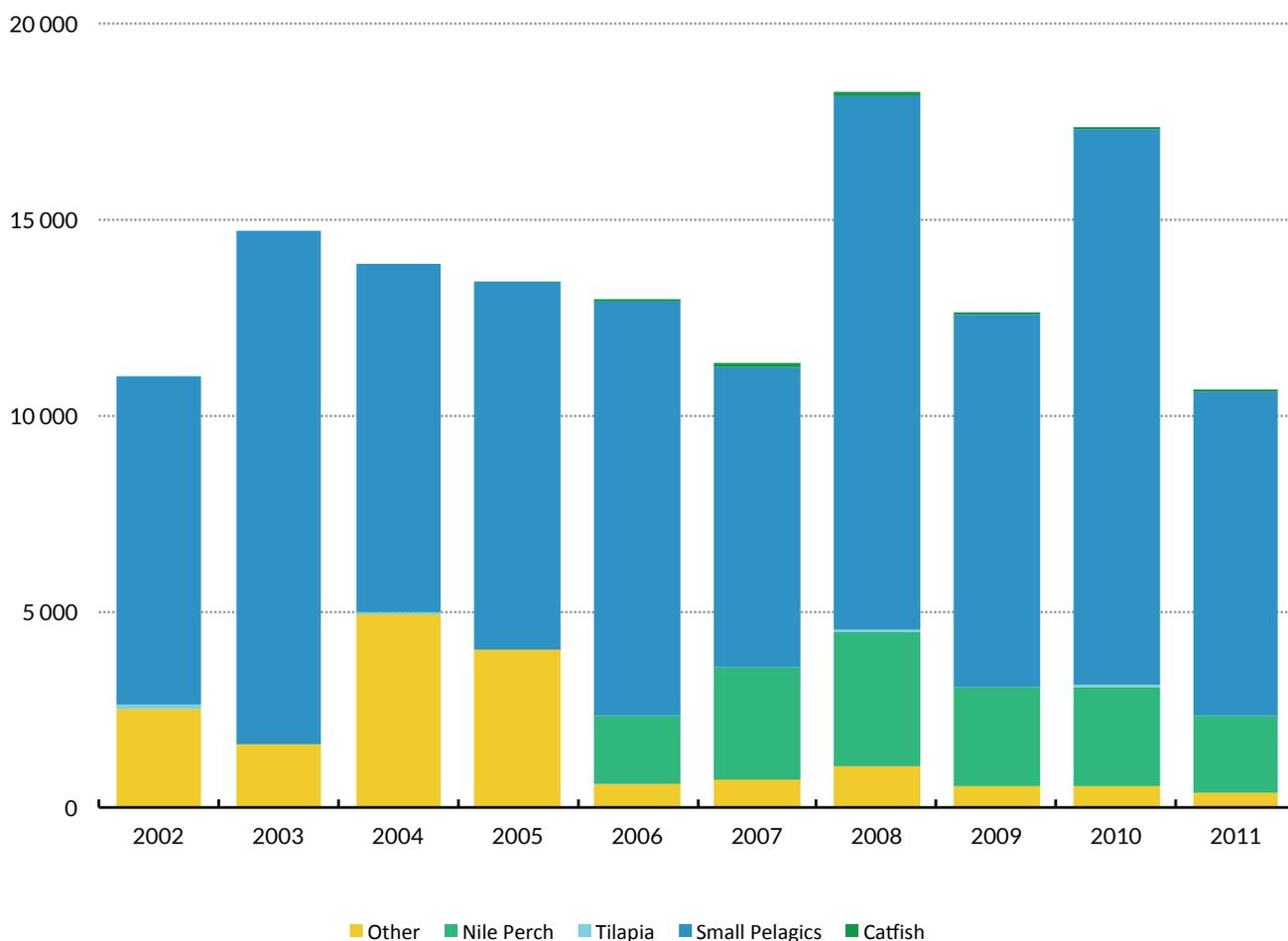
4.3. Fishery Production

According to FAO FishStat, total fishery production in Burundi (which is essentially composed of catches from Lake Tanganyika) has shown significant variation over the last decade, ranging between 10,000 and 18,000 MT per year. Total fishery production was estimated at 17,300 MT in 2010. Over the last 3 years, lake sardines averaged about 79% and the *Lates* species group was about 17% of total production.

These figures are commensurate with figures on total fish production on Lake Tanganyika, which would have ranged between 160,000 and 200,000 MT per year over the last decade. Considering that Burundi has about 8% of jurisdiction on the lake, the share of the Burundi fish production on Lake Tanganyika is expected to range between 12,800 and 16,000 MT per year.

Domestic inland fish production in Burundi (in tons)

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



4.4. Fish Utilization

Fish landings in Burundi include products that have been fished legally within Burundi waters by Burundi fishers, and a significant quantity of products that have been illegally fished in DRC or Tanzanian waters and landed in Burundi by either Burundi fishers (using Apollo units as mentioned above) or fishers of other nationalities (Petit and Shipton, 2012). The fishers of other nationalities are mainly Congolese fishers who are encouraged to land fish in Burundi due to the current security situation in the region, and the high levels of piracy and extortion on the northern part of the Lake.

Most fish landed in Burundi are sold fresh with the market dominated by demand from Bujumbura.

Fish quality in Burundi is generally poor due to the lack of ice used in the fish handling and selling process. In several landing and market sites, high post-harvest losses (PHL) rates are frequent due to quality deterioration. For this reason, post-harvest loss assessments have been undertaken to better understand underlying causes and the dynamics of these losses.

In light of this, significant efforts have been made by IOC-SmartFish to better understand the dynamics of these losses to help decision-makers identify priority actions to reduce losses in those areas deemed feasible.

Furthermore, quality control systems/standards for fish products in Burundi have yet to be introduced, and thus consumers have no recourse to hygiene standards when making purchases (Petit and Shipton, 2012).

A French association (Pays de la Loire Association) recently installed an ice-making factory (using potable water) at Rumonge landing site. The factory has the capacity to produce 6 MT of ice per day and is managed by an association that requires a small fee per kg purchased. At present however, the factory is operating under capacity and only manages to sell a few hundred kilograms a day, the majority of which is used by gillnet fishers operating along the shores of the Ubwari peninsula in the DRC (Petit and Shipton, 2012). It should also be noted that since August 2011 power cuts have become a major issue in Bujumbura, and the ice cannot be kept for significant periods of time without the use of generators. Another issue affecting the quality of fish products relates to the excessive price of cool boxes to keep ice in and fishermen are reluctant to buy them (Beyens, 2012).

The fisheries administration is promoting several initiatives aimed at improving value addition of fish from Lake Tanganyika. These have included the launch of a series of awareness' sessions in fishing communities to encourage the use of ice for fish handling and selling, with the support of the above-mentioned French association (Beyens, 2012).

The construction of various infrastructures for increased fish value addition, including jetties on selected landing sites, has also been planned in the context of the LTA/PRODAP project.

Furthermore, the IOC-SmartFish programme has organized Training of Trainers (ToT) Workshops in fish handling, quality and processing, targeting key landing sites along Lake Tanganyika, and has supported the relocation and reconstruction of the main fish market in Bujumbura (Cotebu market), following a fire that destroyed the city's main market in 2014.

5. Aquaculture Sector

Aquaculture has a long history in Burundi where it was first introduced early in the 1950's. The topography, water resources and climate in Burundi offer favourable conditions for the development of the sector. Increased domestic demand, the high price of fish, particularly at Bujumbura markets, and significant regional market opportunities also contribute to the existence of an enabling

environment for the development of the sector.

Meanwhile, aquaculture is still in its infancy stage in Burundi and production is estimated at around 200 MT per year, essentially composed of Nile tilapia (*Oreochromis niloticus*). It should be noted that according to FAO FishStat data, aquaculture production in Burundi has approximated only 50 MT over the period 2000-2009.

The sector mostly consists of a network of subsistence aquaculture farmers using extensive production systems. Burundi has about 2,600 functional fishponds, covering a total surface area of about 105 ha. Fish fry is supplied by the CNDAPA (*Centre National de Développement de l'Aquaculture et de la Pêche Artisanale*), which falls under the Ministry of Agriculture and Livestock. There are also 3 operational pilot stations based at Isale, Karonga and Kavogero.

Besides subsistence aquaculture, a recent RAS (Recirculation Aquaculture System) project near Bujumbura has been established, where tilapia is produced by Samaki Nzuri Tilapia Farm. The project is still in its first rearing cycle and forecasts to develop with pond farming nearby (COFREPECHE, ACP Fish II, 2013). There are also some trials of cage farming in the Northern Lakes (Cohoha, Rweru and Dogodogo).

The CNDAPA is also conducting aquaculture research such as sex reversal and has successfully conducted trials to induce the spawning of Catfish (*Clarias gariepinus*).

The main constraints faced by the sector include the lack of good quality feed, fry and fingerlings, as well as the lack of qualified extension staff with satisfactory research capacities in aquaculture. Moreover, the sector has been significantly subsidized, which is believed to have contributed to the lack of emergence of commercial farmers.

In 2010 the government prepared a National Strategy for Aquaculture Development in Burundi with support from FAO. This policy document identifies suitable sites and systems for aquaculture in the country, including cage aquaculture on Lake Tanganyika, and insists on the need to prioritize commercial aquaculture and to improve the governance of the sector by promoting public-private partnerships. This National Strategy has yet to be implemented.

The IOC-SmartFish programme also supported the preparation of an East African Community Regional Strategy and Implementation Plan for Sustainable Aquaculture, which concerns Burundi. Efforts in the future strategy are believed to focus on commercial aquaculture value-chains that include semi-industrial and industrial producers, as well as clusters of smaller producers.

6. Fish Import and Export

According to official FAO FishStat data, fish trade in Burundi, in terms of import and export, is negligible. Burundi would be a net fish importer on average in volume, i.e. about 100 MT per year for imports and about 10 MT per year for exports over the last decade, and a net fish exporter on average in value, i.e. about US \$100,000 per year for imports and about US \$200,000 per year for exports. According to FishStat data, exports mainly comprise ornamental fish.

According to a study carried out in 2013 with the support of IOC-SmartFish on the 'Initial assessment of laboratories and quality control authorities in Eastern and Southern Africa', Burundi apparently also exports some grilled fish to Belgium and other African countries such as Uganda. This study further indicates that in Burundi, there is a Competent Authority (CA) responsible for official controls, i.e. verification/inspection/testing of fisheries products amongst others.

It should also be noted that the share of small pelagics to total fish imported significantly decreased

in value from 30% over the period 2002-2005 to 7% over the period 2006-2009.

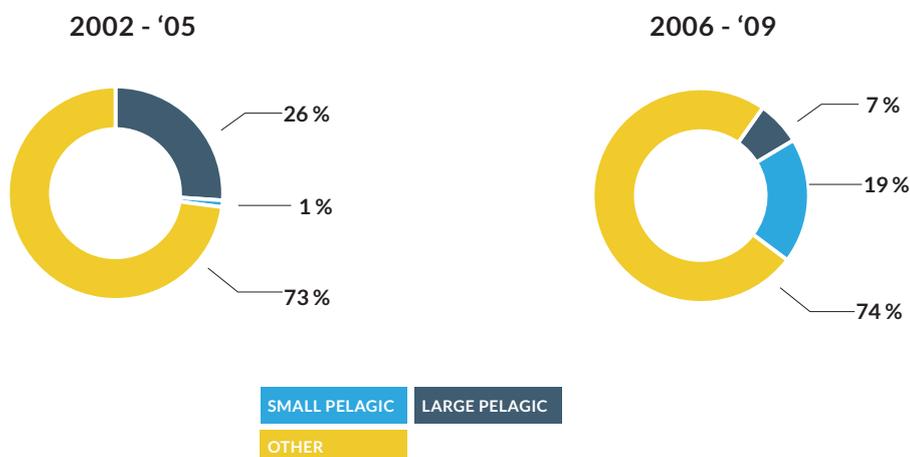
A more in-depth analysis tends to show however that fish trade, which is not captured by official statistics, is not negligible in Burundi.

According to Petit and Shipton (2012), there is a trade in fish products moving from Burundi into the DRC, which is encouraged by fish prices that are reportedly higher in the DRC. With respect to additional regional markets, fish prices in Rwanda are also reported to be approximately double those of Burundi, and some informal trade in fish products from the lake to Rwanda by road is reported.

Regarding fish imports, in addition to the legal and illegal movements of Lake Tanganyika fish products within the region, there is also some illegal trade in fish products from Lake Victoria. In particular, Nile Perch (*Lates niloticus*) and Nile Tilapia (*Oreochromis niloticus*) were being sold regularly at Bujumbura central fish market (3 to 30 MT of Nile perch would be imported from Uganda and a further 10 MT a month from Tanzania). Furthermore, an additional 50 MT of Dagaa (*Rastrineobola argentea*) from Lake Victoria is reportedly imported and sold to rural communities in the northeast of the country. The price of such Dagaa is 5 to 6 times cheaper than the dried Ndagala (*Limnothrissa / Stolothrissa*) from Lake Tanganyika.

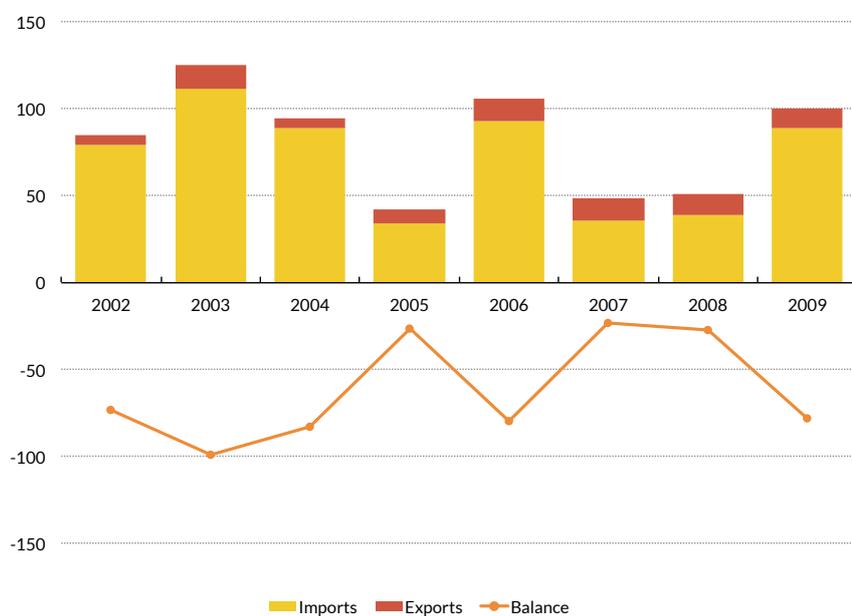
Fish Imports by category in Burundi in value (% of \$)

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



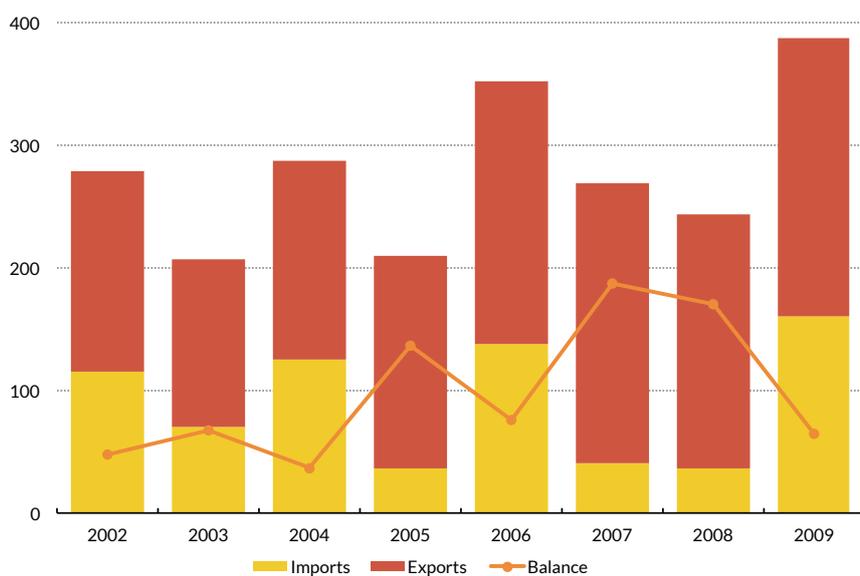
Fish trade balance in Burundi in volume (in tons)

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



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

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



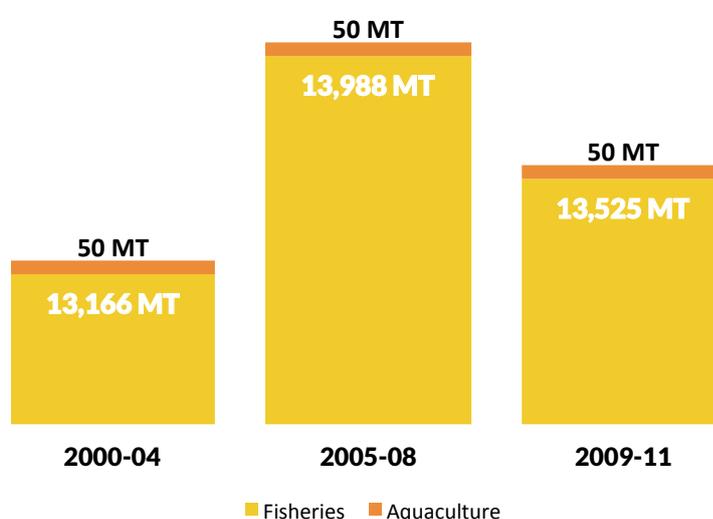
7. Contribution of the Fishery and Aquaculture Sector to the Economy

The fishery and aquaculture sector can be considered a marginal sector in terms of the aggregated economic output in Burundi. It is estimated that fisheries account for nearly **1% of the national GDP** (FAO 2005-2015). **Contribution of the sector to budget revenue** is negligible.

Total fish production in Burundi has approximated 14,000 MT per year over the last decade.

Total Domestic Fish production in volume in Burundi (in tons)

2014 - Figure 10 - Source FAO Fishtat J (2000 -2011)



The low fish consumption and the reliance on local production are reflected in foreign trade figures, which indicate that the fishery sector has very little impact on the **trade balance**. Imports of fishery products represented 0.4% of food and agriculture imports in 2012 and in terms of total imports its share was almost insignificant. In the same year, exports of fishery products accounted for 0.4% of food and agriculture exports, whilst in the overall performance of sales to foreign markets its share was 0.3% (Kurien John, Lopez Rios Javier. 2013). However, as mentioned above informal trade exists with neighbouring countries.

Contribution to employment can be appreciated through a LTA frame survey carried out on Lake Tanganyika. On Burundi's shores, people directly involved in the fishery sector numbered a total of 9,800 people, including 8,200 fishers, 530 fish processors (of which 64% are women) and 1,060 fish traders (of which 28% are women). These figures exclude those people involved in support services and supply industries such as boat building, repairs, transport, inland marketing, etc. and total employment in the fishery sector is likely to be significantly greater than these 9,800 (Petit and Shipton, 2012).

Furthermore, according to Kurien and Lopez Rios (2013), fisheries in Burundi provide livelihoods to nearly 300,000 people, i.e. about 4% of the total population.

According to FAO estimates, per capita **fish consumption** for 2009 was estimated at 2.2 kg per person per year, and since 2003 this indicator has remained more or less stable. Burundi is one of the countries in the region with a low fish consumption level, well below the African average (9.4

kg).

The current contribution of fish and fishery products to food security in Burundi can be assessed as low. The contribution of fish to total animal protein intake is currently estimated at 19.7%, above the world average (16.5%) and very close to the African average (19.1%). The relevance of fish to animal protein intake in Burundi increased from 15.7% in 2007, which, added to an increasing per capita consumption rate, implies that the role of fish is growing in the diet of Burundi's population. Moreover, fish is assessed as the second preferred protein source after beef (Kurien John, Lopez Rios Javier. 2013).

Fish consumption in Burundi (in live weight)

2014 - Figure 11 - 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	14,251MT	1.8 kg/y	0.5 g/day
2004 - 07	14,258 MT	1.9 kg/y	0.6 g/day
2000 - 03	13,251 MT	2 kg/y	0.6 g/day



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

8. Fishery Policy and Planning

Currently, Burundi does not have a specific national fisheries policy document but the government has set out clear policy directions for the sector in the Strategic Framework for Poverty Alleviation (International Monetary Fund, 2012), as mentioned above. In this strategy, the priority objectives of the fishery sector are to increase fish production and to contribute to the structural transformation process of the national economy.

In the first SFPA adopted in 2006, the strategy for the fishery sector was described in general terms under a sub-heading called “Fisheries development and renewal of the fish farming industry” (Swan, 2012). This sectoral strategy was set out in three components: i) Creation of the fisheries industry and fish farming industry; ii) Sustainable management of the fisheries resources; iii) Negotiation of fisheries agreements with the neighbouring countries of Lake Tanganyika. The second SFPA is a continuation of the first SFPA as far as fisheries are concerned.

Furthermore, as mentioned above, the National Agricultural Investment Plan (NAIP), 2012-2017, provides further elements on how the fishery and aquaculture sector could be revived. Notably, the NAIP calls for the development of a plan, the main objective of which would be to ensure rational management of the sector while preserving the resource base and promoting responsible, optimal and profitable exploitation. The proposed strategy is composed of four main components as follows:

- Capacity building of public bodies concerned by fisheries;
- Up-dating legal and regulatory frameworks;
- Promoting the participative management of fisheries;
- Accelerating the growth of aquaculture production through increased surface areas for fish farming, introduction of improved species and increased profitability of investments.

9. Institutional Framework

9.1. Fisheries Administration

Responsibility for the management of the fishery sector in Burundi falls under the Department of Water, Fisheries and Aquaculture (DWFA) in the Ministry of Agriculture and Livestock.

As previously mentioned, there is a specialized body dealing with aquaculture, namely the *Centre National de Développement de l’Aquaculture et de la Pêche Artisanale* (CNDAPA).

Whilst enforcement of regulations falls under the DWFA, legislation authorizes the environmental and judicial police forces and Beach Management Units (BMUs) to participate in the enforcement of some aspects of fisheries legislation (Petit and Shipton, 2012).

9.2. Private and Community-Based Institutions

The Federation of Fishermen and Fish Suppliers of Burundi (FFFP), based in Rumonge, is a strong organization in the fishery sector in Burundi. The FFPF is composed of Fisher’s Committees from



each commune and various stakeholder associations including fish traders and fish processors from the Burundi section of Lake Tanganyika (Beyens, 2012).

At the same time, Beach Management Units (BMUs) have recently been established with a mandate to focus on participation in fisheries management efforts, including data reporting and voluntary compliance. However, the level of autonomy, degree of devolution of management authority, and the management efficacy of the BMUs is difficult to determine.

In terms of taxation, fishers pay small levies and a small amount of their catch is paid in kind to the beach recorders. All fishing communities are supposed to be represented through a Communal Fisheries Committee. However, in most cases, the most influential members of these committees are administrative personnel from the villages who have little knowledge of the fishing industry (Petit and Shipton, 2012).

9.3. Fisheries Legislation

The principle fisheries legislation in Burundi is composed of the Hunting and Fishing Act of 1937 and regulations and ordinances associated with the Act. This Act pre-dates all major international agreements relating to fisheries and needs to be updated in light of regional and international obligations. A draft Fisheries Bill, entitled '*Projet de loi portant organisation de la pêche et de l'aquaculture*', was prepared in 2011 with the support of FAO. The draft Fisheries Bill is a major improvement towards the promotion of responsible fisheries.

A IOC-SmartFish legal consultant was recently mandated to review the draft Fisheries Bill in a more general context of promoting the harmonization of fisheries laws and policies among Contracting States of the Lake Tanganyika Authority (LTA). Relevant international and regional instruments of relevance for the review included in particular: the Convention on the Sustainable Management of Lake Tanganyika; the draft Strategic Action Programme for the Protection of Biodiversity and Sustainable Management of the Natural Resources in the Lake Tanganyika and its Basin (SAP); and the LTR Framework Fisheries Management Plan endorsed in 1999 by the FAO Committee on Inland Fisheries Resources of Africa.

This review identified gaps and made suggestions and recommendations for strengthening the Bill, including suggestions of an editorial nature (Swan, 2012).

9.4. Other Elements in relation to Legal Aspects

Participation in Regional Fishery Bodies

Burundi is a member of the Lake Tanganyika Authority (LTA), the Committee for Inland Fisheries and Aquaculture of Africa (CIFFA), and is also in the process of applying for membership of the Lake Victoria Fisheries Organization (LVFO).

The LTA was established in December 2008 to implement the Convention on the Sustainable Management of Lake Tanganyika of 2003, and by doing so, provides the overarching management structure for the Lake system. The overall objective of the Convention is to ensure the protection and conservation of the biological diversity of the lake and its basin, and to promote the sustainable use of its natural resources. The LTA comprises a Conference of Ministers, a Management Committee and a Secretariat. To achieve the overall objective of the Convention, a Strategic Action Programme for the Protection of Biodiversity and Sustainable Management (SAP, 2000) was developed and endorsed by the four riparian countries (Petit and Shipton, 2012).

The CIFFA was established by the FAO Council in 1971 under Article VI of the FAO Regional Fishery Body. CIFFA is an advisory body with a mandate to promote the development of inland fisheries and aquaculture in Africa.



FOCUS ON FISHERIES MANAGEMENT AND RELATED ISSUES OF LAKE TANGANYIKA'S (BURUNDI JURISDICTION) FISHERIES

10. Administrative Functions

Registration and Licensing

Current regulations do not call for fishing vessels to be registered and licensed or for this information to be maintained in appropriate registers. Moreover, fishing licences are not being issued at present.

The new Fisheries Bill has provisions for both the registration of fishing vessels and issuance of fishing licences for commercial fishers.

Fisheries Monitoring

In Burundi, the Department of Water, Fish and Aquaculture (DWFA) has an extensive programme to collect fish landing and beach price data through beach recorders, but it no longer collects biological information (e.g. length/weight data) as it did until the mid-90's (Petit and Shipton, 2012). It should also be noted that beach recorders (12 in total) do not keep records of landings per vessel.

Coordinated frame surveys on Lake Tanganyika fisheries are conducted on a regular basis through the LTA. The frame survey data is entered and checked at the national level before being submitted to the regional fisheries body. Such frame surveys attempt to capture data for all types of fishing gears, including those that are technically illegal (such as beach seines), and contribute significantly to the monitoring of fisheries on Lake Tanganyika.

11. Fisheries Management Systems

The Convention on the Sustainable Management of Lake Tanganyika, whose implementation is supported by the LTA, provides the general framework for the management of Lake Tanganyika fisheries. However, to date, regional cooperation remains inadequately developed mainly due to the fact that the LTA is a relatively new organization.

As a result of the out-dated legislative framework and the serious weaknesses of fisheries and related institutions in Burundi, the management of Lake Tanganyika fisheries in Burundian waters is poor. Fisheries fall under an open access regime and the few technical management measures are inadequately enforced. A review of future regulations - as provided in the new Fisheries Bill, drawn up by Petit and Shipton, 2012 - highlights significant improvements for the near future. These include the control of access to fishing whereby all commercial fishers will require a licence to operate, the strengthening of management measures such as gear restrictions (e.g. minimum mesh-size for nets) and the possibility of spatial restrictions (closed seasons). Future regulations will also include the prohibition of certain gears such as the use of beach seines, encircling gillnets, monofilament nets and mosquito nets.

The new Fisheries Bill allows for the devolution of management responsibilities and the development of a bottom-up approach to fisheries management through community-based structures (BMUs/ fisher associations), and local and district authorities (Petit and Shipton, 2012). This provision will strengthen Burundi's commitment (signature of the Convention of 2003) to ensure fisher and resource user's participation in the management of fisheries resources through community-based management approaches.

12. Fisheries Control, Surveillance and Enforcement

Compliance with fisheries regulations is the responsibility of the DWFA, which is assisted in its efforts by the marine police, local authorities, and the recently established BMUs. IOC-SmartFish recently supported the fisheries' MCS system in Burundi (Petit and Shipton, 2012). Elements provided below are derived from this support.

The DWFA's Head Office in Bujumbura is severely understaffed and does not have trained personnel assigned to address MCS issues. Nevertheless, in the field, the beach recorders play a compliance role in that they report illegal gears to the BMUs and the police as and when they are observed.

To date, neither the staff at the DWFA, the marine police, or members of the BMUs have received any formal training in terms of developing compliance programmes or undertaking compliance activities.

The equipment that is available for MCS operations is limited and the DWFA does not have any patrol boats. It should be noted however that the LTA is in the process of purchasing ten 15 HP boats to assist BMUs to patrol inshore areas.

In conclusion, current compliance efforts are restricted to land-based operations (checking for illegal gears), appear to be undertaken on an ad hoc basis, and are not adequate; the current MCS system could be significantly improved. Furthermore, it should be highlighted that the Fisheries Bill can be seen as a considerable opportunity for the improvement of MCS, with reference in particular to provisions related to the establishment of vessel, gear and fishing licence registers.

13. Major Issues relating to IUU Fishing

According to Petit and Shipton (2012), major issues relating to IUU fishing on Lake Tanganyika (Burundi jurisdiction) fisheries include the following:

- The incidence of illegal nets in the Apollo or catamaran fisheries in Burundi may be close to that observed in Tanzania, which is about 25.5%;
- The incidence of illegal gillnets is estimated at 32%, and the majority can be found in the Bujumbura-rural district;
- Recently, fishers have started to use monofilament gears en masse; these are forbidden. In 2010, a Burundian radio campaign was launched in which fishers were told to stop using monofilament gillnets;
- Whilst the use of beach seines has been banned on the lake, a significant number of beach seines have been recorded on Lake Tanganyika (1,778 in total), with a very small occurrence in Burundian waters (only 5, i.e. 0.3%, found in Makamba District).

LIST OF DOCUMENTS CITED

Beyens. 2012. *Burundi Training of Trainers in Fish Handling, Hygiene and Processing*, IOC-SmartFish Meeting Report. IOC. 24 pp

FAO 2005-2015. *Profils FAO de la pêche et de l'aquaculture par pays. Burundi (2005). Fiches d'information Profils de pays. Dans: Département des pêches et de l'aquaculture de la FAO [en ligne].* Rome. Mis à jour 1 January 2005. [Cité le 23 June 2015]. <http://www.fao.org/fishery/facp/BDI/fr>

FAO. République du Burundi. 2009. *Cadre National Stratégique des Priorités d'Intervention à Moyen Terme de la FAO au Burundi 2010-2014 (NMTPF)*

International Monetary Fund. 2012. *Burundi: Poverty Reduction Strategy Paper II*. IMF Country Report No. 12/224. 155 pp

Kurien, John, Lopez Rios Javier. 2013. *Flavouring Fish into Food Security*. SF-FAO/2013/14 IOC-SmartFish Programme, FAO, 176 pp

Kurien John, Lopez Rios Javier. 2013. *Fisheries and Food Security in the ESA-IO Region. Burundi Country Brief*. IOC-SmartFish Programme. FAO

Mehler A.; Melber H.; Van Walraven K. 2014. *Africa Yearbook 2013: politics, economy and society South of the Sahara*. Leiden: Brill

OECD, et al. 2013, "Burundi", in *African Economic Outlook 2013: Structural Transformation and Natural Resources*, OECD Publishing. <http://dx.doi.org/10.1787/aeo-2013-14-en>.

Petit and Shipton. 2012. *IUU Fishing on Lake Tanganyika*. SF/2012/15. IOC-SmartFish. IOC. 61 pp

Swan Judith (2012) *Consultancy Services to Harmonize the Fisheries Policies and Regulations of the Lake Tanganyika Riparian Countries of Burundi, Democratic Republic of Congo, Tanzania and Zambia*, Consultancy Report, IOC SmartFish Programme, 196 pp

FISHERIES IN THE ESA-IO REGION: PROFILE AND TRENDS

COUNTRY REVIEW - 2014

BURUNDI



Funded by
the European Union



Co-implemented by
Food and Agriculture
Organization of the
United Nations



INDIAN OCEAN
COMMISSION