

**EAST AFRICAN COMMUNITY
EAST AFRICAN LEGISLATIVE ASSEMBLY**



COMMITTEE ON AGRICULTURE, TOURISM AND NATURAL RESOURCES

**REPORT OF THE OVERSIGHT ACTIVITY ON THE DEVELOPMENT
OF FISHERIES SECTOR IN THE EAC PARTNER STATES**

16TH TO 19TH OCTOBER 2022

PARTNER STATES

**Clerk's Chambers
EALA Headquarters, 3rd Floor
EAC Headquarters
Arusha – TANZANIA**

December 2022

1.0 INTRODUCTION

The East African region is endowed with the largest freshwater lakes in the world, which harbour substantial resources for fishery. Lake Victoria and other lakes such as Lake Turkana (in Kenya), Lake Tanganyika (in Tanzania and Burundi), Lake Kyoga (in Uganda), Lake Kivu (in Rwanda and DRC) and Lake Ambadi (in South Sudan) provide ample opportunity in fishing, fish processing and fish by-product processing, as well as in the supply of fishery-related equipment and storage infrastructure.

The long coastline of the Republic of Kenya and the United Republic of Tanzania and rivers with fresh water in all Partner States provide huge resources for the development of the fisheries sector in the Community. The social, economic and environmental benefits of fisheries sector are substantial. In addition to creating employment and increasing foreign exchange earnings, fishing provides a major source of protein which is important for food security. The sector is also a viable alternative to manufacturing as a source of export-led growth.

Aquaculture has the potential to make a significant contribution to food security and income generation to the East African Community. This has been recognised by multilateral organisations such as Food and Agriculture Organization (FAO) and by a number of countries in the East African region. Through the aquaculture value chain Partner States are interlinked. Not only in the end product (fish) traded from one country to another, but also inputs are sourced within the EAC depending on availability, price and quality.

2.0 BACKGROUND INFORMATION

Due to increasing population and economic growth, the demand for fish in the EAC and globally is growing. Fish production in all regions is increasing, but the demand grow faster than production. According to Article 114 (2) (b) (ii) of the Treaty for the Establishment of the East African Community, Partner States agreed to co-operate through the establishment of common fisheries management and investment guidelines for inland and marine waters. In recognition of the importance of the fishing sector, the EAC established the Lake Victoria Fisheries Organisation which is a specialized

institution mandated to coordinate the management and development of fisheries and aquaculture resources in the EAC region.

However, reports from international organisations indicate low growth of the fisheries sector in most of African countries including EAC Partner States. Some of the challenges that hinder the growth of the sector are deficient transportation and storage facilities, poor energy infrastructure and high electricity costs, lack of investment, finance or credit for small operators, overfishing and depletion of fish resources, water pollution, and lack of common fishery policies among countries that share water resources.

It is against the above background information, the Committee on Agriculture, Tourism and Natural Resources decided to undertake an oversight activity to assess the development and the challenges facing the fisheries sector in the EAC Partner States.

3.0 OBJECTIVE

The main objective of this activity was to assess the development and challenges facing the fisheries sector in the EAC Partner States and to assess the contribution of fisheries in the social economic development of the EAC Partner States. The specific objectives were:

- a. To assess the development and challenges facing the fisheries sector in the EAC;
- b. To assess the contribution of the fisheries sector in the social economic development of the EAC Partner States;
- c. To assess the level of investment by the EAC Partner States in the Fisheries Sector;
- d. To assess the development of the aquaculture in the EAC; and
- e. To engage with stakeholders in the fisheries sector to discuss challenges hindering the development of the sector in the EAC.

4.0 METHODOLOGY

The Committee undertook this activity by conducting interactive engagements with stakeholders related to fisheries sector in the EAC Partner States. The stakeholders included ministries responsible for East African Affairs, ministries responsible for

fisheries, ministries responsible for food security; ministries responsible for trade, ministries responsible for natural resources, ministries responsible for water, and relevant government institutions.

With regard to private sector and non-state actors, the Committee engaged with fishing organizations, small scale fisheries organizations, relevant business communities, consumer organizations and other relevant organizations.

5.0 REPORTS FROM PARTNER STATES

5.1 REPUBLIC OF BURUNDI

5.1.1 INTRODUCTION

In the Republic of Burundi, this activity held in Bujumbura. The activity was attended by key stakeholders including Members of the National Assembly, representatives from the Ministry of East African Community Affairs, the Lake Tanganyika Authority, Federation of fishers, Ministry of Environment, Agriculture and Livestock, and Ministry of Hydraulics, Energy and Minerals.

5.1.2 THE FISHING SECTOR IN BURUNDI

The fishing activities in Burundi are exercised through two forms which are the artisanal fishing which contributes to more than 90% of national fish production and the traditional fishing which is less productive (6%). The fisheries sector play an important role such as, source of animal protein, income and jobs. The number of fishers is estimated to be more than 15,311, including more than 1,000 women fish processors and traders. The number of fishing boats amounts to 5,466 all types combined as per the framework survey held in 2015. The fishing activities take place mainly on Lake Tanganyika and Congo Basin as well as in the northern lakes located in the Nile Basin. The fisheries and aquaculture sector is characterized by low investments from both the public or private sectors.

Fishing provides around 20,000 jobs, 55% of which are held by women and young traders and fish processors. The sector directly and indirectly supports around 120,000

people. The contribution of fishing to GDP is significant and fishing contributes satisfactorily to food and nutritional security through protein intake.

5.1.3 THE INVESTMENT FOR THE FISHERIES SECTOR

- i. The government of Burundi has invested in the sector through the PRODAP project by developing two jetties (Kabonga and Rutumo) as well as the installation of appropriate equipment in different beaches to reduce the post-harvest losses. Also, two ice machines were installed at Rumonge fishing beach and Cotebu market.
- ii. Rehabilitation of the COTEBU market which is the main center for sale and distribution of fish in Burundi. The market was rehabilitated by the Cooperative for the Development of Fish Trade in Burundi (COPEDECOBU).

5.1.4 THE CONTRIBUTION OF THE FISHERIES SECTOR TO THE ECONOMIC DEVELOPMENT OF BURUNDI

- i. The fishing sector largely contributes to meet the needs of the population in terms of food security;
- ii. With regard to employment, fishing generates more than 10,000 jobs through fishing-related activities outside of professional fishers (fishmongers, restaurant workers, processors/those, dockers, canoe repairers, outboard motors, etc). 90% of fish processing is carried out by women;
- iii. The export of fish is not effective due to restrictive measures prohibiting the export of fish as well as the lack of certification and appropriate packaging for fish and fishery products.

5.1.5 ACHIEVEMENTS IN THE FISHERIES SECTOR

The government of the Republic of Burundi uses various strategies for the purpose of developing the fisheries sector. The following are some of the achievements:

- i. Promulgation of the new law governing fisheries and aquaculture in Burundi;
- ii. Identification and protection of spawning grounds;

- iii. Implementation of infrastructures for the reduction of post-capture losses;
- iv. Provided surveillance boats to fishing committees;
- v. Development of landing stages and surveillance antennas;
- vi. Put in place fisheries legal framework;
- vii. Support backup research (Critical habitat areas, ornamental study & women & Fisheries);
- viii. Explore the impacts of the socio-economic impact of immature fisheries and their related measures;
- ix. Set slot sizes of the three commercial fish species;
- x. Harmonization of technical and administrative measures to promote sustainable fisheries.

5.1.6 CHALLENGES FACED BY THE FISHING SECTOR:

- i. Lack of certification of fishery products by the Burundian Bureau of Standardization (BBN);
- ii. Lack of appropriate packaging of fresh and processed fish.
- iii. Fisheries in Burundi is not for commercial/export purposes;
- iv. Lack of modern fishing equipment for the industry;
- v. Lack of an ice machine, refrigerated trucks, cold room and appropriate boxes for the transport of fish, from the fishing beach to the outlet markets;
- vi. Lack of control of climatic hazards (flooding, drowning accidents, etc.);
- vii. Lack of support for fishers's organizations;
- viii. The capture of immature fish;
- ix. Availability of prohibited nets;
- x. Fishing in spawning areas and trade in illegal fish and fishing gear;
- xi. Lack of research to support the fishing activities;
- xii. Pollution and Sedimentation;
- xiii. Destruction of fish habitats by the extraction of building materials;
- xiv. Excessive fishing especially at Lake Tanganyika;
- xv. Inadequate legal framework;
- xvi. Insufficient capacity for monitoring and control;

- xvii. Loss of pelagic and littoral fisheries resources;
- xviii. Habitat degradation/destruction of breeding sites; and
- xix. Insufficient of infrastructure for post-harvest management of /resources.

5.1.7 ACTION TAKEN TO ADDRESS SOME OF THE CHALLENGES

- i. Strengthen patrol activities as part of fisheries surveillance on all lakes;
- ii. More than 25,000 prohibited fishing nets seized and destroyed since 2011;
- iii. Raising awareness among fishers and other fishing stakeholders against all forms of illegal fishing;
- iv. Observe a fishing stop based on the scientific and biological realities of commercial fish species;
- v. Strengthening the institutional capacities research and aquaculture to increase production;
- vi. Encourage the private sector to invest in the fisheries sector to improve production.

5.1.8 LAKE TANGANYIKA AUTHORITY SECRETARIAT:

The Lake Tanganyika Authority (LTA) was established under Article 23 (1) of the Convention on Sustainable Management of Lake Tanganyika, signed in Dar es Salaam, on 12th June 2003 by the four Lake Tanganyika riparian countries. The organs of LTA, as per Article 23 (2) of the Convention, are the Conference of Ministers, the Management Committee, and the Secretariat. The convention is being implemented through the execution of the strategic action plan for the protection for biodiversity and sustainable management of natural resources in Lake Tanganyika and its basin. The key mandate of LTA include the following:

- i. Water/Aquatic resources and their Environment;
- ii. Terrestrial Environment;
- iii. Conservation (aquatic and land/terrestrial); and
- iv. Social livelihoods.

The function of LTA is to ensure the protection and conservation of the biological diversity and the sustainable use of the natural resources of Lake Tanganyika and its basin by the contracting states on the basis of integrated and cooperative management.

5.1.9 THE FRAMEWORK OF THE FISHERIES AND AQUACULTURE ACT

- i. In 2011, the four states harmonized the Lake Tanganyika fisheries policies and laws;
- i. Burundi developed a comprehensive Indicative (Model) Framework for a Fisheries and Aquaculture Act;
- ii. The model provisions for a Fisheries and Aquaculture Act were developed with a view to:
 - a) implementing the Convention on the Sustainable Management of Lake Tanganyika;
 - b) taking into account the updated Strategic Action Programme (SAP) for the Protection of Biodiversity and Sustainable Management of the Natural Resources in Lake Tanganyika and its Basin.
- iii. Takes into account the Framework Fisheries Management Plan (FFMP) endorsed in 1999 by the FAO Committee on Inland Fisheries of Africa (CIFA), and recently by the AU IBAR –FFMP (2020);
- iv. Takes into account the relevant international fisheries instruments such as the FAO Code of Conduct for Responsible Fisheries;
- v. Takes into account the existing national laws; and
- vi. Reflecting on the best practices of modern fisheries and aquaculture legislation.

5.1.10 INTEGRATED SHORELINE DEVELOPMENT PROPOSALS FOR LAKE TANGANYIKA

- i. The land use plan for the 150 meters zone has been developed and focused on the conservation and restoration of biodiversity, the development of the tourism sector, landing sites for fishing boats and port sites. It also focused on the

development of public beaches and the development of shipyards, commercial areas, agricultural areas, botanical valorisation areas and aquaculture cage areas;

- ii. The area between the Kirasa River and the Nyamusenyi River is mainly a spawning area which requires for enormous efforts for its conservation. This region has always been a space with an abundance of fish and therefore suitable for fishing, characterized by favourable waters for laying eggs of several species of fish; and
- iii. The Committee of Experts proposed that this site should be the first aquaculture site in Burundi and would host Phase I of the Burundi Aquaculture Project.

5.1.11 CURRENT INTERVENTIONS BY THE LTA

- i. Aquatic and terrestrial ecosystems, as well as human societies, are sufficiently resilient to adapt to the impacts of climate change and variability;
- ii. Fish stocks are healthy and adequately managed to sustain future exploitation - LATAFIMA- EU SUPPORT (USD 6.9M), Erosion uncontrolled and future invasions are prevented;
- iii. Pollution is reduced and water quality is improved to meet the regionally agreed standards (International water through LATAWAMA- EU SUPPORT- USD 2M);
- iv. Erosion and sedimentation rates are reduced through sustainable land management practices;
- v. Critical habitats are protected, restored, and managed for the conservation of biodiversity and sustainable use; and
- vi. Biological invasions are controlled and future invasions are prevented.

Table 1: Distribution of Lake Tanganyika and Lake Victoria Basins per Countries

COUNTRIES	LAKE TANGANYIKA BASIN		LAKE VICTORIA AND ITS BASIN	
	WATER SURFACE	BASIN(%)	WATER SURFACE	BASIN/CATCHMENT
BURUNDI	8%	6%		7%
D.R.CONGO	45%	16%		
KENYA			6%	22%
RWANDA		4%		11%
TANZANIA	41%	67%	51%	44%
UGANDA			43%	16%
ZAMBIA	6%	7%		
TOTALS	100%	100%	100%	100%

Source: Presentation by the Government of Burundi made before the Committee

Table 2: Generic Root of Transboundary Threats and Challenges in the Lake Tanganyika

Increasing population pressure	<ul style="list-style-type: none"> • Rapid population growth is leading to an increasing demand for ecosystem good and services. • High urbanization rates are leading to increased generation of pollutants
Poverty and Inequality	<ul style="list-style-type: none"> • Large proportions of the population live below the poverty line and rely on exploitation of natural resources • Large proportion of the population are insufficiently literate • Large proportion of the population lack access to alternative livelihoods
Inadequate	Weakness in policy, legal and institutional structures hamper good

governance	governance possibilities
Insufficient resources	Resources of relevant government, management and research institutions are limited, either due to lack of financial means or inadequate priority setting
Inadequate knowledge and awareness	<ul style="list-style-type: none"> • Knowledge on the value and importance of the services and goods provided by healthy aquatic and terrestrial systems is limited • Large proportional of stakeholders are insufficiently informed about causes and possible solutions to environmental challenges
Economic drivers	Demand for services and goods exceeds availability and generation capacity of elements of aquatic and terrestrial ecosystems in the region

Source: Presentation by the Republic of Burundi made before the Committee

5.1.12 ONGOING AND PIPELINE PROJECTS

- i. LATAWAMA project – focusing to improve water quality (establishing a water quality network in the region);
- ii. LATAFIMA project- focusing on ensuring the regional policies and institutional frameworks are enhanced to secure more sustainable fisheries management & reduce IUU fishing in the lake.

5.1.13 RECOMMENDATIONS

- i. Fishing in Burundi plays a very significant socio-economic role, its regulatory framework is satisfactory but needs to be improved and enriched;
- ii. Improvements would be particularly in fish trade and licensing to avoid illegal fisheries;
- iii. It is also important to gradually harmonize laws regulating this sector within the EAC;

- iv. In order to reach the level of other countries in terms of fisheries, Burundi needs to be supported by organizations in the EAC region, especially in fisheries research and capacity;
- v. Lake Tanganyika Authority suggests that it would be inappropriate to let only one basin supervise other basins due to the following reasons:
 - a. Each basin has its own mandate.
 - b. Mandates of these basins differs.
 - c. Ecology and ecosystem of these basin differs.

5.2 REPUBLIC OF KENYA

5.2.1 INTRODUCTION

The oversight activity in Kenya held in Nairobi, It was attended by stakeholders representing the ministry responsible for EAC affairs, ministry of environment and natural resources, state department of fisheries, fishers and beach management units from Kisumu.

During the meeting it was reported that fisheries resources of Kenya are distributed within the inland freshwater bodies and the Exclusive Economic Zone (EEZ) within the Indian Ocean. The marine and inland water fisheries are distinct in geographical scope, operations and markets. Inland fisheries are defined and managed based on ecosystems, water bodies and species, while the classification of marine fisheries is based on fishing gear and their operations, target species and geographic scope. Kenya's fishing industry contributes about 0.5% of the national GDP and about 2% of the national export earnings. The industry employs over 60,000 fishers directly and an estimated 1.2 million people directly and indirectly within the fishing, production and supply chain. This income and livelihoods are mainly supported by the freshwater Lakes Victoria, Turkana, Naivasha, Baringo, Rivers Tana, AthiSabaki, Nzoia, Yala, and man-made dams, as well as the coastal and the open sea ecosystems.

5.2.2 PRESENTATION BY STATE DEPARTMENT OF FISHERIES

The Ministry in charge of fisheries developed the Fisheries Policy in 2008 to guide the management and development of the sector. In 2016 Kenya enacted the Fisheries Management and Development Act 2016. The core functions of the State Department of Fisheries include others:

- i. Fisheries policies;
- ii. Fishing licensing;
- iii. Development of fisheries;
- iv. Fish quality assurance; and
- v. Protection of the marine environment

The State Department of Fisheries has four (4) State Agencies and a Levy Trust as follows:

5.2.2.1 The Kenya Marine and Fisheries Research Institute

The Kenya Marine and Fisheries Research Institute is mandated to undertake research in marine and freshwater fisheries, aquaculture, environmental and ecological studies for sustainable exploitation of fisheries and other aquatic resources. It was established in 1979 with the responsibility of conducting research and making management recommendations essential for the national exploitation of living and non-living aquatic resources in the ocean waters, as well as the fresh water in the hinterland. The institute undertakes research activities in close consultation with and under the general supervision of the National Council for Science and Technology.

5.2.2.2 The Kenya Fisheries Service

The Kenya Fisheries Service was established to conserve, manage and develop Kenya's fisheries resources. The objectives of the Kenya Fisheries Service are:

- i. Provide education to create public awareness and support for fisheries conservation, management, development and sustainable use;
- ii. Set and meet goals for fisheries conservation, management, development and sustainable use;
- iii. Ensure the appropriate conservation and development of standards on management, sustainable use, development and protection of the fisheries resources;
- iv. Develop standards for the management of all fisheries and aquaculture activities and fishing related activities;
- v. Develop guidelines for the preparation of fisheries specific management plans for the Kenya fishery waters;
- vi. In collaboration with county governments and the Fish Marketing Authority, identify opportunities and promote all aspects of fisheries marketing; and
- vii. Liaise with agencies and persons, including stakeholders, industry, government agencies, regional and international organizations and experts, whether local or

foreign, on matters falling within the scope of Fisheries and Management Act; No. 35 of 2016.

5.2.2.3 The Kenya Fish Marketing Authority

The Authority is mandated to market fish and fishery products from Kenya (FMDA 2016).

5.2.2.4 The Kenya Fishing Industries Corporation

This Corporation is mandated to exploit fishery resources in Kenya fishery waters and high seas by promoting the establishment, development and efficiency of business engaged in the fishing and fishing related activities.

5.2.2.5 The Fish Levy Trust Fund

The Fish Levy Trust Fund was established to provide supplementary funding of activities geared towards management, development and capacity building, awards and urgent mitigation to ensure sustainability of the fisheries resource. The Fund is established under the Fisheries Management and Development Act, 2016.

5.2.3 THE FISHING ACTIVITIES IN KENYA

The Committee was informed that Marine fish production is from the territorial waters and the Exclusive Economic Zone (EEZ), spanning approximately 230,000 km². The fishing capacity is constituted of about 3,000 small-scale fishing crafts and approximately 14,000 fishers. The small-scale fishing crafts are dominated by wooden dugout canoes, mashua and outriggers, of which less than 10% is motorised. There are 3 - 4 shallow water trawlers, while about 30 - 40 purse seiners and 4 - 9 longliners are licensed to fish in the Kenya EEZ annually. Marine fishery catch data indicates an annual production of 24,709 metric tonnes worth KES 4.6 billion. The status of nearshore fishery stocks varies from optimally exploited to overfish for some species and localities. Fisheries that show definite signs of decline include sharks, the semi-industrial prawn trawl fishery and sea cucumber fishery.

The offshore fishery potential is estimated to be between 150,000 - 300,000 metric tonnes worth KES 21 - 42 billion. Lake Victoria contributes about 80% of the fish production in Kenya, 1% of world capture fish and 8% of world inland capture fish and

also supports the largest inland freshwater fishery on earth. In 2016, 118,145 metric tonnes of fish worth about KES 9.44 billion was landed from Lake Victoria. The main commercial fish species from Lake Victoria include *Rastrineobola agentea* (Omena), *Lates niloticus* (Nile perch) and *Oreochromis niloticus* (Tilapia). The current number of fishers is estimated to be slightly over 43,000, and the number of fishing crafts to over 14,000, which are artisanal.

The decline in the Lake Victoria fishery is driven by increasing demand for fish, leading to increasing use of illegal fishing gears, as well the proliferation of macrophytes, due to increased nutrient from runoff, which has far-reaching implications on fish production, and other water based economic activities in the Lake. The other lakes, dams and rivers produce approximately 10,000 mt worth KES 0. 926 billion. The fish is caught by an estimated 8,000 fishers operating 2,200 fishing crafts.

The Lake Turkana fishery is mainly supported by the Nile perch (*L. niloticus*) and Nile tilapia (*O. niloticus*), while other species include *Labeo horie*, *Alestes* spp, *Distichodus niloticus*, *Citharinus* spp, *Bagrus* spp and *Hydrocynus forskahlii* contribute less. The Lake Naivasha fishery is based on seven introduced species namely; *Cyprinus carpio*, *Oreochromis leucostictus*, *Oreochromis niloticus*, *Tilapia zillii*, *Micropterus salmoides*, *Procambarus clarkii* and *clarius* (Catfish) species.

Cyprinus carpio is the dominant fish species in the Lake Turkana followed by *Tilapia*. The changes in the lake environment include the decline in water quality and the proliferation of invasive plants namely *Salvinia molesta* (floating water fern) in the 1980s, and more recently, by water hyacinth, *Eichhornia crassipes*.

The Lake Baringo fishery is made of four fish species namely: *Protopterus aethiopicus*, *Barbus intermedius australis*, *Clarias gariepinus* and *Oreochromis niloticus baringoensis*. *P. aethiopicus* currently dominates the catches, while *O. niloticus baringoensis* used to dominate catches in the 80s and 90s. Fish production in Lake Baringo has been dwindling over the years driven by changes in water level.

The main challenges facing Kenya's fishery sector include environmental change and variability, invasive species, overfishing, declining stocks and postharvest loss.

Management interventions developed over the years include introduction of co-management structures mainly the Beach Management Units (BMUs) and the Community Based Conservation Areas (CBCAs) mandated with the management of fishing operations and conservation of the local environment, and development and implementation of fisheries management plans at the local level.

The fisheries sector has the potential for increased production particularly in the marine fisheries and Lake Turkana. Reduction of postharvest loss, processing and value addition has the potential to significantly increase the value and the contribution of fisheries to the national economy and food security. Investment in land-based fish handling and value addition infrastructure as well as monitoring of the stocks and the water quality are key for enhanced growth in the capture fishery sector. Kenya is looking at national aquatic resources, in particular capture fisheries and aquaculture, as a frontier for economic development to support the Vision 2030 development objectives as well as the Sustainable Development Goals (MDGs) of food security and poverty reduction. The Blue Economy initiative also recognizes the important role of aquatic-based activities, to the economic development and food security of Kenya.

5.2.4 FISHERIES AND AQUACULTURE POTENTIAL IN KENYA

The Republic of Kenya is endowed with the following resources in the aquaculture sector:

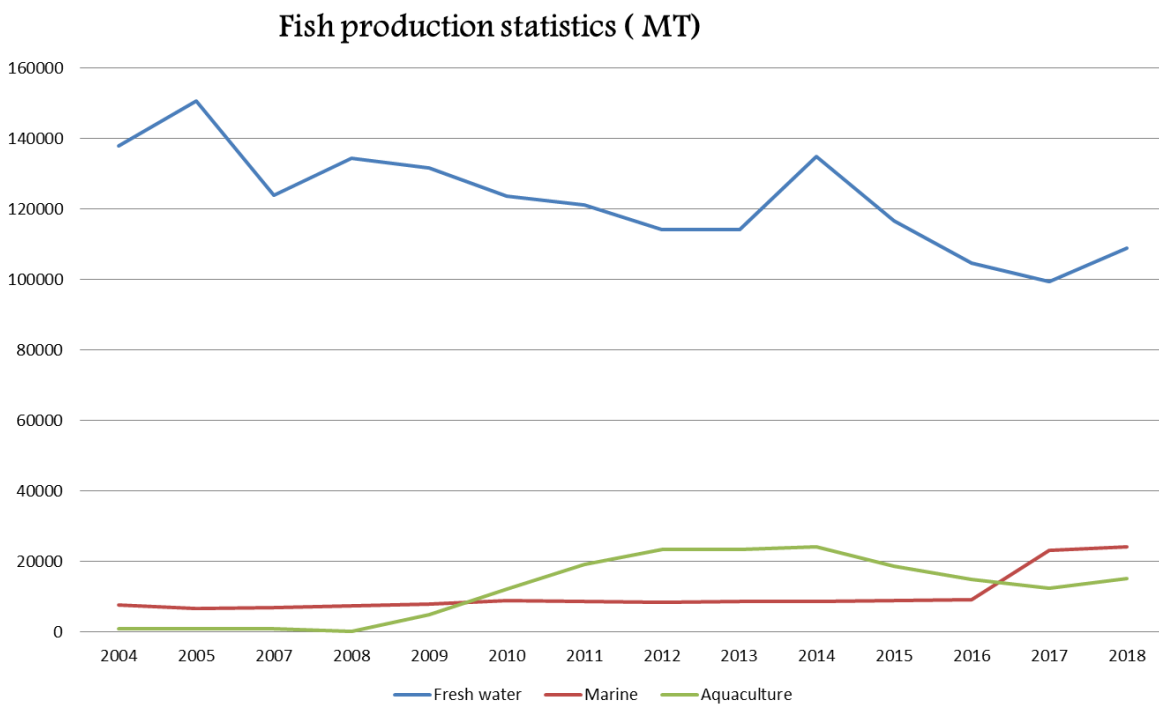
- i. Inland water resources (rivers, lakes and dams-18,029 km)² ;
- ii. Marine water area including the Exclusive Economic Zone (EEZ)- 230,000 km² with the deepest section being 4,000 m;
- iii. Continental coastline-640 km; and
- iv. Aquaculture 1.14 million hectares (Aquaculture suitability Assessment 2009).

5.2.5 THE CONTRIBUTION OF FISHERIES TO THE NATIONAL ECONOMIC DEVELOPMENT

The Committee was informed that fisheries contributed to the national economic development as follows:

- i. food and nutrition security;
- ii. raw material for industrialization- animal feeds as well as fish oil, bioactive molecules pharmaceutical industry;
- iii. enhancing rural development;
- iv. creating employment opportunities for approximately over two million people;
- v. increasing revenue generation for the government from resource rents;
- vi. auxiliary industries and trade; and
- vii. sports and recreation.

Figure 1: Fish Production Statistics (MT)



Source: Presentation by the Republic of Kenya made before the Committee

5.2.6 INLAND WATER BODIES

The Committee was further informed that the Kenya had some inland water bodies, which include:

- i. Lake Victoria- Victoria-Kenyan side (6% of the whole lake =4,128 km²); Lake Turkana (6,405 Km²); Lake Naivasha (210 Km²); Lake Baringo (129 Km²) and Lake Jipe (39 Km²);
 - ii. Major rivers include; Tana (700 Km), Mbagathi/Athi/Galana/Sabaki (530 Km), Ewaso-Ngiro North (520 Km), Kerio (350 Km), Suam-Turkwel (350 km), Mara (280 km), Nzoia (240 km), Voi (200 km), Yala (170 km), Ewaso-Ngiro-south (140 km), Sondu (105 km), Malewa (105 km) and Kuja (80 km);
 - iii. Dams include; Turkwel Gorge; Masinga, Kamburu, Gitaru, Kindaruma and Kiambere dams along River Tana;
 - iv. Inland fisheries in 2021 production was 136,326 Metric Tonnes;
- Lake Victoria fisheries production potential is estimated at 200,000 Metric Tonnes annually.
 - Lake Turkana's potential is 30,000 Metric Tonnes annually.

It was noted that some of the methods that would unlock opportunities in inland fisheries include:

- i. Capacity building for the local communities for sustainable exploitation of the fisheries resource through trainings;
- ii. Strengthening Monitoring, Controlling and Surveillance (MCS) in inland waters;
- iii. The diversification of fish and fishery products for export; and
- iv. Utilization of the Democratic Republic of Congo niche market for Lake Turkana Mango tilapia.

5.2.7 MARINE FISHERIES

The Marine fisheries production potential is estimated at between 150,000 Metric Tonnes and 300,000 Metric Tonnes annually. In 2021, production was at 27,279 Metric Tonnes. To unlock opportunities in this sector, the following needs to be considered:

- i. Capacity build to the local communities to venture into deep sea fishing;
- ii. Strengthening Monitoring, Controlling and Surveillance (MCS) in marine waters; and

- iii. To support fishers with fishing equipment.

5.2.8 AQUACULTURE OPPORTUNITIES

In 2021, aquaculture production was 20,973 metric tonnes while the potential is 450,000 metric tonnes annually in short term and 750,000 metric tonnes in the long term.

Unlocking opportunities/deepening aquaculture would include but not limited to:

- i. Introducing other fish species into aquaculture production;
- ii. Cage culture in natural and man-made water bodies;
- iii. Improving fish seed and fish feed at affordable price;
- iv. Establishment of aquaponics units especially in learning institutions;
- v. Restocking programmes in community dams, irrigation canals and water pans;
- vi. Developing high performance fish brood stock for seed multiplication;
- vii. Support sea weed farmers to increase production and value addition;
- viii. Development of the National Mari-culture Research and Training Centre at Shimoni in Kwale County;
- ix. Development the Kenya Fisheries and Aquaculture Service and Training Centre of Excellence in Kisumu County for selective breeding of Nile perch, milk fish, Nile tilapia and catfish; and
- x. Strengthening of the National Aquaculture Research and Training Centre at Sagana in Kirinyaga County and its satellite at Kiganjo in Nyeri County.

5.2.9 PROTECTION OF THE MARINE ENVIRONMENT

The Patrol Vessel (PV) Doria was commissioned to protect Kenya's exclusive economic zone (EEZ) and to further deter illegal, unreported and unregulated (IUU) fishing. The Kenya Coast Guard Service was also established for this purpose. The government has also gazetted the Navy Captains as authorized officers. There is also the regional cooperation in conducting monitoring, controlling and surveillance exercises (Kenya/Mozambique/South Africa & Kenya/Mauritius/Tanzania). The Republic of Kenya has in place an inter-agency approach that has been adopted. For provision of defence, the Republic of Kenya has in place the Kenya Maritime Authority (KMA), the Kenya Ports Authority (KPA) and the Kenya Marine and Fisheries Research Institute (KMFRI).

5.2.10 PUBLIC PRIVATE PARTNERSHIP

The fisheries sector in the Republic of Kenya works in collaboration with private sector investments that include the following:

- i. Kenya Fisheries and Aquaculture Service and Training Centre of Excellence for selective breeding of Nile perch, milk fish, Nile tilapia and catfish;
- ii. Fish processing-Liwatoni Ultra-Modern Tuna Fish Hub;
- iii. Aquaculture Mini-Processing plants in Kakamega, Migori, Meru and Nyeri Counties;
- iv. Development of fishing ports along the coast and jetties in inland waters bodies;
- v. Up-scaling of cage culture in Lake Victoria; and in value addition services.
- vi. Increasing annual per capita fish consumption from the current 4.6 kg to the African average of 10 kg and progressively to the global average of 20 kg will increase investment opportunities, create more jobs and enhance food security for Kenya.

5.2.11 OTHER MEASURES

- i. Research on fish stocks;
- ii. Research on post-harvest technology;
- iii. Research to improve the quality of fish seed and fish feed;
- iv. Initiated the recovery of illegally grabbed land meant for fish landing sites in collaboration with the Ministry of Lands and the National Lands Commission; and
- v. Strengthened Beach Management Units and established stakeholder organizations (Aquaculture Associations and Wavuvi Association of Kenya, Forum for Women in Fisheries Network) that are now represented on various Boards of Management of Agencies within the Department.

5.2.12 PROJECTS IN THE FISHERIES SECTOR

5.2.12.1 The Aquaculture Business Development Programme

The Aquaculture Business Development Programme (ABDP) shall benefit smallholder fish farmers involved in fish farming including youth in employment and self-employment opportunities. The Programme is envisaged as national in scope but targeting counties with high concentrations of aquaculture activities, high production, existing sectoral infrastructure (processing, marketing

and research), adequate water resources and marketing potential. The programme will target 15 counties and reach 35,500 households, including women, youth and landless people.

5.2.12.2 The Kenya Marine and Fisheries Socioeconomic Development Project

The Government of Kenya in collaboration with the World Bank is implementing the Kenya Marine Fisheries and Socio-Economic Development Project. The objective of the project is to improve management of priority fisheries and mariculture and increase access to complementary livelihood activities to the coastal communities.

5.2.13 CHALLENGES IN THE FISHERIES SECTOR IN KENYA

The following are some of the challenges that the fishing sector continues to face:

- i. Population growth – overfishing/fishing malpractices;
- ii. Pollution & habitat degradation;
- iii. Climate change;
- iv. Maritime security;
- v. Conflict in resource use;
- vi. Illegal Unreported and Unregulated fishing;
- vii. Undermine sustainable fisheries development:
 - a. reduce economic efficiency of fishery
 - b. compromise ecological integrity of fish habitat
 - c. threaten livelihood of fisher folk;
- viii. Low offshore fishing capacity to venture into deep waters and EEZ;
- ix. Weak capacity and poor governance of fishers organizations;
- x. Lack of rescue equipment to respond to lake/sea accidents or distress calls; and
- xi. Lack of affordable financing mechanisms to support fisher folk activities.

5.2.14 WAY FORWARD

- i. The finalization of the National Blue Economy Strategy and Fisheries Policy;
- ii. The fast tracking the development of the Marine Spatial Plan;

- iii. The finalization of the Regulations to operationalize the Fisheries Management and Development Act 2016;
- iv. Strengthening collaborations and linkages to unlock private sector investment into the fisheries and blue economy;
- v. Operationalization of the Kenya Fish Marketing Authority; Kenya Fishing Industries Corporation; Fish Levy Trust Fund; Monitoring, Control and Surveillance Unit;
- vi. Strengthening research in fisheries and blue economy; and
- vii. Partner States need to allocate sufficient funds for fisheries development.

5.3 REPUBLIC OF RWANDA

5.3.1 OVERVIEW OF THE FISHERIES SECTOR IN RWANDA

The Committee was informed that, 6-10% of Rwanda area is occupied by water and most of this area is highly suitable for aquaculture. There are 24 lakes including three shared lakes; Lake Kivu shared with DRC and Lakes Cyohoha and Rweru shared with Burundi. Forty species are reported in Rwandan waters of which only four; *Limnothrissa miodon* (locally called Isambaza), the Nile tilapia *Oreochromis niloticus*, the African catfish, *Clarias gariepinus*, and *Haplochromis sp* are of economic importance.

The contribution of capture fisheries sector to economic development is minimal (less than 1%), being introduced in the 1940s. Total aquaculture production was only 4,281.6 metric tons in 2021/22 and capture production was 39,279 metric tons in 2021/22. There are 128 fish farming cooperatives in ponds with 3,248 members (96 farms having 943 ponds supported by the Government for their operationalization.) Currently there are 42 irrigation schemes with 2,940 members being stocked with mixed –sex tilapia.

There are 42 private investors (companies and cooperatives) in the fish farming industry among them, 33 have started their operations with a projected production capacity of 7,610 metric tons annually; the other 9 companies are preparing to start production, most of them are constructing their cages.

5.3.2 GOVERNING REGULATIONS

The Rwandan fisheries legal framework of the 1937 and 1950s relating to game and fishing was repealed and replaced by Law No.58/2008 of 10/09/2008 determining the organization and management of Aquaculture and Fisheries in Rwanda and the Ministerial Order N° 001/11.30 of 11/12/2020 Regulating Aquaculture and Fisheries. These legal instruments govern various aspects of the industry such as: restrictions in fishing, introduction of aquatic species, aquaculture practices, and grounds for refusal of an aquaculture concession, protection of aquatic organisms, fishing licenses, hygiene

and quality of aquaculture and fishery products. The new law provides for acquisition of aquaculture concessions in natural water bodies which is vital for transformation of aquaculture and fisheries industry.

The Law N°40/2016 of 15/10/2016 Modifying and Complementing Law N°37/2012 of 9/11/2012 establishing the Value Added is a strong sector driving force. It stipulates that all agricultural and livestock products, except processed ones; services of agriculture insurance are exempted from VAT. The Law N° 005/2021 of 05/02/2021 Governing Mutual Legal Assistance in Criminal Matters considers large scale agricultural operations: investment operations in agriculture carried out as follows: fish production of at least five hundred (500) metric tons per year; it states that an investor has right to own private property, whether individually or collectively. Private property, is inviolable. Investment, interest in or right over a property forming part of the investment cannot be seized or confiscated, except where provided for by relevant laws.

5.3.3 CONTRIBUTION OF FISHERIES SECTOR TO THE ECONOMY

The contribution of fisheries sector to the economy, food security, employment, GDP and poverty alleviation is as follows;

- i. Fisheries and Aquaculture sectors provides about 200,000 employment (both direct and downstream jobs);
- ii. The contribution of fisheries and aquaculture to GDP is generally less than 1%;
- iii. The country's fish importation valued at over USD 10 million annually;
- iv. The level of per capita fish consumption is estimated at 2.5 kg per person per year and is one of the lowest in Africa. Neighboring countries in the Great Lakes Region have higher fish consumption such as Burundi 3.6 kg/p/year; Democratic Republic of Congo (DRC) 6.9 kg/p/year; Uganda 10 kg/p/year, Tanzania 11.9 kg/p/year. The low level of fish consumption in Rwanda is of serious concern to national development in terms of population health since fish provides noble

proteins, vital vitamins, minerals, fatty acids, and other micro-nutrients crucial to a healthy diet of the people;

- v. Apart from the few large-scale cage farms found on Lake Kivu and Muhazi belonging to private Companies, other practice is artisanal aquaculture in cages and ponds managed by cooperatives or some individual farmers. This artisanal aquaculture mainly in ponds is made of earthen Tilapia ponds and farmers fertilize them in order to generate natural food for fish or feed them with rice bran where possible; this type of aquaculture contribute to nutrition security because when they harvest, the majority of production is sold locally and it is also a source of income;
- vi. In 2020, aquaculture contributed 2,395 metric tons valued at 7,185,000 USD. In a period of 9 years from a production of 320 metric tons in 2011 up to 2,395 in 2020, aquaculture has grown considerably at a rate of 133.6% and many other potential and known investors keep acquiring concessions and are prepared to seriously embark on intensive aquaculture production in Lake Kivu which shall boost aquaculture production.

Table 3: Aquaculture production trends over the last 10 years

YEAR	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Aquaculture (Tons)	320	400	1,016	1,077	1,155	1,579	3,966	3,508	3,859	2,395

Source: Rwanda Agriculture & Animal Resources Development Board, 2021

Based on the above statistics, it is clear that though the contribution of aquaculture to Rwanda’s National fish production is still minimal compared to capture fisheries (2,395 metric tons from aquaculture versus 39,269 metric tons from capture fisheries in 2020), it is increasing steadily and as the country continues to mobilize potential investors, aquaculture growth and its contribution to GDP shall soon become eminent.

5.3.4 EMERGING ISSUES

- i. The fish production will be increased in aquaculture by enabling the availability of quality fingerlings for farmed species through;
 - a. Installing a National breeding center that will be providing brood stock of farmed species; and
 - b. Promoting the professionalization of a private fish hatchery that distributes fingerlings to farmers.
- ii. The promotion of aquaculture is facilitated by Rwanda Development Bank, who facilitates new investors and link them with the responsible Ministry and its Institution;
- iii. The policies to promote fish farming and attract private investors are in place. These involves concessions and tax exemption on aquaculture inputs (feeds and equipment's);
- iv. The Government of Rwanda supports aquaculture by:
 - a. Attracting and facilitating new investors in the aquaculture sector and fish feed manufacturing and fish processing;
 - b. Supporting farmers in extension service;
 - c. Supporting the operationalization of 96 pond farms across the country by providing fingerlings and feeds for 1 cycle and extension to build the capacity of farmers;
 - d. Developing aquaculture insurance to protect investment in aquaculture.
- v. The popular fish produced in Rwanda is Isambaza and Tilapia which are the most farmed fish;
- vi. The increase of sale of live fish in Kigali and other secondary cities. This provides a viable niche for the better commercialization of fish;
- vii. Imported fish are deep frozen tilapia, fish fillets and other sea food and these are imported mainly from Uganda, Tanzania and China and are re-exported to Democratic Republic of Congo by local traders;
- viii. Currently there is no external project supporting the development of aquaculture and fisheries sector except for the Government;

- ix. Rwanda is promoting all-male farming due to the reputable higher growth rate of male tilapia. This enable farmers to maximize the profitability of their project and achieve the targeted production; and
- x. There are three local fish feed factories producing extruded feed which is distributed to farmers across the country and two factories owned by farmers producing feeds for their own farms.

5.3.5 CHALLENGES FACING THE FISHERIES SECTOR

- i. Illegal fishing activities. The Government of Rwanda is fighting illegal fishing through:
 - a. Existing laws and ministerial order which regulates fishing net, time and location;
 - b. Issuance of licenses every year based on inspected equipment;
 - c. Conducting regular surveillance in collaboration with Police and army marine in all lakes to check the compliance of fishers;
 - d. Conducting regular awareness meetings against illegal fishing and other unlawful practices in every fishing zone.
- ii. Lack of common regulations for management of fishing activities on shared lakes in EAC Partner States;
- iii. Limited ice making machine for fish preservation during transportation;
- iv. Limited storage facilities such as the cold room to store fish in case of high production and also to store raw materials used in fish feed manufacturing;
- v. Increasing number of fishing efforts thus the use of illegal fishing nets. To address this challenge, the Ministry of Agriculture and Animal Resources, Rwanda is reinforcing the use of selective nets which harvests only the grown fishes;
- vi. Limited accessibility of fishing gears at the local market. To address this challenge, the Ministry of Agriculture and Animal Resources reinforces the implementation of ministerial order on regulating aquaculture and fisheries activities;

- vii. Minimal research to support extension. The Ministry of Agriculture and Animal Resources of Rwanda is working on expanding the scope of research; and
- viii. Limited finances from the sector actors.

5.3.6 KEY ELEMENTS TO FOCUS ON

The Committee was informed that the Republic of Rwanda through the Ministry of Agriculture and Animal Resources identified the following key elements to focus on for the development of aquaculture:

- i. Promotion and popularization of more intensive fish culture systems;
- ii. Enhancement and strengthening the local fish seed production and supply system;
- iii. Enhancement and development of quality fish feed production and supply system;
- iv. Develop the capacity building system of actors involved in aquaculture value chain;; and
- v. Building and strengthening fish farmer's organizations.

5.4 REPUBLIC OF UGANDA

5.4.1 BACKGROUND INFORMATION ON FISHERIES

The Fisheries sub-sector is characterized by two distinct segments: Capture and Aquaculture. There are over 25,000 ponds and over 4,000 cages, and 20,000 farmers are involved in the production of fish through aquaculture countrywide. However, many are small scale with very few large scale intensive or semi-intensive farms of generally low input and output production. The ponds' sizes average between 200 and 3000 square meters.

The aquaculture subsector in Uganda has been growing steadily at a very fast annual rate of 300% over the last 10 years. Production has risen from 285 tonnes in 1999 to over 90,000 tonnes in 2010. There are 55 dams stocked with catfish and tilapia since 2002 that contributed greatly to the increase in Aquaculture production and current production is estimated at 128,000 tonnes/year. The rise in production has been due to

the entry of commercial aquaculture producers, the adoption of new technologies and BMPs and the restocking and stocking of communal water bodies.

The representative from Lake Victoria Fisheries Organization (LVFO) informed the Committee that in collaboration with technical ministries in the Partner States (Fisheries and Aquaculture) have elaborated and harmonized different documents guiding the management and Development of Aquaculture in the region. These include the following:

- i. Cage Fish Farming Policy for the East African Community. To promote the use of risk management tools in identifying and assessing risks involved in cage fish farming investments as well as putting in place mechanisms for knowledge and information sharing among cage fish farmers and value chain actors;
- ii. Strategic plan: 2021/22 – 2025/26. To guide the coordinated and harmonized management and development of fisheries and aquaculture activities in the EAC Partner States provides a basis for mobilization and effective utilization of resources, and as a tool for providing improved services;
- iii. Guidelines for Establishment and Operation of Cage Fish Farming in the East African Community of 2018: To ensure cage aquaculture enterprises are established, operated, and managed in a manner that is in line with the Ecosystems Approach to Aquaculture (EAA) which is a requirement for all aquaculture interventions worldwide;
- iv. Regional Guideline for the Certification of fish seed and fish feed in the East African Community (EAC); and
- v. The overall objective of these guidelines is to develop harmonized criteria for certifying, recording, and monitoring firms/institutions/individuals involved in the production of fish seed and feed to produce both adequate supply and quality assured products while ensuring fish health, safety, and environmental sustainability.

Table 4: Fisheries Development and Potentials of Major Water Bodies in Uganda

Lake/water body	Area (sq km)	Current production	Total potential
Lake Victoria	30,720	253,250	500,000
Lake Albert	2,114	56,444	97,761
Lake Kyoga	2,662	68,453	118,561
Lake George	266	3,100	5,369
Lake Edward	663	6,500	11,258
Lake Wamala	138	6,400	11,085
Albert Nile		5,033	8,717
Victoria Nile		1,560	2,702

Source: Presentation made the Government of Uganda made before the Committee

Table 5: Area and Potential Fish Catch Small Waters

Lake/water Body	Area in Sq km	Current prodn Tonnes	Total Potential
Buhweju	3	64	111
Bunyaruguru Lakes	21	513	889
Paliisa/Bugiri Lakes	125	125	217
Kisoro/ kabale Lakes	34	633	1,096
Nyamusingire	4	60	104
kacheru	38	1,104	1,912
Kijanebalola	38	849	1,470
Grand Total		416,757	721,823

Source: Presentation by the Government of Uganda made before the Committee

Table 6: Official Fish Catch: Major Lakes and Minor Waters

No.	Lake System	Tonnes
1.	Victoria	253,250
2.	Albert	56,444
3.	Kyoga	68,453
4.	George	3,100
5.	Edward	6,500
6.	Wamala	6,400
7.	Albert Nile	5,033
8.	Victoria Nile	1,560
9.	Kumi Lakes	60
10.	Ntungamo Lakes	150
11.	Fort portal Lakes Nakivale	100
12.	Nakivale	274

Source: Presentation by the Government of Uganda made before the Committee

5.4.2 CHALLENGES IN UGANDAN AQUACULTURE

- i. Unorganized/scattered farm establishments across the country;
- ii. Inadequate feed and seed industry;
- iii. Unorganized markets for farmed products;
- iv. Climate change threats;
- v. Aquatic environment pollution;
- vi. Emerging fish diseases and parasites;
- vii. Conflicts due to struggles for production space;
- viii. Theft in cage aquaculture establishments.

5.4.3 CHALLENGES IN THE EAST AFRICAN AQUACULTURE

- i. Lack of reliable Data in Aquaculture;
- ii. Inadequate funding in Aquaculture;

- iii. Inadequate and poor quality brood stock and seed;
- iv. Inadequate, costly, and poor-quality aquaculture feeds;
- v. Disorder in the placing cages in the Lakes;
- vi. Inadequate knowledge and skills to develop aquaculture;
- vii. Inadequate post-harvest handling, value addition, and limited markets for aquaculture products;
- viii. Limited research and innovations in aquaculture;
- ix. Predominance subsistence and small scale aquaculture;
- x. Inadequate and weak farmers' organizations; and
- xi. Inadequate biosecurity and biosafety measures.

5.4.4 ACTIONABLE RECOMMENDATIONS

- i. Support in Mapping all suitable areas for cage fish farming and carrying capacity to increase fish production in a sustainable manner;
- ii. Enhancing skills and promotion of aquaculture Production systems like pond Culture and others;
- iii. Regulate the movement of fish seed and brood stock in the region to avoid genetic dilution and fish diseases;
- iv. Develop an operational Aquaculture Data Collection and Reporting for decision making;
- v. Promotion of new technologies and innovations toward increasing fish production; and
- vi. Strategizing in lowering the cost of aquaculture inputs.

5.4.5 THE INVESTMENT MADE TO DEVELOP THE FISHERIES SECTOR

Fish contribute to foreign exchange earnings and improve income as the distribution of the benefits along the value chain. The fisheries exports have created multiplier effects in the industry with increased horizontal linkages to other sectors of the economy.

Expansion of the size of landing sites and resident population has attracted a significant amount of commercial and service activities. Within the sector, there are backward linkages to boat building, fishing gear and equipment supplies and repairs, and forward linkages to post harvest handling, processing, and marketing. The total investment by private investors in industrial fish processing in Uganda is more than US\$ 100 million.

5.4.6 THE CONTRIBUTION OF THE FISHERIES SECTOR

The fisheries sub-sector contributes significantly to national goals of poverty reduction, economic growth, and national social development. The subsector contributes up to 3% to National GDP and 12.6% to the agricultural GDP and provides for 2.8 million livelihoods. The current production from capture fisheries is about 546,173 tonnes and from aquaculture 128,000 tonnes with a target of 1 million tonnes from aquaculture and 700,000 tons from capture fisheries by 2030. The Sector provides up to 2,400,000 jobs in formal and informal employment.

The fish sector:

- i. Exports: contributed US\$134m in 2005; the highest foreign exchange contribution to the economy of any commodity;
- ii. Food Security. Fish feeds up to 17 million people [69% of the total population] within Uganda annually, providing critical nutrients as well as food protein; and
- iii. Fish consumption in Uganda is estimated at US\$700 m annually and per caput consumption in Uganda is 10kg/cap against the world average of 17 kg /caput.

There are more than 250 species of fish but only three are currently exploited on a commercial basis. These include The Nile Perch (*Lates Niloticus*), Nile Tilapia (*Oreochomis Niloticus*), and Mukene (*Rastrineobola Argentea*).

5.4.7 ACHIEVEMENTS OF THE FISHERIES SECTOR

Uganda has 13 fish processing factories located around Lake Victoria and has been exporting fish fillets to international markets since 1991. The Exports have grown from 4751 tonnes worth US\$ 5.31 million in 1991 to a peak of 36,614.8 tonnes in 2005 worth

US\$ 143.62 million before declining to 14,248.1 tonnes worth 134.79 million in 2014. The export rose up again to 27,172.8 tonnes worth US\$ 177.65 in 2019 before the current downward trend. The regional trade is dominated by artisanal processed fish (smoked, Sundried, and salted). The regional trade is estimated to involve 19,000 tonnes worth \$55 million.

5.4.8 CHALLENGES AND THREATS FACING THE FISHERIES SECTOR

- i. Deforestation and poor land use;
- ii. Unplanned Settlements, Urban Sewage;
- iii. Poverty in Fishing Villages, HIV;
- iv. Unplanned Fishing Village Sanitation;
- v. Regulation of Basin Industries;
- vi. Eutrophication, Algal blooms;
- vii. Increased use of illegal fishing gear (beach seines, monofilament nets, small sized hooks, and gillnets);
- viii. Catching of immature fish;
- ix. Catching of gravid fish (breeding stock);
- x. Increased fishing effort i.e. number of fishers, boats, and gears;
- xi. Too Many Fishers or Overcapacity;
- xii. Poor or Non existing Water Land Infrastructure;
- xiii. Unplanned Fish landing facilities;
- xiv. Water Hyacinth;
- xv. Post-Harvest Losses; and
- xvi. Poor Processing Methods.

5.4.9 PROPOSED WAY FORWARD

- i. Support and promote aquaculture;
- ii. Strengthen fisheries management services through capacity building, providing management equipment and other facilities;

- iii. Explore and provide new technologies including infrastructural development to foster fisheries management;
- iv. Reduce fishing capacity and pressure, e.g. Pay compensation for returned illegal gear and have all lakes controlled;
- v. Fish supply quarters for licensed fish processors and exporters should be introduced;
- vi. A national strategy to improve fish quality and product development;
- vii. Review the existing legal regime to address some of the current issues facing the sector; and
- viii. Develop Fisheries Information Management System.

5.4.10 SPECIFIC OBSERVATIONS OF THE COMMITTEE

- i. Despite the existence of more than 250 species of fish, Uganda exploits only three species for commercial basis. The exploited species are the Nile Perch, Nile Tilapia, and Mukene;
- ii. The value chain of fish maw has not been unlocked in Uganda. The Republic of Uganda ranks among the top sources of fish maw in Africa and the quality of its fish maw ranks highly;
- i. The delayed of the implementation of the Operation Save Nile Perch (OSNP) initiative since its launch in 2009. The representative from the LVFO informed the Committee that the plans for the operation is at advanced stage and the exercise is expected to start in 2023;
- ii. Lack of market infrastructure near the borders has been a major stumbling block for business interactions between traders and customers;
- iii. The existence of national territorial conflicts on water bodies. For example, In Uganda, fishers have marked boundaries in Lake Victoria and this has created fights over fishing territories on the lake leading to loss of lives;
- iv. The Parliament of Uganda passed the Fisheries and Aquaculture Bill, 2021 without involving key stakeholders of the sector and consequently the Bill

- does not address some of the current challenges facing the sector including prevention of importation of illegal fishing nets and other harmful fishing gears;
- v. Lack of Economic Diversification and Rural Industry Development Support Programs;
 - vi. Limited participation of women in Fisheries Development;
 - vii. The less organized nature of the existing fisherfolk cooperatives and fishery associations compared to their land-based agriculture counterparts;
 - viii. The partnership between Fishery Sector NGOs and the Government have always been informal and non-binding;
 - ix. There is much non-ownership of assets such as modern fishing boats and fishing gear;
 - x. Access to fisheries credit or financing for fishers, fish processors, and traders is difficult for them because of the lack of collateral;
 - xi. The fishing activities are seasonal with lean and peak seasons and the fishers have no alternative sources of livelihood during lean seasons; and
 - xii. Lack of knowledge and skills among the small-scale fisheries value chain operators regarding the improved fishing, processing, and handling technologies, and marketing and/or distribution.

5.4.11 SPECIFIC RECOMMENDATIONS

1. The EALA should enact a regional law to regulate captured fish and aquaculture activities which include among others management of commercial fishing, fish selling, post-harvest handling, fish transportation, and fisheries research;
2. Strengthen the organizations and collective action in fisheries strengthening their leadership, organizational management, financial literacy, and/or business management/entrepreneurial skills; strengthening collective action in fish harvesting;

3. The Republic of Uganda needs to adopt an effective mechanism for quality assurance of the export of fish and fishery products to ensure uninterrupted access to international markets;
4. Promoting Value addition of dagaa through improved handling & processing methods;
5. Adopt policies that will help to regulate the number of people in the fisheries sector; and
6. There is a need to ensure user-based ownership and change the mind-set of the fishers.

5.5 REPUBLIC OF SOUTH SUDAN

5.5.1 INTRODUCTION

South Sudan's main water resources include White Nile River, Sudd swamps, lakes and rivers like the Moni Lake, Yirol Lake, Shambe Lake, Noah Lake, Bayak Lake, Sobat river, Terekaka and the Bhar el Ghazal river. These water resources are well endowed with a huge potential of fish that has been estimated to be ranging from 100,000 to 300,000 metric tonnes of fish annually. Over 116 fish species have been reported from this area and include distichodus species, gymnarchus species, hetrotis species, citharinus species, clarias species, lites niloticus, tilapia and catfish and many others.

The fisheries resources found in these diversified water resources do highly contribute in terms of poverty alleviation, food and nutrition security, creating employment opportunities and income generation to the fishers. The total area available for capture fisheries is about 80,000 Km². Fishing is being practiced seasonally, with a two third of the catch being caught during the rainy season from May to September. Majority of the catch is consumed locally.

During this activity in the Republic of South Sudan the Committee interacted with stakeholders from the following:

- i. Ministry responsible for East Africa Affairs;
- ii. Members of Parliament from the standing specialized Committee on Agriculture Food and Security;
- iii. Representatives from South Sudan Chamber of Commerce;
- iv. Representatives from the Food and Agriculture organization of South Sudan;
- v. Representatives from the Ministry of Trade and Industry;
- vi. Representatives from the Ministry of Agriculture and Forestry;
- vii. Members of Parliament from the Committee of Investment and Focal Point;
- viii. Academia from Dr. John Garang University.

5.5.2 DEVELOPMENT OF THE FISHING SECTOR IN SOUTH SUDAN

The fishing sector is important because it supports the livelihood of more than one million South Sudanese. Fishers are estimated to be more than 220,000. The fishers use traditional fishing and processing methods such as the gill nets, hooks, spears bow and arrows, explosive, plants or chemical poison are employed especially with in the Northern part of the Country. The major fishing craft used are Canoes, timber canoes and boats. The preservative methods used are smoking, drying and salting.

Both the dried and smoked fish are marketed in Juba and other towns directly by the producers and fish traders. Both hotel and restaurants are the well identified niche for domestic market. Large scale fish traders use ice to transport fish to the North to hotels and restaurants.

Despite its huge fish potential, the country also depends on imports of fish and fishery products worth USD 617,000 in 2018 from neighboring country of Uganda to satisfy per capital fish consumption, which according to FAO preliminary amounts to 2.6 kg in 2017.

5.5.3 CONTRIBUTION OF AQUACULTURE TO THE FISHERY SECTOR

Aquaculture has been practiced in several places in South Sudan before independence with an annual output estimated to 20 tonnes. The large potential for aquaculture development still awaits to be realized especially in the Southern part of the Country. The small-scale ponds fish farming operations have been constructed with funding from partnership or development partners and non- governmental Organizations such as those in Yambio in the Western Equatoria though still facing problems and external assistance is still needed for capacity building.

5.5.4 POLICIES, STRATEGIES AND LEGAL FRAMEWORK GOVERNING FISHERY IN SOUTH SUDAN

5.5.4.1 Ministry of Animal Resources and Fisheries (MARF)

The department of Fisheries and Aquaculture Development (DoFAD) under the MARF manages the fisheries sector in South Sudan. Functions and responsibilities of the department are as follow:

- i. Management and conservation of fishery resources;
- ii. Promotion of aquaculture development;
- iii. Promotion of fish quality control and preservation techniques;
- iv. Enhancing good fish marketing;
- v. Development and enforcement of fisheries laws and regulations;
- vi. Development of research, training and extension services;
- vii. Strengthening the Institutional framework;
- viii. Conducting surveys on fisheries stocks and potential and sharing data on production;
- ix. Supporting the states in institutional and human resources development (trainings and provision of fishing gear and equipment); and
- x. Formation of strong linkages with states governments to ensure effective management of fisheries resources.

5.5.4.2 The Fishery policy

The policy was formulated into the National Fisheries policy in 2017. The revised policy focused on prioritized objectives for developing the fisheries sector. The National Fisheries Policy 2017 focusses on eight key policy areas:

- i. Governance;
- ii. Institutional capacity and Human resource development;
- iii. Research, development and resource monitoring;
- iv. Capture fisheries;
- v. Aquaculture;
- vi. Post- harvest and value addition;
- vii. Fish marketing, trade and investment;
- viii. Financing capture fisheries and aquaculture development.

5.5.4.3 The Fishery Bill

The Fisheries and Aquaculture Development Bill is currently being prepared. This Bill could be used to align it to international instruments and approaches to which South Sudan is a partner. The instruments which the Republic of South Sudan is part are the Code of Conduct for Responsible Fisheries, the Ecosystem Approach to Fisheries and the Convention on Wetlands, the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication and other relevant instruments and approaches.

5.5.5 CHALLENGES FACING THE FISHERY SECTOR

- i. Inadequate capital investment in the fisheries sector in terms of Production, value addition, markets and trade infrastructures;
- ii. Limited technical capacities in data collection, analysis, use, management and sharing;
- iii. Fisheries market information system not established;
- iv. Limited trained personnel and skilled professionals in the fisheries;
- v. Poor accessibility of the fishing areas due to the under developed roads which makes it difficult to transport fish and access the markets;
- vi. Limited harvest capacity due to basic fishing gears and techniques and poor handling, preservation and storage all through the value chain hence leading to high fish post-harvest losses;
- vii. Absence of fishery infrastructure such as market stall, shortage facilities, collection points and landing sites;
- viii. Fishing seasons that limit the number of fish harvested; and
- ix. Hygienic conditions of many of the fishing markets are poor.

5.5.6 SPECIFIC OBSERVATION

- i. Fishers are unorganized, lack of skills and means to scale up their operations to capture enormous market opportunities;
- ii. It was noted that fish in South Sudan die because of old age because of inefficient methods used hence resulting into high post- harvest losses;

- iii. Aquaculture has been practiced in several places in South Sudan but still faces problems of inadequate fingerling and feed supply;
- iv. Fishers are generally unlicensed and therefore the question of obtaining reliable data is almost impossible; and
- v. There are no developed landing sites and the few are just scattered along the river bank.

5.5.7 SPECIFIC RECOMMENDATION

- The problem of aquaculture could be alleviated by providing external assistance in terms of capacity building to the fishers;
- Funds should be availed to the ministry responsible for fisheries management that will help it develop the sector in terms of production, markets and trade infrastructures;
- All the sectors and systems of fisheries should be integrated in order to have reliable information and statistics on fishery in the country.

5.6 UNITED REPUBLIC OF TANZANIA

The activity in the United Republic of Tanzania held in Mwanza, which is the fishing city along the Lake Victoria. It was attended by various stakeholders from both public and private sectors including the Ministry of Livestock and Fisheries, the Ministry of Foreign Affairs and East African Cooperation, the Ministry of Investments, Industry and Trade, the Ministry of Water, Tanzania Investment Centre, the Lake Victoria Basin Water Board, the Ministry of Water, Energy and Minerals of Zanzibar, Tanzania Fisheries Association, Tanzania Industrial Fishing and Processors Association and the Nature's Fish Limited. Stakeholders received various presentations, made interactive discussions and visited the Nature's Fish Limited.

5.6.1 PRESENTATION FROM THE MINISTRY OF LIVESTOCK AND FISHING

The Committee was informed that the United Republic of Tanzania covers an area of 94.52 million hectares of which 5.92 million hectares is covered by water. The table below summarizes the contribution of the fisheries sector in Tanzania.

Table 7: The Fisheries Sector in Tanzania

Area	945,000 KM ²
Population (Approximate by 2020)	60 million
Coastline	1,424 Km
Total Fish Production MT (2020)	520,360.48
Inland (MT)	497,130.89
Marine (MT)	436.39
Aquaculture (MT)	22,793.2
Employment (Direct and Indirect) in small scale fisheries	4, 725, 499
Number of Fishers	195,435
Number of Fish Farmers (MLF, 2020)	30,064
Fish Exports (volume + value) (MLF, 2020)	41,319.88 MT (US\$ 223,040,602.07

Fish imports (volume + value) (MLF, 2020)	5.3 MT and 1,489 pcs live fish (Us\$ 87,779.59)
GDP (% of the sector contribution to the national GDP)	1.71
Fish consumption per capital (FAO, 2018)	8.0 Kg

Source: Presentation by the Ministry of Livestock and Fisheries made before the Committee

5.6.1.1 Fisheries Policies and Legal Framework

- i. The National Fisheries Policy of 2015;
- ii. The Fisheries Master plan 2022 – 2037;
- iii. The National Fisheries Research Agenda;
- iv. The Fisheries Act No. 22 of 2003 and its Regulations of 2009;
- v. The Deep Sea Fishing Management and Development Act No. 5 of 2020;
- vi. The Tanzania Fisheries Research Institute (TAFIRI) Act No. 11 of 2016; and
- vii. The Marine Parks and Reserves Units Act, No. 29 of 1994.

5.6.1.2 Capture Fisheries in Action

The United Republic of Tanzania has aligned its national strategies, plans and actions to the Regional and International Development Strategies and Plans related to sustainable utilization and development of fisheries resources. The country is implementing among others UN Agenda 2030 for Sustainable Development Goals (SDGs); The SADC Regional Indicative Strategic Plan (RISDP) of 2020 – 2030; The East African Vision 2050 and the African Blue Economy Strategy.

Tanzania is implementing various protocols, convention and agreements for sustainable fisheries and aquaculture:

- i. IUCN - Convention on Endangered species; Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing; United Nations Convention on the Law of the Sea; The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); SADC Protocol on Regional Monitoring Control and Surveillance;

- ii. Regional fisheries management organizations including:- South Indian Ocean Fisheries Commission- (SWIOFC); Indian Ocean Tuna Commission (IOTC), Indian Ocean Rim Association (IORA), International Whaling Commission (IWC); Indian Ocean Commission (IOC); Lake Victoria Fisheries Organization (LVFO), Lake Tanganyika Authority (LTA);
- iii. Membership to various international and regional bodies to Including:- Food and Agriculture Organization of United Nation (FAO), East Africa Community (EAC), South Africa Development Comminute (SADC); and
- iv. Implementing a National Strategy to combat illegal fishing and cross border trade.

5.6.1.3 Challenges Facing the Fisheries Sector

- i. Illegal unregulated and unreported fishing activities;
- ii. Inadequate knowledge on the fisheries resource base especially in the EEZ;
- iii. Cost for conservation of Aquatic ecosystems;
- iv. Credit provision to artisanal fishers from financial institutions;
- v. Fish post-harvest infrastructures.

5.6.1.4 Revival of the Tanzania Fisheries Corporation

Based on fisheries investment potentials available, reviving the Tanzania Fisheries Corporation (TAFICO) will maximize resource utilization and ensure realization of accrued benefits.

5.6.1.5 Recommendations

- i. Support national & regional initiative geared to sustainable management, development and utilization of fisheries resources;
- ii. Develop and implement regional projects geared to address a Regional common challenges (eg. climate change) and set a sustainable mitigation mechanisms across the region.

5.6.2 PRESENTATION BY THE MINISTRY OF INVESTMENT, INDUSTRY AND TRADE

The presentation from the Ministry of Investment, Industry and Trade focused on the milestones of the ministry towards the fisheries sector as follows:

- i. Fisheries sector employs about 4.5 million people in Tanzania and contributes to income generation and food security. About 30% of animal protein comes from fish;
- ii. In 2021/2022 there was an investment of 11 Billion by two companies: TILAPIA (Bagamoyo) and TANGREEN (Magu). It is estimated that this investment will be producing 15,000 tons annually;
- iii. Tanzania has 16 major processing industries, 5 medium size industries, 33 small scale fish processing industries as well as 13 fish maws processing industries. Also, there are 90 warehouses for fish products and 5 industries producing fishing gears;
- iv. Tanzania entered into agreement with the National Company for Fishing and Aquaculture of Egypt for joint investment for the Tanzania Fisheries Corporation (TAFICO);
- v. The government contracted the China Harbour Engineering Co. Ltd to construct the Fishing Harbour at Kilwa Masoko, Lindi;
- vi. The government is intensifying its efforts to curb illegal fishing along the Indian Ocean and inland waters. Illegal fishing reduced by 95% along the coast and by 80% in the inland waters. Around 1,123 suspects were arrested for involving in illegal fishing;
- vii. The Ministry in collaboration with the National Microfinance Bank (NMB) launched insurance program for fishers called Jahazi Insurance on 31st October 2021. Through this program, NMB entered into agreement with Britam Insurance Company to implement this program by providing insurance cover to small scale fishers for treatment, accidents and fire peril;
- viii. The Ministry in collaboration with the Environmental Management and Economic Development Organization (EMEDO) will implement a project worth 2.7 Billion

- aiming at reducing deaths occasioned by marine accidents. The project will be implemented for three years (2022-2025) in Mwanza, Mara and Kagera regions;
- ix. The government is continuing with the program to improve production, processing and storage environments by rehabilitating the fish landing sites and markets for the purpose of improving quality and safety of fish and related products for local and international markets. It was reported that up to 30th April, 2022 a total of 34,841.72 tons of fish products and 169,089 pieces of live fish with a total value of 475.01 Billion were exported; and
 - x. The government continued to regulate the importation of fish products. Up to 30th April 2022 a total of 4.75 tons of fish products and 895 pieces of live fish valued at 154.23 were imported.

5.6.3 PRESENTATION FROM THE TANZANIA INVESTMENT CENTRE

The Committee was informed that the Tanzania's inland (freshwater) resources cover a surface area greater than 50,000 km² when the three major internationally shared lakes are considered: Lake Victoria (approx. 33,300 km²), Lake Tanganyika (approx.13,400 km²) and Lake Nyasa (approx. 300 km shoreline). Lake Rukwa covers 5,760 km². Other inland fisheries of commercial importance are dams such as Mtera and Nyumba ya Mungu and riverine systems, with the major rivers being Pangani, Wami, Ruvu, Rufiji and Ruvuma.

In 2010 Lake Victoria Fisheries contributed an estimated 243,000MT, valued at approximately US\$ 400 million. The introduction of Nile Perch transformed the fisheries from a locally based artisanal fishery to a national and international capital investment industry. The lake provides a number of opportunities including fish farming/caging, water tourism and water value chain. Since 1997 Tanzania Investment Centre registered about 50 projects in the fishery industry which estimated to have created a total of 6,552 direct employment. Currently there are 14 fish processing industries in

the Lake Zone registered by TIC. The total value of the capital invested is US\$31.079 Million.

Table 8: Challenges facing the fisheries and action taken to address them

SN	Challenge		Action Taken
1	Challenges faced by fish processing industries in the Lake Zone	Illegal fishing practices such as use of poisons, trawling etc	sensitization campaigns are being undertaken
		High export royalties & export license fees	
		Informal fish maws business	promotion of the opportunity to formal fish maws investments
		Unsustainable dagaa fishing techniques	Various sensitization campaigns are being undertaken
		High cost of production due to multiple regulatory frameworks	
		Informal fish processing industries	Promotion of the formal sector is ongoing
		High fuel price due to the existing global crisis	
2	Challenges in fisheries sector	Overfishing which has resulted to depletion of fish stock. Most of the factories are operating under capacity	Environmental friendly laws, policies and regulations are in place
		There is no direct cargo flight for fish and fish maws export.	Construction of Mwanza Airport to be used for International cargo flights is ongoing
		Some of the factories have mother factories in neighbouring countries which causes exportation through neighbouring countries.	Tax and non-tax incentives on investment in fish factories

		High investment cost in fish caging	Promotion of simple fish caging technologies.
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Source: Presentation by TIC made before the Committee

5.6.4 PRESENTATION FROM THE TANZANIA INDUSTRIAL FISHING AND PROCESSORS ASSOCIATION (TIFPA)

5.6.4.1 Introduction of the Industry

The fish processing Industries in Tanzania was established in the early 1990's. In 2006 the industry formed an umbrella association known as Tanzania Industrial fishing and Processors Association –TIFPA, with 12 members from Freshwater (Lake Victoria) and marine waters. The main exports are Nile Perch from Lake Victoria and seafood (octopus, lobsters, crab, prawns, and finfish) from the Indian Ocean.

In the end-1990 and mid-2000, Tanzania was the leading exporter of Nile Perch and its products among the EAC riparian states. Recently, the export of Nile Perch and its products have dropped drastically. With 51% share of the Lake Victoria, Tanzania is ranked 2nd behind Uganda. Government support and conducive environment are needed to improve the industry in Tanzania.

Currently, the industry provides around 6,000 direct employment and around 30,000 indirect employment. The export of Nile Perch generates approximately USD 132 Million whereas the government earns approximately USD 6 million per year. The earning from the industry is about TZs 305 Billion per year. However, enabling the sector along the Lake Victoria may increase the direct employment up to 12, 000 and the indirectly employment for more than 60,000, with the earning to the community of about TZs 560 Billion per year.

5.6.4.2 The Success of the Industry

- i. Purchase from artisanal fishers through fish suppliers;
- ii. Increased export volumes in the end-1990's and mid-2000's, approximate of 50000 tons per year;

- iii. Increased export earnings in the end-1990's and mid-2000,s of approximate of USD 175 million per year;
- iv. Improve livelihood of communities around lake Victoria through ecolabel project including fish landing sites; and
- v. Helped to improve economies around the Lake Victoria regions; and made Nile Perch products and seafood recognized in the international markets e.g. EU, UAE, and regional markets.

5.6.4.3 Challenges Faced by the Industries

The fish processing industries are operating below their installed capacities due to the following challenges:

- i. Acute shortage of raw material for processing which increases the cost of operations;
- ii. Illegal fishing activities:
The major drivers of illegal fishing are the uncontrolled fish maws trade (informally done, trading wet fish maws extracted from undersize fish) and the increased fishing costs (attract use of illegal gears).

5.6.4.4 Illegal Fishing Activities

The current situation is that over 80% of fish arriving into factories are less than 5 Kilograms. Further analysis of the fish arrivals shows that more than 50% of the fish are over 50cm but less than 2 Kgs. Fishes below 2 Kgs do not get an opportunity to lay eggs even once in their life cycle. This is an alarming situation of resource depletion. The depletion is mainly attributed by Nile perch caught by monofilament, solar lamps and beach seines.

5.6.4.5 The Proposed Way Forward

- i. Landing sites found with undersize and illegal fish trade should be temporary suspended;
- ii. Advise and ensure fishers use legal fishing gears;

- iii. Reduce import duty on pelagic fish from USD 2.5 (vibua) to USD 0.5 as it was done in crustacean, cephalopods and molluscs to offset the current shortage of marine fish landings;
- iv. Introduce regulation on net paneling in Tanzania;
- v. Increases the number of by-catch of Nile Perch;
- vi. The number of authorities be minimized to avoid duplication of taxes and license. There is a need to have one authority which ensure monitoring, licensing and compliance;
- vii. Government should ensure the timely refund of VAT to companies to enable them to continue with production smoothly;
- viii. Strict control of fish maws trade including restricting trading of undersized wet fish maws;
- ix. Strict control illegal fishing by enforcing strict control of beach seine and use of monofilament;
- x. Ban the use of solar light in fishing and impose regulations on fishnets paneling;
- xi. All the processing factories both formal and informal to be brought into the same production practices and regular inspections; and
- xii. In order to improve revenue productivity, all participants in the informal processing sector should be identified and brought into the tax net.

5.6.5 PRESENTATION FROM THE MINISTRY OF WATER, ENERGY AND MINERALS – ZANZIBAR

The presentation from the Ministry of Water, Energy and Minerals of Zanzibar focused on the overview of the Zanzibar Water Investment Programme 2022-2027. The objectives of the programme is to address current and projected water demand gap in order to achieve the Vision 2050 targets through:

- i. Strengthening the water governance and institutional arrangements, and ensuring sustainable water resources management with service provision;
- ii. Promoting cross-sectoral and integrated planning to optimal water supply;

- iii. Diversifying water sources (undersea water, rain water harvesting, reuse, storm water, desalination etc.);
- iv. Enhancing climate resilience to ensure water security in Zanzibar; and
- v. Contributing to social inclusion and empowerment.

The Zanzibar Development Vision 2050 is centred on human development for improvements in economic growth to be accompanied by higher overall standard of living as well as the attainment of near –zero extreme poverty in Zanzibar. As part of the holistic planning perspective, the vision is shaped by four pillars. The pillars are:

- i. Economic transformation (shaping the future of the economy);
- ii. Human capital and social services (building the next generations);
- iii. Infrastructural linkages (backbone to making things happen);
- iv. Governance and resilience (Governance and cross-cutting issues).

Basing on the above pillars, there are identified investment focus areas in relation to water resources:

- i. Water investment scorecard and finance for improved water and sanitation services;
- ii. Improving climate resilience water infrastructure development;
- iii. Building climate resilience;
- iv. Gender equality and social inclusion;
- v. Strengthening institutional arrangements and enabling environment;
- vi. Blue economy and sustainable water resources management; and
- vii. Human capacity development.

5.6.6 PRESENTATION FROM THE LAKE VICTORIA BASIN WATER BOARD

The Lake Victoria Basin Water Board (LVBWB) was established in 2000 under the Water Utilization and Allocation Act 1974. The Board has the mandate of managing water resources within the Lake Victoria Basin (Tanzanian side) as guided by the Water Resources Management Act No. 11 of 2009 as amended. The LVBWB operates in three

(3) catchments namely; Kagera, Central and Mara catchments. It has offices in Bukoba, Mwanza and Musoma.

5.6.6.1 Functions of the Board

The major roles of the LVBWB as per the Water Resources Management Act, 2009 are summarized as:-

- i. Water Resources Assessment and Monitoring;
- ii. Water Resources Allocation; and
- iii. Water Sources Protection and Pollution Control.

5.6.6.2 The Role of LVB in Promoting the Fisheries Sector

I. Water Allocation

- a) LVBWB ensures availability of quality water by provision of User Permits;
- b) Fish cadging permit;
- c) Aqua fishing/fish ponds permit.

II. Water Sources Protection and Pollution Control

- a) The Basin identifies water sources;
- b) Protection usually done 60m beyond from the source by beaconing and tree planting;
- c) Well protected water sources supporting fishing sector and livelihood to a substantial number of people, and promotes recreation and tourism.

III. Water Resources Assessment and Monitoring

- a) Water Quality Monitoring Stations at the LVB;
- b) Water Quality Monitoring- at mining and industries for pollution control;
- c) The Basin Multisectoral Forum: Fisheries and other sectors participate in the water resources management discussions;
- d) Members of the Basin Water Board are drawn from different sectors including fisheries sector.

5.6.6.3 Challenges Facing the Sector

- i. Effect of climate change;

- ii. Aquatic pollutions via discharges, pesticides, and illegal fishing;
- iii. Environmental destruction of aquatic habitants;
- iv. Overutilization of water resources.

5.6.7 VISIT TO NATURE'S FISH

On 17 October 2022 the Committee together with other stakeholders visited the Nature's Fish industry located in Ilemela District, Mwanza. The Nature's Fish Limited was incorporated in 2016 and commenced its commercial production in January 2018. The nature and main objective of its business is fish processing and export. The installed capacity of this factory is 75 tons of whole fish per day in three shifts. However, at the moment the company is running only one shift and processing approximate 25 tones daily. The reduction of the working hours is occasioned by the reduction of fish within the lake.

The Company export fresh chilled and frozen Nile Perch fillets. Major markets are Europe (60%), Middle East (20%) and Far East (20%). The Company is a European Union Approved Processing Plant (EU APPROVAL NO. APP 231). Its quality system have been certified for ISO22000 and BRC Global Standards.

Nature's Fish provides direct employment to 450 people and indirect to around 20,000 fishers and it contributes approximate of TZs 3 Billion yearly in taxes loyalties and other forms of revenues. The company practices corporate social responsibility by providing primary health care, supports schools and various NGOs.

They have a policy to create awareness among the fishers community and general public on proper handling of whole fish. They insist on their supply chain to follow legal fishing practices. They also expressed their satisfaction with the services and support they receive from the competent authorities.

During the visit the Committee engaged with the management for an interactive meeting and visited the processing and packaging as well as the fish landing site. The factory highlighted some of the challenges and made recommendations:

5.6.7.1 Challenges Facing Nature's Fish Ltd

- i. Illegalities especially illegal fishing which causes the depletion of resources and consequently industries are processing below their capacity;
- ii. Some of the causes of illegal fishing are:
 - a. Uncontrolled trade in fish maws;
 - b. Use of unapproved fishing gears including fishnets;
 - c. Unsustainable fishing practices;
 - d. The use of unapproved solar lamps which goes up to 6 metres and attracts small fishes.
- iii. High cost of fishing in Lake Victoria;
- iv. High fish levy which increases the smuggling practices to other countries that have lower or no levy at all;
- v. Threat to investments emanating from the effects of environment of Lake Victoria;
- vi. The existence of multiple institutions and regulatory framework.

5.6.7.2 Recommendations

- i. Provide incentives on the export of fish;
- ii. Review laws and regulation to promote sustainability of the resources;
- iii. Harmonise taxes, policies, royalties, regulation, safety, standards and guidelines;
- iv. Assist manufactures to reach the international standard;
- v. Equal treatment between large scale and small scale fishers example the requirements for the size of fish should be the same to all stakeholders; and
- vi. Fast track the construction of Mwanza Airport to allow it to be used by international cargo flights.

5.6.8 DISCUSSIONS BY THE STAKEHOLDERS FROM THE UNITED REPUBLIC OF TANZANIA

During the undertaking of this activity, stakeholders from the United Republic of Tanzania discussed various issues relating to the sector. The observed the following challenges and made recommendations.

5.6.8.1 CHALLENGES

- i. Electricity cut is one of the challenges facing the industry in Tanzania;
- ii. Insecurity in the Lake Victoria (poaching and robbery) in the Lake;
- iii. Shortage of raw materials required for the fisheries sector;
- iv. Fishing of dagaa by using unapproved solar lamps catches a lot of small Nile Perch;
- v. Inadequate research and information with regard to cage farming in the Lake Victoria especially their impact on environment and ecosystem;
- vi. Existence of informal fish processing industries;
- vii. High cost of fish caging;
- viii. High cost of fishing and low prices offered by the industries to fishers; and
- ix. The use of substandard or untested weighing measures which affects negatively the fishers.

5.6.8.2 RECOMMENDATIONS

- i. The LVBC and LVFO should cooperate and collaborate in undertaking their mandate;
- ii. Small size fishes should not be allowed in all markets in order to discourage illegal fishing;
- iii. Governments should develop and promote the use of simple fish caging technologies that does not have impact on environment;
- iv. Government should protect special fish breeding areas;
- v. There is a need to have fisheries authority for every big lake in the country;
- vi. Harmonisation of environmental protection policies and laws. Example was given that along Mara River which is a transboundary resource between Kenya and Tanzania, the river reserve area for Kenya is 45 metres while for Tanzania is 60 metres;

- vii. EAC should harmonise protection measures among Partner States;
- viii. Partner States need to undertake the Save Nile Perch campaign periodically;
- ix. There is a need to have joint operations involving all relevant institutions and stakeholders; and
- x. Fish for export should also be allowed to access local markets to give opportunity to citizens and tourists to enjoy such products.

6.0 GENERAL OBSERVATIONS OF THE COMMITTEE

The Committee made the following general observations during the undertaking of this activity:

- i. The EAC region is endowed with the largest freshwater lakes in the world, which harbor substantial resources for fishery and fish resources, however the contribution of this fisheries sector to GDP is still negligible in most of the EAC Partner States;
- ii. Most of commercial fishing activities for export are concentrated on Lake Victoria leaving out other available resources;
- iii. The marine fishing along the Indian Ocean is not developed to enable it make significant contribution to the development of the sector with the Republic of Kenya and the United Republic of Tanzania. The two Partner States imports marine fish from other countries to feed their population;
- iv. There are territorial conflicts cases reported in the transboundary water bodies in the region with the potential of increase as the Community is expanding with admission of new Partner States. However EAC has not developed joint coordination and harmonization policies and laws;
- v. The fish resource in Lake Victoria and other water bodies is depleting in a high speed because of overfishing and illegal fishing practices in many Partner States;
- vi. Most of the investment projects in the region are concentrated on fish processing for export leaving our investments in aquaculture which would increase the availability of fish resources in the region;
- vii. The Save Nile Perch Operation that was planned by the EAC long time is not yet implemented by the relevant EAC Organs:
- viii. The fish consumption per capital in the region and the entire Sub-Saharan (10kg per year) is low as compared to the global average of 19 kg per year; and
- ix. Participation of stakeholders in the activities of Committees of the Assembly is low due to budgetary constraints especially for key stakeholders coming outside the capitals as they are not facilitated by either the Assembly or their respective Partner States.

7.0 RECOMMENDATIONS OF THE COMMITTEE

The Committee recommends to the Assembly to urge the Council of Ministers to:

- 1. Enhance the inter agency collaboration on shared water resources among the Partner States which would assist to regulate and monitor the fishing activities and fight illegal fishing;**
- 2. Direct Partner States to promote and increase investments in aquaculture and related industries in order to increase the availability of fish in the region;**
- 3. Harmonise policies and laws governing fishing and conservation in the shared water bodies;**
- 4. Direct the Republic of Kenya and the United Republic of Tanzania to solicit for investment along the Indian Ocean in order to utilize their Exclusive Economic Zones;**
- 5. Provide budgetary allocation to facilitate the participation of key stakeholders during the activities of the Committees of the Assembly in order to increase the participation of citizens in the legislative processes of the Community; and**
- 6. Direct the LFVO and Partner States to undertake the long awaited Operation Save Nile Perch in Lake Victoria.**