



Ministry of Agriculture

Bureau of National Fisheries



Fisheries And Aquaculture Policy & Strategy



Quality Fishing.
Better Livelihood.

REPUBLIC OF LIBERIA 2014

Foreword

On behalf of the Ministry of Agriculture I am pleased to present our first fisheries and aquaculture sector policy and strategy which provide guidance towards the realization of our fisheries sector vision.

Our fisheries resources are a national asset and part of our heritage therefore it is our responsibility to manage and develop them for the benefit of the country as a whole, especially for those communities upon which their livelihoods depend. If we are able to achieve this, fish has the potential to make a significant contribution to the social and economic development and wellbeing of our nation. Implementing this policy and strategy is a major step that we take together to achieve this vision.

As I look back over the years I see that we have achieved some milestones, particularly in the area of overcoming illegal fishing in our Fisheries Waters. Liberia, a few years ago, was subjected to an annual loss of over US\$12.0 million through illegal fishing. This loss has recently significantly minimized, as a result of our relentless struggle in confronting illegal fishing, and bringing perpetrators to account. The fish resources that used to be stolen are now available for our small-scale fishers or foreign vessels that pay for the rights to fish. These positive steps provide us with great hope for the future – a future that within this policy has been underpinned by Article 7 of the Constitution of the Republic of Liberia.

The fisheries and aquaculture policy sets out objectives for us to strengthen community stewardship of fishery resources and to support the development of up-and-down stream commercial activities. It promotes the development of sustainable aquaculture for subsistence and commercial purposes to provide more fish for food and jobs. In our industrial fisheries, we will tread with caution and establish a just rights allocation system to encourage economically viable, efficient and sustainable fisheries.

The policy recognizes the safety net that fisheries provide for our poorest people. I am abundantly aware that at a time when climate change is upon us, we need to improve the resilience of our most vulnerable people to change. However, we must also be mindful that the social and economic benefits derived from the sector are dependent on long-term ecological sustainability, so we need to implement strategies that encourage responsible use of the ecosystem.

This policy has been developed based on home grown practical experiences, captured through country-wide consultations, and best practice examples drawn from international experiences. This blend of experience and knowledge, if implemented in the spirit of our guiding principles – equity, sustainability, transparency, optimality, and inclusiveness – will provide us with the pathway to prosperity.

I warmly welcome everyone involved in our fishery sector, especially those fishing, and our regional and international partners to join me in turning this into reality – a reality based on sustainably managed and economically viable fisheries and responsible aquaculture – a reality that generates prosperity for us all for generations to come.

Florence A. Chenoweth,

Minister of Agriculture, RL

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LIST OF ABBREVIATIONS

ACC	Agriculture Coordination Committee
ADPs	Agricultural Development Projects
APDRA	Association Pisciculture et Développement Rural en Afrique
AITB	Agricultural Industrial Training Bureau
AU	African Union
BNF	Bureau of National Fisheries
BOOT	Built, owned, operate and transfer
BRAC	Bangladeshi Reconstruction and Agriculture Corporation
CARI	Central Agricultural Research Institute
CBO	Community Based Organization
CCRF	Code of Conduct for Responsible Fisheries
CECAF	Committee for East Central Africa Fisheries
CDA	Cooperative Development Agency
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMA	Co-Management Association
COMAPHAT/ ATLAFCO	Ministerial Conference on Fisheries Cooperation Among African States Bordering the Atlantic
COREP	Regional Fisheries Committee for Gulf of Guinea
CPC	Contracting Party
DWFSs	Distant Water Fisheries States
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EPA	Environmental Protection Agency
FAPS	Food and Agriculture Policy and Strategy
FCMO	Fisheries Co-Management Office
FCWC/CPCO	Fisheries Commission for the West Central Gulf of Guinea

FDA	Forestry Development Agency
FFDC	Faimaba Fisheries Development Corporation
FFI	Fauna and Flora International
GDP	Gross Domestic Production
GIZ	German International Agency
HACCP	Hazard Analysis & Critical Control Point
ICCAT	International Convention for Conservation of Atlantic Tuna
IFC	International Finance Corporation
IMO	International Maritime Organization
IPSMA	International Port States Measures Agreement
IUU	Illegal, Unreported and Unregulated Fishing
JICA	Japanese International Cooperation Agency
LAFA	Liberia Artisanal Fishermen Association
LBDI	Liberia Bank for Development and Investment
LC	Land Commission
LCG	Liberia Coast Guard
LISGIS	Liberia Institute for Statistics and Geo-Information Services
LiMA	Liberia Maritime Authority
LMA	Liberia Marketing Association
LNP	Liberia National Police
MARPOLS	International Convention for the Prevention of Pollution from Ships
MCI	Ministry of Commerce and Industry
MCS	Monitoring, Control and Surveillance
MCSCC	Monitoring , Control and Surveillance Coordinating Committee
MIA	Ministry of Internal Affairs
MICAT	Ministry of Information, Culture and Tourism
MLME	Ministry of Lands, Mines and Energy

MGD	Ministry of Gender and Development
MOA	Ministry of Agriculture
MOE	Ministry of Education
MOFA	Ministry of Foreign Affairs
MOH	Ministry of Health
MOJ	Ministry of Justice
MPW	Ministry of Public Works
MRU	Minor River Union
MSY	Maximum Sustainable Yield
MYS	Ministry of Youth and Sports
NCP	Non Contracting Party
NIC	National Investment Commission
NPA	National Port Authority
QSTM	Quality, Standard, Metrology and Testing
RFB	Regional Fisheries Body
RFMO	Regional Fisheries Management Organization
SB	Standards Board
SIDA	Swedish International Development Agency
SRFC/CSRP	Sub-Regional Fisheries Commission
TQM	Total Quality Management
TURF	Territorial User Rights Fisheries
UL	University of Liberia
UNCLOS	United Nations Convention on the Law of the Sea
UNMIL	United Nations Mission in Liberia
USAID	United States Agency for International Development
WARFP	West Africa Regional Fisheries Program
WSSD	World Summit for Sustainable Development

1. Setting the scene

1.1 The history and importance of fisheries and aquaculture sector

Liberians have been fishing their coastline, lagoons and rivers with nets, hooks and lines, and traps for many centuries. However, the earliest records only date from 1960 when 44 canoes were recorded fishing along the coastline. By the 1980s this fishery had expanded with the Kru of Liberian ancestry, the Fanti and Ewe of Ghanaian ancestry and the Popoh of Togolese ancestry catching around 2,000 tonnes of small pelagic and demersal fish each year.

At a similar time in the 1970s, a fleet of around 20 industrial vessels were also fishing in Liberian waters for shrimp and demersal fish. They used larger vessels, carrying crews of up to ten men and often going to sea for several weeks at a time. These vessels landed around 3 000 tonnes of finfish and 2,000 tonnes of shrimp per year. During this period, the Bureau of National Fisheries (BNF) considered that the fisheries had room for growth to an estimated total catch of some 50,000 tonnes per year, a level considerably above the reported catches at that time.

For the decades that followed Liberia was in the grip of civil war and during these years, the fisheries regulatory framework became outdated. Monitoring and research more or less came to a halt, resulting in a situation in which very little was known about fishing activities or the status of the stocks or ecosystem supporting the fisheries. These years provided an opportunity for illegal fishing activities to take place, with foreign vessels targeting fish in Liberia's waters and draining potential national revenue into the hands of foreigners. This unmonitored free-for-all situation is likely to have had negative impacts on the health of the fish stocks and the marine ecosystem. In the last two years, the BNF has taken strong action against illegal vessels fishing in Liberian waters and over 40 vessels have been monitored and brought to justice.

Today the fisheries sector contributes about 12 % of Liberia's agricultural gross domestic product (GDP) and 3% of the overall GDP. Revenue to the government from license fees, vessel registration fees, inspection fees, observer fees, import and export charges, and fines totaled US \$400,000 in 2011 and rose steeply to nearly US\$6.0 million by mid 2013, due to the fines gathered from the successful prosecutions of foreign vessels fishing illegally in fisheries waters.

More than half of the population is estimated to live along the coast, dependent or partially dependent on fisheries for livelihoods, including many rural communities, women and youth. Fish provides an estimated 65 % of animal protein intake within the country, mainly because it is significantly cheaper than meat or chicken and readily available, but still, average consumption per capita is only 4 kg per year which is significantly lower than the 17 kg for other coastal states in sub-Saharan Africa and 22 for the global average.

In spite of its fish resources, Liberia still imports cheaper small pelagic species for local consumption, while exporting some high value species such as shrimp. Trade figures are not

considered reliable, partially due to the illegal trade in fish and also due to weak monitoring systems.

Aquaculture activities in Liberia are not new; they began in the 1950s with development of fish ponds at the Central Agriculture Experimental Station in Suacoco, Bong County, for the breeding of common carps, Nile tilapia and catfish. Monoculture and polyculture production systems in earthen ponds were promoted by the World Bank supported ADPs in Lofa, Nimba and Bong Counties in the 1970s & 1980s. Integration of fish with rice in barrage ponds using *Heterotis niloticus*, and cage culture of *Oreochromis niloticus* and *Clarias sp.* have recently emerged.

Available information from Association Pisciculture et Développement Rural en Afrique (APDRA), an NGO which worked with 143 fish farmers in Bong, Nimba and Lofa counties between 2010 and 2013, indicates that from 30 hectares of ponds, the average annual production per farmer was 3 tons/ha/year, and an average annual income of LRD\$137,396. The total annual production of 429 tons of fish in the 3 counties was from extensive ponds with good management often fertilized with livestock waste material but no inputs of feed. The species of interest was *Heterotis niloticus*, polycultured with catfish and tilapia in an integrated system with rice.

It is estimated that the aquaculture production potential could reach 15,000 tons by 2030 with the active involvement of commercial fish farmers in all counties practicing aquaculture as a business and supplying fish to meet the annual shortfall from capture fisheries and for export to foreign remunerative markets for foreign exchange.

Overall, it is widely recognized that the fisheries sector has potential to make a significant contribution to the country's development. Initial steps have already been taken. In 2010, for example, the legal framework was improved with the development of Fishery Regulations that by 2012 were being enforced in a manner that has brought income to the treasury, more fish for the fishers to catch and sell, and more fish for the market and consumer. This has also given a strong message to the world that Liberia is taking the management of its fisheries seriously. However, to maximize the potential contribution many challenges need to be overcome such as: rehabilitation and recovery of the fish stocks and improved fisheries governance. This sector policy and strategy aims to provide the framework for this transition to continue to take place.

1.2 An overview of the fisheries sector

The Liberian coastline is 570 kilometres in length and the country has an exclusive economic zone (EEZ) that extends 200 nautical miles off-shore, consisting of relatively warm waters with low nutrient content. The continental shelf extends from Côte d'Ivoire to Robertsport in Liberia, with an average width of 34 km and the widest part in the central region of Liberia. An inshore exclusion zone (IEZ) reserves the six nautical miles closest to shore for the sole use of subsistence, artisanal and semi-industrial fishing activities - trawling is not allowed inside the IEZ.

There are 15,050 km² of freshwater bodies constituting 14 percent of the total land area of the country. These perennial water bodies (lakes, rivers, estuaries and creeks) coupled with the fact that Liberia is the third highest rainfall country in the world, result in substantial discharge into the inshore areas of the sea presenting a huge asset to the country for mariculture development.

The fisheries resources of Liberia are exploited by different combinations of fishing gear and craft and these are generally divided into the following four groups:

1.2.1 Marine small-scale fisheries

Comprised of the semi-industrial, artisanal fisheries and subsistence sub-sectors, this fishery provides livelihoods for approximately 33, 000 full-time fishers and processors located in the nine coastal counties (i.e. Grand Cape Mount, Montserrado, Grand Bassa, Sinoe, Grand Kru, Rivercess, Margibi, Bomi and Maryland). Around 80 % of those working in the sector are Liberians and 60 % are female. They operate from some 114 fish landing sites along the coastline.

The largest craft are the motorized semi-industrial vessels that target mainly small pelagic species and some larger pelagic species using ring-nets, drift-nets, set-nets and gill-nets. There are around 500 of these craft registered to fish in Liberia and they are generally referred to as the Ghanaian-design or 'Fanti' craft, operated predominantly by Ghanaians. They are built with a combination of whole logs and planks, have a crew of 12 to 20 men and operate with outboard engines ranging from 10–40 horse power. An increasing number of similar craft, built in the Senegalese all planks-design, are also operating in Liberia, with crew from Senegal and Sierra Leone. The inshore small pelagic fish targeted mainly by this fleet consist largely of bonga, bony, sardines and gbapleh. They make up around 60 % of the small-scale catch, providing the main contribution to fish consumption in the country.

The artisanal fishers operate the 'Kru-style' wooden dug-out non-motorized canoes, generally targeting demersal species using a variety of fishing gears, including: cast-nets, beach-seines, set-net, gill-nets, traps and hook and line. The canoes are mostly made from tree trunks that are sourced from nearby forests and propelled by sail and/or paddles. There are around 3,000 of these canoes fishing in coastal waters and they come in two sizes. The first, is a smaller version less than six metres in length, with a depth of approximately 60 centimetres and mostly operated by one to three men. The second, is a medium-sized canoe, greater than six metres in length, with crews ranging from three to five men.

Most of the catch of this sub-sector, estimated to be around 3,000 tonnes per year, is processed locally, mainly through drying and smoking. Almost all fish and fishery products are consumed locally, small amounts by the fishers' families and the bulk sold in the local markets, while some is transported for sale inland or in neighbouring countries. It is not uncommon for higher value fish to be sold fresh and transported immediately to restaurants or directly to the market or to individual homes.

1.2.2 Marine industrial fisheries

The marine industrial fishery can be divided into a trawl fishery for shrimp and demersal finfish that provides frozen whole fish and shrimp for the local market and an off-shore large pelagic fishery. The mixed demersal fishery is not operating in an optimal manner. It utilizes out-dated and at times damaged vessels, equipment, ports and processing facilities, within an environment that is often not safe for workers and polluting the environment. The sector lacks the infrastructure, equipment and expertise to process export-quality fish products. It has traditionally been dominated by foreign companies, with only a few Liberian flagged vessels operating. With the introduction of the six-mile inshore exclusion zone in the 2010 fishery regulations, that banned industrial vessels from fishing in this zone, many of the vessels turned to illegally fishing within the zone. Since 2012, this situation has changed and those now licensed to fish are aware that the BNF, with the support of the Liberian Coast Guard (LCG), will not tolerate any infringement of this regulation and will prosecute those caught fishing illegally in this zone. As a result of the improved governance of this sector the number of vessels fishing has decreased, resulting in reportedly improved catches by the small-scale fishers and a reduction in situations of conflict and thus improved safety for the small-scale fishers.

Liberia falls within the migratory path of the offshore large pelagic tropical tuna species, including the yellowfin, skipjack and bigeye species that migrate within the Atlantic Ocean. In 2012 following the fining of 40 foreign vessels for illegally fishing in Liberian waters, discussions were initiated with foreign companies to start a licensing regime to permit access to foreign vessels to fish in Liberian waters. This would include compensation to the government for the permission to fish, and conservation and management measures to regulate the fishing activities of the foreign vessels.

1.2.3 Inland fisheries

The inland fisheries are based on rivers, lakes and wetlands such as swamps and coastal lagoons. The two major lakes are Lake Shepherd and Lake Piso and there is an extensive river network, the largest and longest of which are the Cavalla and St John Rivers. There are six major rivers and 71 % of the land of Liberia falls within one of the international river basins. Rivers are not navigable as they are shallow and rocky and therefore do not support water transport or fishing on a large scale. Monrovia is surrounded by the Mesurado river wetland, which despite high pollution provides a harvest of tilapia. Although neither the number of people engaged in inland capture fisheries, nor the volume and value of catch is known, it is considered an important seasonal subsistence activity for riverside communities, using mainly traditional fishing gears and traps. Decisions that impact on inland fisheries have historically been driven by interests other than fisheries, such as the water and forestry sectors.

1.2.4 Recreational fisheries

Today recreational fisheries are not of great significance but it is a likely area where growth and new opportunities may arise in the future both in marine and inland locations.

1.3 An overview of aquaculture production

The aquaculture sub-sector, which includes mariculture, is poorly developed and weakly organized resulting in limited benefits in food or livelihood. The sub-sector is largely subsistence and underdeveloped, with about 300 fish farmers nationwide engaged in some form of fish culture generally on a part-time basis. About 1,704 ponds (113.9 hectares) of various sizes are distributed in about 160 rural communities of which 1,125 (73.3 hectares) are in use for farming tilapia and catfish. It is estimated that aquaculture produces roughly 40 tonnes of fish per year, a figure that is expected to increase as many of the ponds that have been dormant since 1990 are now being rehabilitated, albeit slowly, providing employment opportunities for women and youths. The common constraints of lack of seed and feed and inadequate extension and outreach have hampered any real progress in the sector over recent years, although some isolated and externally supported activities have shown some degree of promise.

1.4 The institutional and supporting arrangements

The institution responsible for fisheries is the Bureau of National Fisheries (BNF) that is guided by a Director/Coordinator assigned by the Minister of Agriculture through its Department of Technical Services. The BNF is arranged into three Divisions (marine, aquaculture and inland, and research, statistics and Biology) that are serviced by four Units (aquaculture, Industrial artisanal, inland, and research, biology and statistics). BNF is further supported by the West Africa Regional Fisheries Program (WARFP) including support to a national Fisheries Monitoring Centre and that of a range of local and international staff and experts who support the administrative and technical work of the BNF. A Community Science Program works within selected communities to provide information to the BNF on the fishery catches and fishing effort. In Robertsport a Co-Management Association (CMA) has been established as a pilot project to test options for developing greater community involvement in the management of fisheries.

Over the past few years Liberian fishers have established a number of local community based organizations (CBOs) with the aim of promoting common interests of fishers and fishing communities. These CBOs are typically organized around sea chiefs who traditionally have undertaken various fisheries management and social activities in their respective communities.

1.5 The challenges and opportunities of the sector

The realization of the potential of the fisheries and aquaculture sector is limited by a number of challenges that can be broadly grouped into four categories:

1.5.1 Managing access for responsible use

Fish are not limitless – too many fishers or too much fishing effort can result in overfishing and depletion of the fish stocks. This then reduces the renewable nature of the fishery that leads to non-sustainable fisheries. To stop this happening it is necessary to monitor the level of fishing effort within each fishery, and if this is too high to reduce it through reducing the number of fishers or the time spent fishing or by placing other limitations on the fishery. If

effort is not reduced, competition for the fish will increase which can result in fishers having to work harder to catch the fish they need and ultimately lead to the depletion of fish stocks. Consequently, they will often take short-cuts, such as using illegal gears or fishing in protected areas. Overall, too much fishing effort damages the fish resource and the ecosystem supporting it, while also making the fishery less economically viable, a situation that exasperates these problems.

Decisions about who can and who cannot fish are fundamental to managing the sub-sector and will impact the type of management system and measures applied. Today in the industrial sector access to the resource is managed by a license allocation system to ensure adequate returns to the government, while protecting the sustainability of the stock. This system is in its early days, and is only implemented in the demersal trawl fishery. Challenges are being faced in implementing it, such as: finding the right foreign partners to work with, getting the correct balance between the fees charged, the investment required by the companies, the value of the catch, and developing an open decision-making system. Opportunities lie in developing joint venture arrangements with employment options for Liberians, and attracting vessels to Liberian ports for supplies, services and fish processing.

For the semi-industrial and artisanal sector, fishing craft are licensed but access remains essentially open under the informal management of the sea chief, a situation that can encourage growing participation. This may endanger the sustainability of fish stocks and places communities in danger of becoming excessively dependent on fisheries, a situation that increases: vulnerability to disasters and fluctuations in the resource and conflict among resource users. This also encourages the use of non-sustainable fishing methods such as dynamite, beach seines and monofilament nets. The opportunity to empower individuals and communities for greater participation in the stewardship of the resources, through community management authorities, including allocating access, setting fees, and monitoring the responsible use of the fishery are options supported through this policy and strategy.

1.5.2 Ensuring compliance for maximum benefits

Whichever system of access allocation is used, rules will exist, that need to be complied with. Today compliance to rules is low, but steadily improving. Violations including: encroachment of trawlers into the inshore exclusion zone; vessels illegally targeting the tuna resources; illegal transshipments at sea; illegal gear being used; and misreporting of catches and bycatch. Traditional surveillance platforms are expensive and monitoring such a large area is next-to-impossible. Innovative approaches to overcome foreign illegal fishing are being piloted with excellent results, using a combination of awareness to encourage community-monitoring, use of cutting edge technology combined with intelligence information to ensure surveillance, and nurturing cooperation with neighbouring countries and international partners.

1.5.3 Developing infrastructure for new enterprises

The potential for a more thriving fisheries value chain is great. Fishing requires inputs and fish is a commodity that can be processed, packaged, stored, transported and sold on local and international markets in a multitude of forms. These up-and downstream activities offer

profitable entrepreneurial opportunities: however, the limitations are also large. Industrial fisheries lack fisheries ports and ancillary facilities such as bunkering facilities, dry-docking facilities, ice plants, chill or cold rooms, processing areas, or support industries for packaging materials, supply of fishing gear and spare parts resulting in vessels not choosing Liberia as the preferred port-of-call.

Artisanal fisheries lack: legal fishing gear, safety equipment, landing sites with fish handling and processing areas, storage facilities, ice and chill facilities, potable water, and access to markets, resulting in poor levels of hygiene and high post-harvest losses.

Aquaculture requires feed and seed, improved research and technology and tools and materials for pond development. All these challenges require a multi-sector response to infrastructure planning and development and improved options for catalyzing small scale enterprise development, while being aware of potential social and economic impacts of change and development.

1.5.4 Building capacity for growth

Perhaps the greatest challenge is that of developing human capacity – whether of fishers, suppliers, feed-producers, processors, traders, managers, entrepreneurs, government inspectors, researchers, administrative officers or any other of the many varied roles the sector both offers and requires for its evolution. Hand-in-hand with this challenge is that of developing institutional arrangements at community through to regional level, to ensure that robust processes and systems are in place to guide and nurture sector growth.

1.6 The policy setting

1.6.1 The international policy framework

The international community, including Liberia, has dedicated much effort and expense to developing both legally binding and voluntary international fisheries instruments. The legally binding instruments create obligations for fisheries management, while the voluntary instruments guide the management and development of the fisheries sector. Below the instruments that are important for this sector are introduced:

International fisheries instruments – Liberia is a party to two international legally binding fisheries instruments, firstly the 1982 United Nations Convention on the Law of the Sea (UNCLOS) which establishes a comprehensive legal regime covering all aspects of the sea, while for fisheries it establishes a regime for the conservation and management of fisheries resources and it requires states to conserve and manage living marine resources in areas within their jurisdiction and to cooperate in the conservation and management of resources in areas beyond their national jurisdiction. Secondly, the 1995 Fish Stocks Agreement builds on the comprehensive provisions of the 1982 conventions and emphasizes management responsibilities through Regional Fisheries Management Organizations and cooperation among parties. In addition, the Liberian 2008 Food and Agriculture Policy and Strategy adopts appropriate elements from the international best practice provided in the voluntary

1995 Food and Agriculture Organization (FAO) Code of Conduct for Responsible Fisheries (CCRF).

International environmental instruments relevant to fisheries – The legally binding instruments that Liberia is party to and that are relevant to the fisheries and aquaculture sub-sectors are: the 1981 Abidjan Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region that focuses on the collaborative management of coastal ecosystems and the need to rebuild fisheries resources and coastal ecosystems to avoid the loss of environmental goods and services essential for sustainable development; the 1971 Ramsar Convention on wetlands that aims for sustainable use of wetlands through Ramsar designated sites; the 1992 Convention on Biological Diversity that aims to promote equitable sharing of access and the benefits derived from a countries natural resources, such as fisheries; and the 1963 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) that aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival. Relevant voluntary commitments include the Declaration of the Johannesburg World Summit on Sustainable Development in 2002 and the Declaration of the Rio de Janeiro United Nations Conference on Sustainable Development, known as Rio+20 – **the future we want** – in 2012.

Maritime and shipping international instruments relevant to fisheries– The following legally binding maritime and shipping instruments to which Liberia is party and are generally integrated into the maritime administration but are also applicable to fisheries are: the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter; the 1973/78 International Convention for the Prevention of Pollution from Ships (MARPOL); the 1977/1993 Torremolinos International Convention for the Safety of Fishing Vessels; and the 2004 International Convention on Control & Management of Ships' Ballast Water.

Regional integration bodies –There are three regional fisheries bodies (RFBs) to which Liberia is party: the Committee for the Eastern Central Atlantic Fisheries (CECAF); the Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic Ocean (COMHAFAT); and the Fishery Committee for the West Central Gulf of Guinea (FCWC). Liberia has initiated the process to become a member of the International Convention on the Conservation of Atlantic Tunas (ICCAT). The latter has a mandate to take conservation and management measures that are legally binding on its members. Various broad commitments have been made in these bodies, many in line with the CCRF. Liberia is a party to three economic integration bodies, the African Union (AU), the Economic Community of West African States (ECOWAS) and the Mano River Union (MRU): all of which have cooperation within fisheries as part of their integration agendas. Liberia is a member of the Interim Guinea Current Commission, a shared water body organization.

1.6.2 The national policy framework

The 2008 Liberian Poverty Reduction Strategy provides the overall policy and strategic framework for the country as it re-builds after the civil conflict, while the Food and Agriculture Policy and Strategy (FAPS) places this within the context of agriculture,

including fisheries. Although the FAPS was completed in mid-2008, the pace of change in Liberia means that it is already in places outdated in regard to data and current focus. However, areas still of relevance to fisheries include: understanding of the link between food and health and sanitary conditions; ensuring mechanisms are in place for reducing vulnerability to climate change; empowerment of women with enhanced access to credit, land, technology and market information; encouraging and ensuring larger numbers of youth are directly involved in the sector; and ensuring sector coordination. The FAPS specifies key strategic approaches, with those of relevance to the sub-sector including: implementing the CCRF; initiatives to increase fish supplies including gear enhancement, access to landing areas and processing facilities; establishing community fisheries centres; the establishment of a fishing port; developing an aquaculture recovery plan; establishment of an information data base for investment; effective monitoring, control and surveillance; establishing a National Fisheries Commission and a National Fisheries management and development fund. These priorities have been captured as appropriate within this policy.

This policy and strategy takes into account the policy and legislative framework of other sectors that have a relationship to the fisheries and aquaculture sub-sector. The following are the main instruments of interest for coherence:

- **Liberia National Policy on Decentralization and Local Governance(2010)** – decentralizing government is a key governance strategy that is relevant for artisanal fisheries, particularly inland fisheries;
- **‘Maritime Act’ (2010)** –establishes the Liberia Maritime Authority (LiMA) as a corporate body and highlights the need for cooperation between agencies and departments;
- **National Defense Act (2008)**– establishes the role of the Liberian Coast Guard including in respect to maritime regions and its relationship with the Bureau of National Fisheries;
- **Environmental Protection Agency Act (2003)** – establishes a monitoring, coordinating and supervisory authority that is to provide an inter-ministerial mechanism for addressing and coordinating responses to Liberia’s environmental problems.
- **Executive Order # 39 of 2012 (2012)** – delimits Liberia maritime zones and embeds the 1982 UNCLOS in domestic law;
- **National Capacity Development Strategy(2010)** – provides a vision for capacity development to be sustainable, inclusive, results-oriented, and aligned with the broader development agenda of the country;
- **National Food Security and Nutritional Strategy (2008)** – makes the provision of access to food in order to live an active and healthy life, a right of Liberian citizens;
- **National Adaptation Program of Action (2008)** – guides government in relation to adapting to climate change induced impacts and notes that fisheries is a key area of concern; and
- **Liberia Agriculture Sector Investment Program (2010)** – aims to empower women and youth and increase the fishery sector contribution to food and nutrition security and GDP through: improving capacity of the BNF; instituting good governance and sustainable management of fisheries; and reducing illegal, unreported, and unregulated fishing.

1.7 The Policy process

The process for preparing a draft Fisheries and Aquaculture Policy for Liberia began in late 2011 with preliminary desk work to compile and review existing national and international legal instruments and documents to inform the policy. This was followed in February 2012 by a Fisheries and Aquaculture Policy Dialogue Consultative Workshop in Monrovia that brought together participants from 19 institutions within the fisheries sector and from other agencies of government to deliberate and identify priority policy areas.

During the three days workshop which lasted from 15th – 17th February 2012, there were presentations on current policy & legal frameworks, including international instruments, and group discussions to identify key policy areas, which were deliberated in plenary.

Following the workshop, further consultations were held with fishing communities and local authorities in selected counties, including Grand Kru, Grand Bassa, Maryland, Grand Cape Mount, Margibi and Montserrado counties, through focus group discussions and town hall meetings. A first draft policy was completed in June, 2012 and circulated for comments. Following a critical review a revised draft was circulated in April 2013. The draft however, was not acceptable to the BNF and other key stakeholders as it did not address various concerns.

In October, 2013 discussions were held by the Bureau of National Fisheries and the Ministry of Agriculture on the need to consummate work on the fisheries and aquaculture policy to enable the Ministry to complete the preparation of a composite Agricultural Policy for consideration by cabinet by the end of 2013. Therefore an action plan was drawn for further consultations with fishers, fish mongers, fishing chiefs and boat owners, and various other stakeholders, including governors, city mayors and other county administration personnel. Consultations on the expectations of the Ministry and the Bureau of National Fisheries formed part of the process. More than 200 persons attended the consultative meetings in Marshall, Robertsport and Buchanan cities.

Concurrently, policy notes were prepared for discussion on the following topics: management of shared fish stocks; fisheries management units; fishing licenses fees, subsidies and other tariffs; fisheries management capacity, environment and institutional arrangements; and the co-management approach. The outcome of discussions of the policy notes and an FAO sponsored Aquaculture Policy document prepared at the time, together with the results of the various consultative processes, facilitated the preparation of a second draft document by a joint team of experts from the Bureau of National Fisheries, the Ministry of Agriculture and the WARF Program in Liberia. The second draft document was validated at a national meeting convened at the Ministry of Agriculture.

2. Policy framework

The policy framework points to the direction of the fisheries and aquaculture policy and does this through an explicit statement of the overarching long term vision, an overall sector goal, the essential actions to achieve the vision (mission), the principles that will guide the actions, and the objectives and strategies for sustainable development and management of the fisheries, on a sustainable basis.

2.1 Vision

To harmonize the varied and numerous long term expectations of the primary, secondary and tertiary stakeholders, looking into the future, up to 2030, and recognizing the strengths, weakness, opportunities and threats of the fisheries sector, a clear and unambiguous vision statement is crystallized as follows:

A modern, vibrant and sustainably managed fisheries sector, capable of:

- providing increased profitable fisheries employment opportunities while offering an enabling environment for upgrading technical skills for enhanced value added fisheries vocations;
- engaging participatory fisheries management institutions based on community and stakeholder structures for the creation of opportunities for socio-economic development;
- contributing to Gross Domestic Product, national food and nutritional security and improving living conditions, by upgrading and adopting appropriate, modern and efficient fisheries capabilities for increased fish production while reducing losses through illegal fishing; and
- deriving net benefits from a vibrant fish trade supported by, value addition systems and fisheries infrastructure for fish landing and export, as well as efficient fishing input supply and distribution systems.

2.2 Overall Goal

The overall fisheries sector goal is: **Sustainably managed and economically viable fisheries that generate prosperity for the present and generations yet unborn.**

2.3 Mission

In order to facilitate the attainment of the overarching vision by the year 2030, Government, as essential operational actions, will promote: **an improved institutional and legislative framework for fisheries management; adaptive research; community and stakeholder participation in capture and culture-based fisheries management and development; effective international, regional, sub-regional and bilateral cooperation for fisheries management; enhanced monitoring, control and surveillance capabilities; and improved fish quality and value addition technologies for enhanced economic returns in fisheries.**

2.6 Principles

- **Equity and Gender:** In carrying out the mission, cognizance will be given to the active participation of women, youth and the elderly in decision making and sharing of responsibilities and benefits. Government's actions will be guided by the principle of equity in all aspects of the sector. Inter and intra-generational equity, through resource management and environmental protection, gender equity in participatory management processes, and the user pays principle, where users of common property natural resources pay for access to contribute to cost of management, are best practices for guidance of policy actions.
- **Sustainability:** The long-term sustainable use of fishery resources is a prerequisite for gaining maximum benefits for Liberia for both present and future generations. Sustainability implies maintaining essential ecosystem functions and preserving a healthy habitat. This is consistent with the ecosystem approach to fisheries and the code of conduct for responsible fisheries, both of which provide for a holistic approach to the responsible use of fishery resources. In the case of uncertainty the precautionary principle is applied and actions taken to reduce the risk of serious harm to fish stocks, habitat and the environment in general.
- **Transparency:** Transparency is an essential principle for underpinning good governance of the fisheries sector. It helps to guarantee fairness in the distribution of benefits and helps prevent corrupt practices, a requirement of the Constitution. Transparency implies accountability and openness in access to information, in the elaboration of plans, and in decision making.
- **Optimality:** The best long-term use of available fisheries resources for the benefit of Liberians should be made in balance with the broader set of ecosystem services. Gaining the most out of this valuable renewable resource for Liberia implies a level of conservation that ensures that the biomass be conserved at a level approximating optimum productivity, that the species composition is maintained, and that, in the long-term, value addition takes place in Liberia rather than abroad. Benefits shall accrue to Liberians in the form of an appropriate balance between better nutrition, improved livelihoods, and revenue and foreign exchange.
- **Inclusiveness:** Participation across the range of management functions shall include, as far as is practically possible, the involvement of key stakeholders in the fisheries and aquaculture sectors. This includes sharing of power, rights and responsibility with fishers and other stakeholders who can enrich the management process with more direct knowledge of, and involvement with, the fisheries and the resources they utilize.
- **Decentralization:** The government's policy of decentralization is relevant to policy implementation as responsibility for management of fisheries resources is devolved to the country authorities concomitant with national resources allocation mechanisms to ensure benefits reach the counties for maximization of fisheries management participation at the local level.

- **Securing Small Scale Fisheries (SSF) access:** The FAO SSF Guidelines provide the basis for consultation for securing access to resources by small-scale fisheries communities and giving them resources stewardship responsibilities, reflecting this need for combining livelihood security and environmental sustainability. Optimization of the contribution of fisheries resources to the welfare of Liberians, particularly the vulnerable, will be achieved through preferential access to small-scale fishers in their traditional fishing grounds and ensuring that the industrial sector does not threaten fish stocks targeted by the small-scale sector. Preferential access will ensure continuous contribution of small-scale fisheries to poverty alleviation, social coherence, employment opportunities, in particular for women, income generation and food security.

2.7 Policy Objectives

2.5.1 Sustainable management of fisheries resources and ecosystems

Sustainably managed fisheries resources and associated ecosystems, with fishers and other stake holders' participation, harnessing the huge fisheries potential of the country, to promote, social, economic and environmental benefits.

2.5.2 Development of aquaculture to meet national fish demand deficits and for foreign exchange

Aquaculture sector developed in an orderly manner through good sector governance, established by supporting legal and institutional framework, an enabling aquaculture business environment, and highly trained, knowledgeable and skilled workers and farmers, meeting national fish demand deficits and for export to foreign remunerative markets for foreign exchange.

2.5.3 Policy Objective 3: Strengthening of fisheries management and development capacities for sustenance of a vibrant fisheries sector

Fisheries management and development capacities strengthened for sustenance of a viable and vibrant fisheries sector through, up-scaling of the capacity of BNF, adaptive research, capacity building for fisheries operators and investment promotion, supported by a robust funding mechanism.

2.5.4 Enhancement of value addition, marketing and fish trade for improved foreign exchange earnings and employment opportunities

Enhanced value addition in fisheries encouraging and increasing fish exports for improved foreign exchange earnings as well as increased employment opportunities in fish processing and related industries through creating an enabling environment for post harvest and trade opportunities, with appropriate quality control processes to support export to value added international markets.

3.0 The national fisheries and aquaculture strategy

3.1 Policy Objective 1: Sustainable management of fisheries resources and associated ecosystems

Sustainably managed fisheries resources and associated ecosystems, with fishers and other stake holders' participation, harnessing the huge fisheries potential of the country, to promote, social, economic and environmental benefits to the citizenry.

3.1.1 Goal: Fish production carried out on as sustainable basis meeting national socio-economic needs.

3.1.2 Policy Context: All the key indicative fish species of the fisheries management units of the country (inshore pelagic fishery, inshore demersal fishery, shrimp fishery, offshore demersal fishery, and offshore pelagic fishery) are either fully exploited or over-exploited. The biomass levels are unable to sustain fish harvests at maximum sustainable yield levels due to illegal fishing and unauthorized transships in the industrial sector while the artisanal fisheries suffers mainly from open access due to absence of co-management arrangements and systems for governance. Liberia still has to formalize arrangements, in accordance with the UN Conventions (1982: 1995), to seek, international, regional and sub-regional cooperation for management of the abundant shared fish stocks in its EEZ and adjacent high seas, and bilateral cooperation for transboundary stocks to enhance socio-economic development. Even though MCS mechanisms have been initiated more still has to be done to reduce IUU fishing to which Liberia loses over US\$12.0 million annually.

3.2 Strategies

3.2.1 Restoring fish biomass capacities to produce at maximum sustainable yield levels

To ensure sustainability of fish production from the fisheries management units of Liberia to enable fisheries resources contribute meaningfully to local economies, measures will be taken to restore the key indicative fish species to biomass capacities that can produce at maximum sustainable yield levels.

Interventions

- Elaborate and adopt a National Plan of Action for the management of fishing capacity, in line with the FAO International Plan of Action.
- Establish priorities for routine in-depth monitoring and assessments of the fisheries management units of Liberia and prepare, implement and routinely update fisheries management plans to include measures to restore production to maximum sustainable yield levels.
- Strengthen the licensing and vessel registration regime to conform to the fisheries management units and ensure that fishing capacity that is in excess of sustainable, economically viable and optimal levels in the management areas is avoided, so as to

encourage favorable economic conditions to promote responsible fisheries and maximize benefits.

- Prioritize and protect access by the legitimate small scale fishers to the fishery resources that are shared with the industrial fleet by ensuring that allocation of allowable catches or fishing effort to the industrial sector takes into account the needs of the small scale fishers.
- Establish a national committee for fishing licensing, and in consultation with the organized stakeholder associations for the fisheries management units, to determine access and use restrictions as well as multi-year licensing schemes that ensure inclusion and security of local stakeholders as a priority.

3.2.2 Conserving of aquatic ecosystems associated with fish production

Fish production cannot be sustained without conserving the associated ecological processes therefore the aquatic environment will be protected including the habitats and bio-diversity.

Interventions

- Incorporate the principles of the ecosystem approach and its human dimensions to fisheries management systems.
- Monitor aquatic biodiversity and key habitats through periodic assessments so as to identify critical changes and their origin.
- Reduce by-catch, discards, and destructive fishing practices through the introduction of incentives and gear replacement schemes and to encourage the use of selective, environmentally safe and cost effective fishing gears and techniques.
- Promote and declare marine protected areas for purpose of sustainability and genetic conservation in line with coastal zone management.
- Strengthen the regulatory framework and conduct sensitization programs with the aim of protecting and enhancing the productivity of the mangroves and wetlands.
- Seek and strengthen inter-agency collaboration in order to adopt and implement regulations aimed at aquatic environmental protection and reduction of negative impact of other policies on fisheries.

3.2.3 Encouraging community and stakeholder participation in fisheries management

The top down central management approach to fisheries management has perpetuated open access to the artisanal fisheries with disastrous effects leading to too many fishers chasing too few fish therefore government will embark on a participatory fisheries management approach (co-management) for effective management of the artisanal fisheries, using fisheries management institutions based on community and stakeholder structures.

Interventions

- Use co-management institutions for allocation and management of fishing rights, including adaptable participatory monitoring and enforcement mechanisms for management of the inshore fisheries.
- Provide the legal framework to support, the existence and operations of the locally based participatory management institutions, the declaration of co-management areas

(TURFs), co-management agreements, and allocation and utilization of proceeds of fishing rights;

- Undertake routine boat registration/embossment and fishermen registration campaigns to determine total effort in the co-managed fishery area.
- Provide and implement capacity building programs to upscale skills and expertise of the co-management associations (CMA) for management;
- Support the establishment of the necessary infrastructure for effective operations including structures for administration, fish landing site clusters, fisheries community centers, processing and value addition, service centers and marketing centers.
- Establish oversight, coordination and harmonization co-management governance structures to promote co-management arrangements to include, a national network of Co-Management Associations, a National Co-Management Advisory Body, and a new Co-Management Office at the BNF.

3.2.4 Promoting International cooperation for management of shared stocks

To position the country to benefit from the exploitation of the large offshore (including the tuna and tuna-like species) and the inshore pelagic fish species in its EEZ and the adjacent high seas as well as the transboundary stocks, government will promote international cooperation in the management of such shared fish stocks by adopting and implementing provisions and obligations of international, regional, sub-regional conventions and bi-lateral agreements on shared stocks for optimization of the contribution of marine fish resources to socio-economic development, on a sustainable basis.

Interventions

- Being in the ICCAT Convention Area, actively seek membership of ICCAT and domesticate the provisions/obligations of the organization as well as those of the 1982 Convention on the Law of the Sea and the 1995 Fish Stocks Agreement, to safeguard the nation's rights to economic benefits derived from exploitation of the tuna and tuna-like species in its EEZ and the adjacent high seas of the Atlantic Ocean.
- Promote the negotiation of long-term fishing rights with distant water fishing states (DWFSs) and/or foreign flagged fishing companies through well structured and beneficial access agreements for the industrial fisheries.
- Establish a national working committee for improved management of shared pelagic and demersal fish resources to enable information/data on such resources be routinely and timely submitted to the FAO/CECAF working groups and conversely to receive and implement scientific advice to maximize the contribution of small pelagic fish stocks to socio-economic development of the country.
- Continue to collaborate with the FCWC and ATLAFCO to ensure, through appropriate management, the conservation and optimum utilization of the living marine resources covered by the Conventions and encourage sustainable development of fisheries based on such resources while still actively cooperating with the SRFC especially in the area of reduction of illegal fishing in the sub-region.

- Cooperate with Sierra Leone for sustainable management of the common fisheries resources of Sherbro through a joint management authority as well as a joint scientific body working through a work plan with indicators and reference points for monitoring of the performance of the fishery. It may be necessary to review and/or synchronize the fisheries regulations of both countries to achieve the management objectives.

3.2.5 Implementing effective Monitoring, Control and Surveillance (MCS) mechanisms to prevent IUU fishing

To implement effective mechanisms that encourage, enforce and monitor compliance government will adopt innovative and appropriate technology and tools; appropriate enforcement hardware; information sharing and cooperation at local, national, regional and international levels; and risk assessment, to prevent IUU fishing in a cost-effective and practical manner.

Interventions

- Develop and implement a national action plan, in accordance with the FAO International plan of action to prevent, deter and eliminate IUU fishing.
- Support and strengthen the inter-agency institution, the MCS Coordinating Committee, to be effective in its work in reducing illegal fishing in the Liberian fisheries waters.
- Implement a cost effective MCS system involving a reasonable mix of land, sea and air based capabilities that provides the greatest chance of ensuring compliance of operators. These capabilities include: at-sea observer program, vessel monitoring system, port inspections, vessel registers and logbooks, sea and air patrols.
- Encourage community participation in MCS by strengthening and supporting the pilot community surveillance program of the Robertsport Co-Management Association to consummation for lessons learnt to enable replication across the coastline.
- Establish a follow through mechanism and institute deterrent fines and penalties to curb or discourage indulgence in illegal fishing activities.
- Establish clear penalty scheme for varying levels of illegal fishing activities
- Conform to ICCAT recommendations by denying or cancellation of permits to fish to any vessel that is on the ICCAT IUU fishing vessels or any contracting party's list of IUU vessels.
- Accede to the Agreement on Ports States Measures (APSM) and operationalize a Port State Measures Scheme that is cost effective to combat IUU fishing by local and foreign vessels.
- Support mechanisms for bi-lateral, sub-regional and regional cooperation to combat IUU fishing by working with neighboring countries, the FCWC, SRFC and Manu River Union such as joint operations, sharing of assets and information and cooperation on training and expertise.
- Adopt a system that monitors catches and facilitates regional and international efforts to ensure that fish imports particularly transshipped fish are legal.

3.2.6 Developing and promoting conflict management mechanisms and structures for sustainable management of the fisheries resources

Conflicts occur in both artisanal and industrial fisheries over access, harvest regulations, competition with other users for resource use, unsustainable use and unfair distribution of benefits within and between fleet. Government will adapt conflict management mechanisms and encourage artisanal and industrial license holders to submit to these mechanisms to facilitate harmonious and sustainable utilization of fisheries resources for socio-economic development.

Interventions

- Encourage and support best possible participatory processes for planning and implementing management or policy interventions to minimize conflicts;
- Establish effective mechanisms within the larger planning and management process, for addressing latent, emerging and manifest conflicts as they are realized;
- Establish and build the capacity of a national conflict management committee for management of all fisheries conflicts except within the jurisdiction of the CMAs in the artisanal fisheries;
- Establish and build the capacity of CMA conflict management sub-committees on alternative conflict management mechanisms to address conflicts in the artisanal fisheries;
- Establish a mechanism for the transfer of cases which are beyond the capacity of the CMAs for consideration by the national fisheries conflict management body;
- Adopt and apply the best alternative to a negotiated agreement (BATNA) as a guide for stakeholders to understand conflict and analyze how best to address their interest.

3.3 Policy Objective 2: Development of aquaculture to meet local fish demand deficits and for foreign exchange

Aquaculture sector developed in an orderly manner through good sector governance, established by supporting legal and institutional framework, an enabling aquaculture business environment, and highly trained, knowledgeable and skilled workers and farmers, meeting national fish demand deficits and for export to foreign remunerative markets for foreign exchange

3.3.1 Goal: Aquaculture practiced as a business and supplying fish to meet the annual shortage in fish supply from capture fisheries.

3.3.2 Policy context: The aquaculture sub-sector, which includes mariculture, is poorly developed and weakly organized resulting in limited benefits in food or livelihood. The common constraints of lack of seed and feed and inadequate extension and outreach have

hampered any real progress in the sector over recent years, although some isolated and externally supported activities have shown some degree of promise. If this promise is capitalized and best practice is applied to develop; safe; responsible; hygienic; and economically farmed fish and crustaceans, aquaculture could contribute to local food requirements, stimulate national and local economies and generate employment through the export of suitable species. The vast enabling potential of the nation, blessed with perennial water bodies, lakes, rivers, estuaries and creeks and the fact that Liberia is the third highest rainfall country in the world makes water availability for development of culture-based fisheries an asset. Also the huge discharge of fresh water into the inshore areas of the sea minimizes the salinity content and provides a huge potential to promote inshore mariculture especially for high valued shrimps and oysters adding immense socio-economic benefits to the nation.

3.4 Strategies

3.4.1 Establishing the legal framework for development of responsible aquaculture

A cross-country survey of aquaculture legislations shows that aquaculture laws provide for regulation of access to aquaculture resources, fish health, registration and or licensing of aquaculture activities; wild collection and importation of seeds and regulation of their translocation or movement of live fishes within the country. They include provisions for collection of information and statistics as well as environmental management regulations.

The Government of Liberia will collaborate with the private sector to review the various aquaculture legislations with a view of providing a harmonious legal framework for development of responsible aquaculture.

Interventions

- Review existing fisheries legislation and provide for definition of aquaculture to enable implementation of the provisions of the fisheries and aquaculture policy;
- Review other sector related legislations to provide for regulation of aquaculture activities;
- Harmonize related legislations to provide for orderly development of aquaculture;
- Create the environment for participation of private sector in the formulation of the enabling legislation.

3.4.2 Strengthening the institutional framework for development of aquaculture

Aquaculture has remained undeveloped for such a long time, partially due to lack of an organized and sustained institutional support. A strengthened institutional framework is the entry point to development of aquaculture. In this regards both strong public and private institutions are necessary to be promoted. Government will therefore establish a 'special purpose vehicle' to coordinate the implementation of this policy and strategy through public and private stakeholders association for full collaborative partnership.

Interventions

- Upgrade the capacity of BNF to be able to deliver technical support and aquaculture services to farmers at county and district levels;
- Establish an effective coordination among public institutions involved in aquaculture administration;
- Promote cooperation among line Ministries with a bearing on aquaculture to optimize the benefits of aquaculture;
- Promote public investment in aquaculture for launching the expansion of the aquaculture sub-sector;
- Encourage the establishment of effective farmer representative organizations to facilitate the process of public involvement in the development of the sub-sector.
- Support the development of partnerships between farmer organizations, donors and NGOs to enhance development of aquaculture.

3.4.3 Setting up an enabling environment for development of Aqua- business for growth of the sub-sector

Promotion of aquaculture desires an enabling environment to stimulate growth. The enabling environment for aquaculture business requires a good mix of sets of policies, institutions, support services, and other factors. Government will create such an environment where aquaculture enterprises will thrive on commercial basis.

Interventions

- Provide financial services and incentives for promotion of smallholder aquaculture as a business;
- Identify areas of high potential aquaculture zones where land based aquaculture can be a permitted land use and ecologically sustainable;
- Ensure the availability and access to inputs, including fish seed and feed as well as credit.
- Improve access to markets for fish products by maintaining standards, market data and improvement of road transport networks.
- Establish aquaculture research and technology development capability for the growth of the aquaculture sector;
- Support cost effective aquaculture extension services to fish farmers in collaboration with the private sector and farmers/industry organization;
- Build capacity of the private and public sector institutions to produce and disseminate good quality information on aquaculture for facilitation of sound decision making;
- Institutionalize a collaborative service between BNF and the Veterinary Service to launch a National Aquatic Health Capacity Development Program to cope with outbreaks of serious infectious diseases among aquatic animals to protect such animals and facilitate trade in aquatic animals along the their products and by-products, both nationally and internationally;

- Promote the safety and quality of the farmed fish products by ensuring the application of safety and control mechanisms such as the statutory hazard analysis critical control point (HACCP) methodology;
- Seek to target women and the youth in active involvement in aquaculture activities for promotion of the sub-sector

3.4.4 Improving capacity for aquaculture promotion through human resource development and training

The existing situational context for aquaculture in Liberia is one with a critical human resource shortage within and outside BNF. Current capacities are below the needs of emergent commercial aquaculture operations. Government will therefore improve capacity through human resource development and through training.

Interventions

- Undertake a needs assessment for field, managerial and scientific personnel to prepare and implement a human resource development plan;
- Develop a curriculum to incorporate aquaculture training and education at all levels;
- Offer practical and tailored training opportunities in collaboration with non-state actors for individual and group fish farmers;

3.5 Policy Objective 3: Strengthening of fisheries management and development capacities for sustenance of a vibrant fisheries sector

Fisheries management and development capacities strengthened for sustenance of a viable and vibrant fisheries sector through, up-scaling of the capacity of BNF, adaptive research, capacity building for fisheries operators and investment promotion, supported by a robust funding mechanism.

3.5.1 Goal: A functional, modern and well capacitated fisheries management institution providing the much needed support services to a profitable and self sustaining fisheries sector.

3.5.2 Policy Context: The mandate and the existing legislative framework for management of the fisheries resources of the nation are outmoded and need urgent revision. There is need to upscale the status of BNF, to a more pro-active statutory agency/body still operating under the Ministry of Agriculture. The up-scaled status will enable it to provide the enabling mechanisms for planning and policy making, promotion of investments in the sector, provision of a sustainable source of funding¹ and be able to institute adaptive research programs to support improvement of all facets of the fishing industry. A legislative framework for existing and emerging national responsibilities (e.g. MCS, co-management arrangements, fisheries management and development fund) needs to be passed while regional and international provisions need domestication to enable BNF provide the much needed services for a modern and self sustaining fishery, capable of delivering profitable benefits for socio-economic development.

3.6 Strategies

3.6.1 *Revising the legislative framework to support fisheries management and development*

The existing legislative framework (the Natural Resources Act, 1956) is weak and outmoded and therefore the need to revise or provide a new legislative framework to support existing and emerging national fisheries management and development responsibilities as well as provide the opportunity to domesticate sub-regional, regional and international obligations/provisions that Liberia is signatory to.

Interventions

- Establish an enabling legislative framework:
 - to upscale the status of the Bureau of National Fisheries to a statutory agency/authority operating within the Ministry of Agriculture to respond to emerging fisheries responsibilities;
 - to legitimize the establishment of a fisheries management and development fund for sustainability of the fisheries sector;
 - to support MCS functions and responsibilities of fisheries inspectors, observers, and other authorized officers as well as for compliance with provisions of the vessel monitoring system, air and sea patrols, including safety at sea and search and rescue operations; and
 - to support co-management arrangements to include, declaration of TURFs, co-management agreements, allocation of fishing rights, community surveillance, utilization of proceeds of fishing rights allocated and composition of the co-management structures..
 - Set fisheries management in the context of international, regional and sub-regional obligations and treaties that Liberia is signatory to which requires domestication of the provisions into national regulatory frameworks to meet international standards.

3.6.2 *Up-scaling the capacity of the Bureau of National Fisheries (BNF)*

In order to carry out existing and emerging national fisheries responsibilities effectively and in a timely manner, government will re-structure the Bureau of National Fisheries to promote a more commercially-oriented operation with an advisory body and a well-defined decision-making process that still operates under Ministerial guidance to provide the much needed services to sustain the fisheries sector.

Interventions

- Upgrade the capacity of the Bureau to undertake adaptive research in socio-economics, fisheries resources, ecosystem and environment, aquaculture and post harvest and quality control, for improvement of the fishing industry.
- Upgrade and support the Bureau to fulfill its MCS obligations by establishing a National Fisheries Monitoring Center, with a modern vessel monitoring system

operating 24/7, linked to coastal stations strategically located along the coast, an operational fisheries observer program graduating into a regional observer status, an expanded and well trained fisheries inspectorate working in all the ports of the country.

- Establish a Policy and Planning Service (with all the required Units) and build capacity to effectively collect and analyze fisheries data for timely dissemination, conduct effective monitoring and evaluation of the performance of the fishing industry, develop fisheries policies for approval by government and to make it up to the task of leading fisheries investment promotion drive.
- Establish a Technical Division (Service) to be linked to research for adoption and dissemination of research findings through demonstrations and extension.
- Assess the existing manpower needs, prepare and implement a capacity building program to build capacity of staff and recruit qualified staff to fill in vacancies established to meet the emerging responsibilities discerned.
- Upgrade the capacity to support co-management arrangements by establishing a Co-Management Service to promote activities and build capacities of the co-management associations to manage the fisheries in designated areas to provide socio-economic benefits to members.

3.6.3 Implementing a comprehensive adaptive research program for improvement of the industry

The fisheries sector is be-deviled with multi-faceted challenges and requires continuous nurturing and monitoring for sustained improvement. Government will develop and implement a comprehensive adaptive research program on various aspects of the fisheries to include, biological, ecological, social, economic, nutritional and technological research to adequately respond to the needs of the fisheries sector to enable it contribute to growth.

Interventions

- Develop and implement a fisheries and aquaculture research plan, that supports and strengthens national research capabilities to meet acknowledged natural, social and economic scientific standards, where appropriate through cooperation with agencies and organizations, as well as local and international universities.
- Strengthen fisheries research, to support the determination of the status of the main marine and freshwater stocks and fisheries including timely and reliable statistics on catch, landings and fishing effort in order to determine the biologically sustainable yields.
- Conduct research on traditional fisheries management strategies and develop ways to incorporate lesson learning and best practice into current systems of co-management.
- Conduct research to assess the effects of climate or environment change on fishery and aquaculture systems including fish stocks, aquatic ecosystems and the people that depend on them.
- Ensure that the economic, social, marketing and institutional aspects of fisheries are adequately researched and that comparable data are generated for ongoing monitoring, analysis and policy formulation.

- Undertake research and technological development for improved aquaculture, particularly in identifying economically and environmentally suitable species for farming and sources of feed and seed.

3.6.4 Implementing comprehensive capacity building and advisory programs for the fisheries sector

Government will prepare and implement comprehensive capacity building and advisory programs so as to build human resource capacity to increase levels of skills and expertise for the fisheries.

Interventions

- Prepare and implement a plan to address the human capacity needs, to include, on the job training, non formal education, education and development programs, aimed at government and non-government stakeholders in the industry.
- Actively seek resource personnel and facilitate participation of non state actors in the provision of training, financially support training programs identified in the plan, and provide incentives to encourage the participation of the targeted stakeholders to strengthen skills and build capacity for better opportunities in fisheries.
- Encourage fisheries agreements that provide capacity building opportunities locally, regionally or internationally to enhance the participation and competitiveness of beneficiaries in fishing and culture-based operations or management.
- Introduce a condition of preferential employment for Liberians in fishing access agreements when the environment is feasible, for employment generation and enhanced capacity building.
- Build capacity for new fisheries enterprises as well as alternative income generation activities by enabling participation and support beneficiaries to adopt and practice such new fisheries vocations by facilitating access to credit and markets.
- Support and implement a fisheries curriculum or syllabus at all stages of formal education up the university level to enhance fisheries capacity building on a sustainable basis.

3.6.5 Promoting sustainable fisheries investments

Government will promote and encourage private sector investments that are environmentally, socially and economically sustainable in the fisheries sector to enhance the contribution of fisheries to the economy.

Interventions

- Undertake studies to identify constraints of the fisheries sector that may limit investments and spear head the implementation of institutional reforms needed to simplify and streamline processes to facilitate fisheries investments.
- Ensure that information is accessible to the public in a transparent manner that permits monitoring and evaluation of the effectiveness of the management regimes

and supports participation and investment in the sector while promoting responsible users and user participation in management processes.

- Negotiate terms and conditions for fisheries concessions or contracts for management of infrastructures including Built, Own, Operate and Transfer (BOOT) investments.
- Promote the development of credit and micro-credit schemes to encourage investment in fisheries.
- Study and implement a fuel subsidy mechanism to be linked with responsible fishing for the artisanal fisheries to promote investment in the sub-sector.
- Conduct robust feasibility, development and financial studies (including aquaculture) for potential large investments into the sector and to utilise these studies to attract suitable potential investors and joint venture partners into the planning and development process of the fishery sector.
- Create in cooperation with the Ministry of Commerce and Industry, and the National Investment Commission a business environment that encourages investment in fish value addition and support industries and attracts foreign direct investment through ensuring a fair partnership with foreign players and investors.
- Prepare and offer investors in fisheries, incentives for identified ventures that are socially and environmentally sustainable for example to reduce license fees for firms and investors that process all catch locally or employ a business model based on fishing methods with lower environmental impacts.

3.6.6 Setting up sustainable funding mechanisms for fisheries development and management

To financially support the new and expanded responsibilities of the fisheries sector government will work out and operationalize sustainable funding mechanisms for efficient and effective management of the fisheries resources.

Interventions

- Revise the existing mechanism for generating fishing license revenues by adopting a system that is transparent, calculable and devoid of sustained monitoring techniques, in order to maximize rent from the fisheries. Adoption of the flat fee and a multiplier based on vessel characteristics will eliminate the uncertainties due to faulty estimation and monitoring of total catches, non or underreporting, discards, upgrading and illegal transshipments.
- Revise the procedure of 50% down payment to full payment of license fees before commencement of fishing to streamline and foster revenue flows and projections.
- Implement a license scheme for transshipment vessels (fish carriers) to expand the revenue source for fisheries development.
- Devise and implement an enabling flexible fish import tariff system which protects the local fishing industry for job creation and sustainable revenue flow by allowing fish imports only at short periods of fish shortage and targeting fish for only local consumption.
- Introduce tax reliefs to importers of fishing inputs to stimulate the environment for genuine importers to take up supply and distribution of these inputs as a business.

- Establish and operationalize a fisheries management and development fund from, but not limited to, the following revenue sources for development and management of the fisheries sector:
 - fees for licenses, permits and other authorizations granted for fishing;
 - damages awarded for actions taken under Fisheries Regulations, laws or international agreements.
 - civil and criminal fines and administrative penalties;
 - proceeds from sale of forfeited items collected under the Regulations or Law;
 - loans, grants or aids, royalties from oil exploration;
 - payment for fisheries access agreements,
 - the sale of real or personal property owned by the governing authority;
 - fees from use of the Mesurado fish import and export terminal and local fishing off-loading jetty; and
 - fees accrued from fish certification by the competent laboratory.

3.7 Policy Objective 4: *Enhancement of Value addition, marketing and fish trade for improved foreign exchange earnings and employment opportunities*

Enhanced value addition in fisheries, encouraging and increasing fish exports for improved foreign exchange earnings as well as increased employment opportunities in fish processing and related industries through creating an enabling environment for post harvest and trade opportunities, with appropriate quality control processes to support export to value added international markets

3.7.1 Goal: Maximization of economic returns from fisheries through value added technologies targeting remunerative foreign markets for maximization of benefits from fisheries.

3.7.2 Policy Context: The value chain in fisheries involves harvesting and primary processing generally undertaken as quickly as possible after catching and secondary processing after which wholesalers bring the processed products to retailers where the consumer purchases the fish. The processing and wholesale are typically the largest value contributors in the fisheries value chain, often contributing between 20 and 60 percent of the retail value of the product. Fishing operations, on the other hand, tend to be the lowest contributor, proving between 10 and 25 percent of the final retail value. Consequently, Liberia is committed to develop a fish processing industry that provides increased employment and better salaries for Liberians. In addition various support industries are required, such as production of packaging, transport and factory maintenance so the potential for job creation is far wider than just the fishing itself. Processing and associated industries will also contribute to government revenue through taxation and this can bring in valuable foreign currency.

3.8 Strategies

3.8.1 Improving economic returns through establishment of post harvest infrastructure

For net benefits of post harvest fisheries to be enhanced, government has to improve post harvest infrastructure.

Interventions

- Establish fish landing site clusters at all major fish landing sites to increase the economic value of fish products through improved hygiene and sanitary condition and marketing facilities.
- Establish the import and export terminal in Mesurado to promote fish export and also from the fish landing site clusters established to enhance the earnings from artisanal and industrial fisheries.
- Support the artisanal fisheries to increase the value of fish by provision of facilities for ice storage on board artisanal craft.

3.8.2 Establishing national safety and quality assurance systems to enhance safety and quality of fish

To ensure the quality and safety of fish and fish products are suitable to local and international consumers, government will establish effective national safety and quality assurance systems to protect consumer health and prevent commercial fraud.

Interventions

- Adopt, sensitize and implement a capacity building program on quality and safety assurance systems based on Hazard Analysis and Critical Control Points (HACCP) and Total Quality Management (TQM).
- Build the capacity of the BNF for adoption of the Codex Alimentarius for inspections and quality control of fish and fish products.
- Strengthen the capacity of the BNF to sensitize and enforce the Fish Products Regulations passed.
- Introduce quality, standards, metrology and testing (QSTM) infrastructure to ensure maintenance of set standards of quality.

3.8.3 Promoting value addition, fish marketing and trade opportunities

Government will develop an enabling environment for improved post harvest value addition and trade opportunities initiated by an assessment of needs and opportunities leading to an agreed development plan for post harvest and trade improvements in fisheries.

Interventions

- Encourage packaging and develop fish products that add value to fish and fish products to improve the marketed value.

- Promote eco-labeling of targeted export oriented fish to enhance the commercial value at international markets.
- Establish a national competent laboratory at Mesurado for certification of fish to enhance fish export to major international fish markets to increase the economic value.
- Encourage the establishment of value addition enterprises at Mesurado and build capacity to meet international standards to gain entry into foreign remunerative fish markets.
- Create the enabling environment that provides timely information to private sector on fish prices at national and international fish markets, through internet, radio bulletins, and market review reports for timely informed decision making.
- Establish curricula to provide training in business and marketing skills at the tertiary level to enhance capacity for fish trade at national and international levels.

4.0 Implementation framework

4.1 Institutional arrangements

4.1.1 Government

Government's role in the implementation arrangement is critical in as much as the review and approval of the fisheries and aquaculture policy for onward consideration by Parliament is concerned. The overall oversight responsibility for implementation rests on the President of the Republic whose mandate is to brief and consult cabinet on regular basis on progress for the necessary national intervention. To be able to do this effectively, implementation plans, annual progress reports as well as monitoring and evaluation reports should routinely reach the Office of the President through the Ministry of Agriculture.

4.1.2 Ministry of Agriculture

The Bureau of National Fisheries is technically directly under the Office of the Minister of Agriculture but operationally, the Deputy Minister of Technical Services exercises oversight responsibility over it. Being a technical wing of the Ministry, the Agricultural Coordination Committee (ACC) will provide technical assistance in coordinating, implementation, monitoring and evaluation of policy implementation. Generally, MOA will have oversight responsibility for: facilitation of passing of relevant fisheries legislation (the New Fisheries Act and Regulations); maintain an enabling institutional framework including establishment of a Fisheries Authority and regularization of the fisheries management and development fund to promote development of the fisheries sector; facilitation of the development, dissemination and promotion of research, technology and information; and provide phyto-sanitary and zoo-sanitary inspection services for fish export and imports.

4.1.3 Central Fisheries Management Institution (BNF)

The enhanced responsibilities of the Bureau of National Fisheries, highlighted by the activities of the West Africa Regional Fisheries Program in Liberia show the inevitable need

for re-structuring the Bureau to make it ready and effective for implementation of the policy. In this regard, clearly the need arises to have seven major divisions which are herewith referred to as Services:

i. **Research Services:** This should focus on adaptive research for the improvement/upgrading of the industry. Five Units are proposed under the Research Services: (a) Fisheries Resources Unit (b) Socio-economics Unit (c) Ecosystem and Environment Unit (d) Aquaculture, and (e) Post Harvest and Quality Control Unit.

ii. **MCS Services:** During the 3 years of implementing the WARF Program in Liberia it has emerged as a major task of the Bureau which when managed could bring into coffers immense financial benefits for socio-economic development of the country. It requires maintaining a fisheries monitoring center with the state of the art vessel monitoring system, managing an observer program with a view of upgrading to a regional observer status, expanding and up-scaling the fisheries inspectorates at the port and at sea. Four units are relevant: (a) Industrial MCS Unit (b) Small-Scale MCS (c) Port Control (fisheries inspections) and (d) At Sea Observers.

iii. **Policy and Planning Services.** Responsible fisheries development cannot succeed without these services. Ability to collect and analyze fisheries data for timely dissemination is key to the development of the sector. This requires in-built mechanisms for monitoring and evaluation of performances and means to effect recommendations for change also on a timely basis. The Bureau requires the capacity to develop general policies for approval by Government. Policy capacity to lead consultations, analyses and monitoring of overall sector performance against an approved plan is extremely essential. Four units are of relevance under these services: (a) Information and Statistics (b) Liaison, Cooperation and Investment Promotion (c) Monitoring and Evaluation, and (d) Sector Planning;

iv. **Administration:** This is the coordinating wing to provide support to the various services and their units. Three units are proposed: (a) Finance and Procurement (b) human resources, and (c) Legal services. As a result of implementing the program for reduction of illegal fishing in Liberia it has become very dire to encompass a legal unit to support the Ministry of Justice in the gathering of evidence and prosecutions. It requires a dedicated legal wing to facilitate judicious adjudication of cases.

v. **Technical Services:** This service is the operational wing of the Bureau which should intimately link with the research services for adoption and dissemination of research findings. It is the primary service to ensure effective fisheries management in all the counties. It needs therefore to be provided with enough and suitable personnel to implement its varied operational responsibilities. It requires that the presence of the Bureau in all counties, in which case, outstations are necessary. Three units are discerned: (a) Demonstrations (b) Extension, and (c) the Outstations. Within these units **subject matter specialist** for marine, inland fisheries and aquaculture will operate.

vi. **Aquaculture:** Importance should be given to aquaculture due to the huge potential in this area, including existence of perennial rivers, lakes, creeks and estuaries. Another

consideration is that the country is recorded as the third highest rainfall country in the world and further provides the opportunity for rain water storage for aquaculture purposes. The effect of the discharge from the rivers on the inshore area is to dilute the saline concentration and creates another potential for mariculture, especially for shrimp culture. The Aquaculture Services will work with stakeholders in the area for development and management of culture based fisheries to contribute substantially to fish production in the country. The units are: (a) Fish Feed Development (b) Nursery Management (c) Laboratory Services (d) Demonstrations (e) Aquaculture Extension (f) Administration.

vii. **Fisheries Co-Management Office (FCMO)**. Due to the importance given to fishermen's participation in the artisanal sector, establishment of a Division or Service responsible for co-management arrangements and networks should be an added value to BNF institutional arrangement. It is proposed that CMAs be formed in all 15 counties that being the case two Units are needed: (a) Inland and (b) Marine.

viii. **A National Co-Management Advisory Body** is necessary, whose composition and functions would have been ratified by legislation. The advisory body will provide guidance to the FCMO and a National Network of Co-Management Associations expected to be set up by the 15 CMAs which would have been established. The network will facilitate and guide member CMAs on allocation and management of fishing rights in the artisanal area.

ix. **The Fisheries Management Board** appointed according to statutes to advise the Minister of Agriculture for the regulation and management of the utilization of the fishery resources as well as coordination of the policies in relation to them. The composition could be representatives from (a) a fisheries university, (b) a research institution (c) the artisanal fisheries- the national CMA network (d) LAFA (e) Industrial fisheries (f) Liberia Maritime Authority (g) Liberia Coast Guard (h) Ministry of Justice (i) Ministry of Gender (j) Ministry of Agriculture and (k) other members.

4.1.4 County level

County administration

The administration will provide the enabling environment for stakeholders participation in planning, monitoring and evaluation and enforcement of fisheries regulations. The administration will provide access to information so that the same information base is available to all parties interested in fisheries management and development.

County Agricultural Coordinating Committee

Through the County Agricultural Coordinating Committee a forum will be provided to work with other agencies in the agricultural sector which is chaired by the County Agricultural Officer. It provides the opportunity for fisheries plans to be discussed and prepared at the county level for onward submission to the central Office as well as monitoring and evaluation of fisheries programs.

County Fisheries Office

The out-station office will coordinate, administer and supervise fisheries responsibilities in the county and will collaborate with other agencies and institutions interested in fisheries work. Data collection will be undertaken in collaboration with the CMAs established in addition to advising on fishing rights allocation, effort control and participatory monitoring of resources on negotiated indicators. It will be the liaison between the central office and the county

4.1.5 National Collaborating Institutions

Monitoring Control and Surveillance Coordinating Committee (MCS CC):

It is essential to define also the legal framework within which the Monitoring, Control and Surveillance Coordinating Committee will operate and its relationship with the Bureau of National Fisheries. The functions of the MCS CC should be dedicated to fisheries surveillance activities and financially and legally independent from security or enforcement activities of the Liberia Coast Guard. The composition must be spelt and given effect as follows: Liberia Maritime Authority, National Port Authority, Bureau of National Fisheries of the Ministry of Agriculture, Ministry of Defense, Bureau of Customs and Excise of the Ministry of Finance, Ministry of Justice including the Bureau of Immigration and Naturalization, the Prosecution Department and the Liberia National Police).

The National Maritime Security Committee

The committee was established by the President for developing and implementing the nation's maritime security strategy; implementing, enforcing and reviewing all related activities consistent with maritime security-related International Maritime Organization (IMO) conventions, protocols and treaties to which Liberia is a signatory; and planning for maritime security incidents and coordinating the response(s) of the various stakeholder. The committee comprises: both, the Ministry of Justice and Liberia Maritime Authority as co-chairs, the Ministry of Foreign Affairs, the Ministry of National Defense, the Liberia National Coast Guard, the Ministry of Agriculture, the National Port Authority, the National Security Agency, the Ministry of Finance, the National Oil Company of Liberia, the National Port Authority, the Environmental Protection Agency, and the Office of the National Security Advisor.

4.1.6 Other Government Institutions

National Investment Commission (NIC)

The investment promotion drive for the fisheries sector will be handled in collaboration of the National Investment Commission. The Commission already co-operated with the BNF for the extension of the Mesurado fishing pier lease from 10 to 25 years and has indicated its willingness to take up the new challenge in fisheries investment promotion.

Ministry of Commerce and Industry (MCI)

The Ministry of Commerce and Industry will spear head the sensitization drive to get Liberians' participation in the establishment of value addition facilities at the designated land located at Mesurado. It could be helpful in facilitating credit for the realization of the facilities.

Universities involved in fisheries work

A fisheries curriculum is being developed at the University of Liberia and that will provide the man power for fisheries extension and research. The adaptive research programs will be jointly undertaken and results shared. The Cottingham University has an aquaculture program and will be involved in training of managers as well as short courses for capacity building for aquaculture. In the future it will be possible for the Central Agricultural Research Institute (CARI) to be involved in aquaculture capacity building and adaptive research programs.

Forestry Development Agency (FDA): responsible for forestry and forests related conservation including mangroves which are used for fish preservation. It will be essential in sensitization on minimization of use and introduction of fuel efficient and energy saving systems in the fisheries.

Environmental Protection Agency (EPA): responsible for environmental monitoring and management including limiting of excessive exploitation and pollution of the fisheries waters. Its supervision of the preparation of ESIA's and ESMPs is even more relevant in the establishment of fisheries infrastructure.

Liberia Institute Statistics and Geo Information Systems (LISGIS): responsible for data management including fisheries data and works already closely with the Statistics Division for estimation of contribution of fisheries to GDP.

Ministry of Justice (MOJ): responsible for adjudication of cases particularly, infringements of the fisheries regulations.

Ministry of Lands, Mines and Energy (MLME), Lands Commission and Ministry of Internal Affairs: concern land issues for fisheries development, acquisition, surveys and facilitation of land titles.

Ministry of Finance: will work to provide the mechanisms for revenue management and projections.

The Ministry of Health (MOH) and the Standards Board (SB): will be responsible for fish sanitary certification through the competent laboratory to be established for fish imports and exports.

The Ministry of Youth and Sports (MYS) and the Ministry of Gender and Development (MGD) will mobilize the disadvantage groups comprising, the youth, women and other vulnerable groups for engagement in aquaculture and post harvest activities.

The Ministry of Education (MOE) and Ministry of Information, Culture and Tourism (MICAT) will be involved in curriculum development and sensitization for capacity building for fisheries education programs.

4.1.7 Role of Non-Governmental Organizations (NGOs)

These organizations will facilitate additional financial inflows into the sector and further strengthen the sector and accelerate development by lending support to partnership arrangements. Through the yearly accreditation mechanism instituted by the MOA, all NGOs will plan their activities to conform to the MOAs expectation and will provide annual progress reports for coordination, monitoring and evaluation. Capacity building to enhance knowledge, technical skills and capacities of fisheries beneficiary groups will be encouraged, as well as promotion of gender development activities and promotion of the welfare and advancement of other disadvantaged and vulnerable groups.

Local NGOs

Faimaba Fisheries Development Cooperation is involved in aquaculture work in the country and will partner the new Bureau of National Fisheries in promotion of aquaculture development and extension.

Liberia Artisanal Fishermen Association

This is a legally registered association with accreditation from the Ministry of Agriculture and has members in all the 9 coastal counties. Having members being part of the CMA arrangement, will work through the Co-management office of the new Bureau of National Fisheries.

Liberia Marketing Association (LMA): responsible for creation of markets and will be involved in the planning and setting up of the fish landing site cluster markets.

Liberia Credit Union National Association (LCUNA) will provide the enabling environment for provision of credit to fisheries stakeholders.

Agricultural Industry Training Bureau (AITB) will provide training needs of fisheries stakeholders as well.

International NGOs

Environmental Justice Foundation is currently interested in curbing illegal fishing activities in the country and will collaborate on MCS matters.

United Nations Mission in Liberia (UNMIL), is the current partner of the Bureau of National Fisheries in the execution of air patrols to combat illegal fishing in the fisheries waters of Liberia

Fauna International is interested in conservation issues and biodiversity programs which includes fisheries.

TRYGGT collaborates with BNF on monitoring of illegal fishing vessels in the Liberia fisheries waters.

BRAC, CATALYST, CARITAS are international NGOs interested in aquaculture extension and development.

4.1.8 Role of Banks

There will be need to provide financial services and credit for development of fisheries and aquaculture activities to which the relevance of commercial banks come to prominence. The Afriland Bank, the LBDI and the Central Bank will play a part in the fisheries and aquaculture policy implementation as already in other areas of agriculture they play a commendable role in extension and management of credit facilities.

4.1.9 Role of private sector

Private sector will be the engine of growth. Currently private sector participation is restricted to importation, cold storage and retail. Ten companies are involved namely, Caroline Frozen Foods, Cheaitou Brothers, Dalian Hailian Sea Products, Dong Yong Fisheries, Fresh Frozen Food Inc., Sierra Fishing Company, Snokr CFR, Unique Food Liberia, Ltd., and West Africa Enterprise. Only one company (Global Ocean Fisheries Corporation) is involved in fishing in the Liberia fisheries waters with 4 fishing trawlers. These companies will be actively engaged in post harvest and value addition as well as sustainable fisheries implementation plans.

4.1.10 Role of Development Partners

The main role of Development Partners is to provide support to the sector to fill funding gaps in the implementation plan. The donor community comprises bilateral, multilateral and regional organizations. The main regional or sub-regional partner organizations are the, ECOWAS, FCWC, SRFC and the Manu River Union. The other international partners in the fisheries sector include, EU, IFC, the World Bank, USAID, SIDA, JICA, GIZ, and the FAO. The Development Partners will support MOA in the re-structuring of BNF, support upgrading of the capacities, and the needs assessment programs by funding of recruitment of experts, building of enabling infrastructure including the setting up of the fisheries institution for award of BSc Degrees.

4.3 Monitoring and Evaluation

A Monitoring and Evaluation (M & E) Unit of the New BNF and will be tasked, in consultation with stakeholders of the fisheries sector, to establish a results monitoring framework to support policy implementation. At the onset, outcome indicators would be established for monitoring of performance of policy implementation (Annex I). It will require also the establishment of targets/milestones and an agreement on the form the reports expected would be generated. The Unit will carry out yearly participatory M&E programs to determine effectiveness and impact of the policies on fish production and availability, marketing and value addition as well as gaps to be filled. As part of the M&E system,

provision will be made for early warning systems to enable early mitigation and restitution interventions to avert serious dislocations during policy plan implementation.

4.3 Management framework for the Fisheries Management Units of Liberia

The operationalization of the policy framework includes the preparation of a management framework for each of the five fisheries management units of Liberia with the overall objective being sustainable management of the fisheries resources and associated ecosystems. The detailed management framework is attached as Appendix II.

4.4 Action Plan for the Policy Framework

The plan of implementation of the policy framework is attached as Appendix III. The plan indicates the specific actions (interventions) to be taken, the delivery date and the lead agency or institution responsible, to achieve the expected outcomes in Appendix I. The plan also shows the linkage of the interventions to the strategy and ultimately to the policy objective.

Appendix I Outcome indicators for monitoring of performance of policy implementation

Outcome indicators	Targets	Remarks
Main fish communities of management units show signs of recovery	Indicative MSY targets for management of targeted fish resources: Sparids 8,000 t Sciaenids 2,000 t Peneaids 1,600 t Small pelagic not predictable Large pelagic 45,000 t	Indicative MSY targets estimated from literature and Nansen surveys. Current MSY levels to be defined by on-going stock assessment work by University of Iceland/MRAG
Reduction in the exploitation of mangroves for fish smoking and household activities	60% reduction	Due to establishment of fish landing site clusters with improved processing facilities for fish smoking and cold storage facilities for promotion of fresh fish trade
Reduction of volume of by-catch and discard fish species	15% reduction	Implementation of 100% observer coverage and functional MCS sub-committees of the CMAs
Increase in annual rents from target fisheries	Annual expected rent (US\$) from exploitation of targeted fisheries is 12 M.	Maximum total annual rent has never exceeded US\$0.50 M before 2010
Increase in fish production from aquaculture	15,000 t/year	Projected to meet 30% of annual deficit in fish supply: the rest of deficit to be made up from improved governance and an annual fish importation program
Effective operation of CMAs formed in the 15 counties	90% functional and self sustaining	9 CMAs in coastal and 6 in inland counties to be established
Improved fishermen earnings per capita	More than 50% of registered fishermen earning per capita income above US\$1,000.00	To conform with the Liberia's vision of becoming a middle income Country by 2030
Reduction in illegal fishing	80% reduction	Attributed to: <ul style="list-style-type: none"> • Strengthened capacity of the LCG; • Strengthened international intelligence gathering • State of the art MCS equipment • Functional MCS coastal stations • Effective community surveillance of the established MCS sub-committees of CMAs

Minimization of conflicts	20% reduction of unresolved conflicts	<ul style="list-style-type: none"> • Promotion of conflict management mechanisms • Establishment of a national committee for conflict management • Establishment of sub-committees of the CMAs for conflict management • Application of collaborative management approaches to foster cooperation to reduce conflicts
Increased local value added to fish products	20% value added	<ul style="list-style-type: none"> • Establishment of fish landing site clusters • Promotion of value added enterprises at Mesurado • Establishment of a functional competent laboratory for promotion of fish export • Construction of import and export terminal to promote value addition

Appendix II Management framework for fisheries management units of Liberia

1. Management framework for the inshore demersal fisheries

The sector plan for the marine small-scale fisheries prepared, with the support of the EAF Nansen Project, was reviewed and the aspects that relate to the inshore demersal fisheries as a separate management unit have been adapted in the formulation of this management framework.

Description of the fishery

The Sciaenids feature largely in the various surveys of 0 – 18m depth. Catch composition from the inshore grounds shows 36% for these species. Catches from Liberia by 1985 showed 810 tones of sciaenids out of a catch of 7,478t i.e., 11% (FAO catch statistics). Considering only the shallow water community, this produced a total of 1,435t, although there are also 1509t of fish n.ei. Of this identifiable shallow water catch, therefore, the Sciaenid contributes 56%. The most dominant representative species are: *Pseudolithys senegalensis*, *P. elongates*, *P. brachygnathus* of the sciaenids plus typical *Galeoides decadactylus*, *Drepane Africana*, *Arius* spp.

This fishery is exploited by the shrimp vessels and small inshore trawlers as well as the artisanal fishery although to possibly lower extent with fishing gear including ring nets, driftnets, beach seines, hook and line. The biomass is estimated as 1,691t.

The 2008 report of the CECAF Sub-Committee, Demersal Working Group (South) indicates that the Sciaenid community is either fully exploited or over-exploited in the sub-region.

Overall Objective

Sustainable management of the inshore demersal fisheries resources and associated ecosystems.

Management Objectives

- Restoring capacity of the fish communities (Sciaenids) to produce at Maximum Sustainable Yield;
- Enhancing the well being of the ecosystem by preserving and minimizing adverse impacts;
- Improving the livelihoods of fisheries communities;
- Improving the governance of the fishery sector

Scope

The scope of the management framework defines the target fishery, area of operation and the species exploited.

Operation of the management plan

The plan will be operationalized through a two tier approach involving a co-management arrangement for the artisanal fisheries and action by the central Fisheries Authority in close collaboration with stakeholders in the industrial fisheries. Under the co-management system, Co-management Associations (CMAs) will be established in the various coastal counties from which sub-committees will be formed to operationalize the plans including those for granting of access, monitoring, surveillance and conflict management. The capacity of these sub-committees will be enhanced including alternative conflict management and community surveillance mechanisms. For the industrial fisheries, the central Fisheries Authority will establish stakeholder consultative bodies for decision making, allocation of fishing licenses, monitoring, conflict management etc. The national committee for granting of fishing licenses will work very closely with licensed stakeholders in allocation of fishing licenses and monitoring of performance and to include the possibility of multi-year licenses schemes for sustainable management of the inshore demersal fisheries resources.

Review of the plan

Progress of implementation will be reported to the Minister on half yearly basis and formal review conducted on bi-annual basis. Results of the review processes will be presented to the Minister who will make final decisions for restitution if required.

Key policy drivers

The management plan is consistent with the relevant requirements of the 2010 Fisheries Regulations, the FAO Code of Conduct for Responsible Fisheries, the Ecosystem Approach to Fisheries, Ecological Sustainable Development, the Plan of Implementation of the World Summit on Sustainable Development, 2002, as amended at Rio+ 20, 2001, the Precautionary Approach, the Convention on Biological Diversity, and the Integrated Coastal Zone Management.

Rationale

Over the last 20 years, the juvenile mortality of these species has been increasing as a result of increase in the by-catch rate in the shrimp fishery. This situation is aggravated by the indiscriminate use of destructive fishing methods and illegal, unreported and unregulated (IUU) fishing as well as the use of small mesh size nets in spawning and nursery areas by both small-scale fishers and industrial fisheries. The rampant cutting down of mangrove vegetation for fish smoking, boat building, urbanization, etc., has degraded spawning and nursery habitats, thereby causing possible stock recruitment failure or disturbance in stock recruitment. The excessive exploitation of these species has considerably increased the fishing mortality over the years. Recent estimates by the Fishery Committee for Eastern

Central Atlantic (CECAF) Scientific Sub-Committee on the basis of work undertaken by the by CECAF Scientific Sub Committee Demersal Working Group (South) have indicated that the Sciaenidae species are either fully exploited or over-exploited in the sub-region comprising Liberia, Sierra Leone, Guinea and Guinea Bissau. These species play an important role in the socio-economic development of the fishers and in food security and could become an important commodity in international fish trade particularly by the artisanal and semi-industrial operators. Hence, CECAF recommended that management options be taken to halt further decline in the stocks. In view of the above, coordination is required between those responsible for implementing sector plans with a view to restoring the stocks, to maintain the integrity of the corresponding ecosystems and improve the livelihoods of fishing communities. Taking into account the vital contribution from small-scale fisheries to food security and economic growth, improved management and efficiencies throughout the food chain can increase food security while using fewer natural resources, that is, to achieve more with less.

The activities of small-scale fishers are generally carried out in the Inshore Exclusion Zone (IEZ) as defined in the 2010 Fishery Regulations. The inshore areas are the major breeding grounds for most fish species in the country. Within the IEZ, fishing by artisanal fishers is expected to be limited within 6 nautical miles from the shore line but with motorized boats artisanal fishing potentially occurs over the whole of the continental shelf area, within and outside the IEZ in depths of up to 10 meters. No Marine protected areas (MPAs) have been established but there are proposals to establish these under WARFP.

Table 2 Log frame for the inshore demersal fisheries of Liberia

Actions	Performance indicators	Key Actors	Timeline
Restoring capacity of fish communities (Sciaenids) to produce at Maximum Sustainable Yield			
Protection of spawning and nursery grounds and prohibition of fishing in those areas	Number of reported incursions into IEZ reduced by 80%	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
	Spawning biomass level increased by 15%	BNF	Begins in 2014 and throughout to 2030
Promotion of responsible harvest practices	50% monofilament nets replaced with appropriate nets	BNF , MOA, County Authorities, CMAs	Begins in 2014 and throughout to 2030
	Number of operations known to adversely impact on habitats reduced by 60%	BNF, EPA, MOA/CMAs	Begins in 2014 and throughout to 2030
	Number of mesh size violations reduced by 50%	BNF CMAs	Begins in 2014 and throughout to 2030
	9 operational CMAs (involved in participatory MCS, data collection, policing, etc.)	BNF , MOA	Begins in 2014 and throughout to 2030
Strengthen knowledge towards responsible fisheries	Reports on various key issues of the fishery disseminated to 50% of fisheries stakeholders	BNF	Begins in 2014 and throughout to 2030
	60% increase in funding to meet data collection, research, monitoring and information needs	MOA, MOF, BNF	Begins in 2014 and throughout to 2030
Ensure appropriate biological and socio-economic information and data are collected, measured and monitored	All reports of frame surveys, canoe registration, catch and fish stock assessments to be reviewed and disseminated	BNF	Begins in 2014 and throughout to 2030
	Information available on social and economic benefits, financial returns,	BNF, Partners	Begins in 2014 and throughout to 2030
	100% contribution to regional dash board	BNF	Begins in 2014 and throughout to 2030
Reduce volume of by-catch in shrimp fishery	Reduction in volume of by-catch and discards by 15%	BNF	Begins in 2014 and throughout to 2030
	90% Mapping of the fishing grounds	BNF, MOA	Begins in 2014 and throughout to 2030
	Reduction (15%) of the volume of juveniles shrimps landed	BNF, MOA, EPA/ CMAs	Begins in 2014 and throughout to 2030
Enhanced ecosystem well-being by minimizing adverse impacts on the ecosystem			

Minimize impacts of fishing operations on fisheries habitats	70% reduction in the number of fishers using illegal and undersized nets	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
	Reduction of 5% a year the exploitation of mangroves and other habitats	BNF, MOA, EPA, CMAs	Begins in 2014 and throughout to 2030
	75% percent of processors using improved techniques	BNF, CMAs	Begins in 2014 and throughout to 2030
	9 MPAs established and operational	BNF, MOA, EPA, County Authorities	Begins in 2014 and throughout to 2030
Protect coastal wetlands and marine aquatic environments from land-based pollution, etc.	Greater awareness and collaboration between BNF and other line ministries on potential negative effects of fertilizers and other land-based pollution	BNF, EPA, MOA	Begins in 2014 and throughout to 2030
	30% reduction in urban migration	BNF, MOA, EPA	Begins in 2014 and throughout to 2030
Maintain low level impacts of fishing operations on by-catch	15% reduction of reports by industrial fisheries on by-catch and discards	BNF, MOA	Begins in 2014 and throughout to 2030
	The proportion of by-catch to total catch minimized by 15%	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
Improving the livelihoods of small-scale fisheries communities			
Improve economic efficiencies and financial returns to the fishery operators	9 fish landing site clusters operated by CMAs	BNF	Begins in 2014 and throughout to 2030
	3,000 operators , especially women, trained in fish processing, marketing and value addition	BNF, CMAs	Begins in 2014 and throughout to 2030
Provide opportunities to fishers and operators to improve their livelihoods	5 professional organizations established in each county	BNF, MOA, County Authorities, Coop. Dev. Agency	Begins in 2014 and throughout to 2030
	30% percent increase in bona fide membership of cooperatives	BNF, MOA, County Authorities, Coop. Dev. Agency	Begins in 2014 and throughout to 2030
	9 CMAS functional and self reliant	BNF, MOA, County Authorities, Coop. Dev. Agency	Begins in 2014 and throughout to 2030
	5,000 fishers and other stake-holders trained on various aspects of small-scale fisheries, particularly in business,	BNF, MOA, County Authorities, Coop. Dev.	Begins in 2014 and throughout to 2030

	safety, group dynamics and organization	Agency, CMAs	
	5000 operators benefiting from credit schemes annually	BNF	Begins in 2014 and throughout to 2030
	80% increase in the number of micro-projects assisted by donors, NGOs, etc.	BNF	Begins in 2014 and throughout to 2030
Maintain flow of social and economic benefits from the fishery to the community	75% increase in number of facilities and amenities in fishing communities	BNF, MOA, County Authorities, Coop. Dev. Agency	Begins in 2014 and throughout to 2030
	Enhanced effectiveness of BNF, CMAs and socio-professional organizations to mobilize and collaborate with appropriate line ministries, agencies, donors, NGOs, etc. to address livelihood issues including gender and improve conditions in fishing communities	BNF, MOA, County Authorities, Coop. Dev. Agency	Begins in 2014 and throughout to 2030
Protect fishing communities against natural and man-made disasters	90% increase in awareness creation on the possible risks and adaptation, resilience	BNF, EPA, Social Welfare, County Authorities	Begins in 2014 and throughout to 2030
	80% of vulnerable communities identified	BNF, EPA, Social Welfare, County Authorities	Begins in 2014 and throughout to 2030
	9 CMAs and 5 socio-professional groups/per county trained on disaster preparedness	BNF, EPA, Social Welfare, County Authorities	Begins in 2014 and throughout to 2030
Improving governance			
Create an enabling environment for effective and efficient management of the inshore demersal fisheries sector	10% reduction of duty on locally caught fish and 300% increase on imported fish and fishery products	BNF, MOA, MOF, Customs	2016
	Increased facilitation to obtain credit by small-scale operators	BNF, MOA, Coop. Dev. Agency	Begins in 2014 and throughout to 2030
	9 fully operational CMAs	BNF, MOA	Begins in 2014 and throughout to 2030
	80% of sector activities co-managed by small-scale operators associations	BNF, MOA	Begins in 2014 and throughout to 2030
Strengthen institutional capacity of BNF for better management	Inshore demersal fisheries under rights-based arrangements	BNF, MOA	2016
	Effective CMAs exist in 80% of landing sites	BNF	Begins in 2014 and throughout to 2030
	Participatory small-scale fishers MCS operational in 80%	BNF, CMAs	Begins in 2014 and

	of landing sites		throughout to 2030
	Skills of 10,000 fishers and operators strengthened	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
Strengthen sub-regional and regional cooperation in fisheries management	Joint management arrangement established with Sierra Leone on the management of small pelagics and Sparidae and Sciaenidae resources	BNF, MOA, SL fisheries authorities, Ministry of Justice, Ministry of Foreign Affairs, Ministry of Defense	Begins in 2014 and throughout to 2030
	Bilateral agreement with Sierra Leone on MCS, and Minimum Conditions of Access for third parties	BNF, MOA, SL fisheries authorities, Ministry of Justice, Ministry of Foreign Affairs	2015

2. Management framework for the offshore demersal fisheries

Description of the fishery

The outer zone of 51 – 100 m depth is referred to as the offshore. The Nansen (2007) survey shows the great predominance of Sparids in this zone with a biomass estimate of 7,802 tones and density of 2.45t/m² in Liberia waters. The key indicative sparid community are: *Pagrus* (=Sparus) *caeruleostictus*, *Pagellus belloti*, *Dentex canarensis*, *Detex congoensis* and *Dentex angolensis*. Most Sparids spawn in coastal areas and spend their lives in deep waters. Some are multi-spawners.

More recent estimates (2008) of the CECAF Sub-Committee, Demersal Working Group (South), shows that the Sparid community are either fully exploited or over-exploited in the sub-region.

The Sparids are largely exploited by industrial fishing vessels but also by artisanal fishers using hook and line and motorized craft.

Overall Objective

Sustainable management of the offshore demersal fisheries resources and associated ecosystems.

Management Objectives

- Restoring capacity of the fish communities (Sparids) to produce at Maximum Sustainable Yield
- Enhancing the ecosystem
- Strengthening of governance of the fishery
- Improving livelihoods

Scope

Involves all demersal fisheries in the offshore areas of Liberia, particularly the key indicative fish species mentioned above.

Operation of the management plans

The operation of the management plans will involve the participation of industrial stakeholders in the decision making process consequently will be part of the process for accounting for the performance of the plan. The central Fisheries Authority will work very closely with licensed stakeholders in allocation of fishing licenses to include the possibility of multi-year licenses schemes for sustainable management of the resources. Participatory conflict management mechanisms such as the alternative conflict management systems for effective settlement of conflicts arising will be adopted, as well as the application of ‘the best alternative to negotiated agreement’ (BATNA) guidelines to enhance negotiations for settlement of conflicts.

Review of the plan

Progress of implementation will be reported to the Minister on half yearly basis and formal review conducted on bi-annual basis. The results of processes adopted for the review will be presented to the Minister who will make final decisions.

Key policy drivers

The management plan is consistent with the relevant requirements of the 2010 Fisheries Regulations, the FAO Code of Conduct for Responsible Fisheries, the Ecosystem Approach to Fisheries, Ecological Sustainable Development, the Plan of Implementation of the World Summit on Sustainable Development, 2002, as amended at Rio+ 20, 2001, the Precautionary Approach, the Convention on Biological Diversity, and the Integrated Coastal Zone Management

Rationale

The indicative fish species are either fully exploited or over-exploited and biomass levels are unable to sustain fish harvests at maximum sustainable yield levels due to illegal fishing and unauthorized transshipments. The fisheries are subjected to high juvenile mortality due to the increased by-catch rates of the high valued shrimp fishery. The situation is aggravated by indiscriminate cutting of mangroves and pollution of the nursery and spawning areas diminishing the regenerative capacity of the fish stocks. Incidentally the fish species provide a source of livelihood for the 50% of the population of Liberia who live in the 9 coastal counties and have no alternative sources of livelihood.

Table 3 Log frame for the offshore demersal fisheries of Liberia

Actions	Performance indicators	Key Actors	Timeline
Restoring capacity of fish communities (Sparids) to produce at Maximum Sustainable Yield			
Limited entry licensing/effort control	No. of vessels licensed not to exceed 10 at any one year	BNF, MOA	Begins in 2014 and throughout to 2030
	Application of catch ceilings not to exceed MSY levels	BNF, MOA	Begins in 2014 and throughout to 2030
Define permitted gear specifications	80% compliance with Codend mesh restriction of 27-40 mm	BNF, MOA	Begins in 2014 and throughout to 2030
	80% compliance with body net mesh restriction of 40 – 60 mm	BNF, MOA	Begins in 2014 and throughout to 2030
	80% compliance with Total length net restriction of 11 m	BNF, MOA	Begins in 2014 and throughout to 2030
	80% reduction in fishing in the Inshore Exclusion Zone	BNF, MOA	Begins in 2014 and throughout to 2030
	80% reduction of trawlers fishing in declared TURFS	BNF, MOA	Begins in 2014 and throughout to 2030
Define clear boundaries to separate the inshore and offshore demersal fisheries	60% reduction of conflicts from competition	BNF, MOA	Begins in 2014 and throughout to 2030
	20% reduction in over-exploitation of resources due to competition	BNF, MOA	Begins in 2014 and throughout to 2030
Enhancing the ecosystem			
Enforce legislation on exploitation of mangroves, and habitats for spawning and nursery grounds	Mangrove cutting reduced by 10%	BNF, MOA, EPA, FDA	Begins in 2014 and throughout to 2030
	20% reduction in No. of trawlers fishing in spawning and nursery areas	BNF, MOA	Begins in 2014 and throughout to 2030
Create MPA	At least one to be created	BNF, MOA	Begins in 2014 and throughout to 2030
Minimize pollution of water ways	At least on CMA to established for each large water body	BNF, MOA	Begins in 2014 and throughout to 2030
Strengthening of governance of the fishery			
Establishment of enabling	At least 1 CMA established in each county	BNF, MOA	Begins in 2014 and

environment for Co-Management for fisheries management			throughout to 2030
	1 TURF to be established in each county	BNF, MOA	Begins in 2014 and throughout to 2030
	A network of CMAs to be established	BNF, MOA	Begins in 2014 and throughout to 2030
	A national institutional framework established for co-management	BNF, MOA	Begins in 2014 and throughout to 2030
	A national legislative framework established for co-management	BNF, MOA	Begins in 2014 and throughout to 2030
International, regional and sub-regional collaboration	A national working committee to work with the FAO/CECAF groups on pelagic and demersal resources management	BNF, MOA	Begins in 2014 and throughout to 2030
	Liberia to become a member of ICCAT	MOA	Begins in 2014 and throughout to 2030
	Attend all meetings of FCWC, SRFC and other regional bodies	FCWC, SRFC, MOA	Begins in 2014 and throughout to 2030
	A joint committee established for management of Sherbro fish resources	MOA, SL	Begins in 2014 and throughout to 2030
Improving livelihoods			
Establish fish landing site clusters for promotion of value addition	At least 1 fish landing site cluster established in each county to produce high quality fish for local consumption and export, improve marketing facilities	MOA, WORLD BANK	Begins in 2014 and throughout to 2030
	At least 2 Community Fisheries Centers established in each county to advance social cohesion and promote responsible fishing practices and good governance	MOA, WORLD BANK	Begins in 2014 and throughout to 2030
Promote the environment for self advancement	Provide micro-credit facilities at least to each district	MOA, BANKS, CENTRAL BANK	Begins in 2014 and throughout to 2030
	Establish at least one centre in each county to facilitate training in alternative income generation	MOA, BNF	Begins in 2014 and throughout to 2030
	Establish a center for training in numeracy, book keeping and business management	MOA, BNF	Begins in 2014 and throughout to 2030

3. Management framework for the shrimp fishery

Description of the fishery

This is another shallow water fishery with the by-catch estimated to range from 49 to 90% with an average of 74%, hence the significance for the inshore fishery and the sciaenid community. The major species is *Penaeus notialis* with some parapeneids. In the past this has also been a lucrative fishery which peaked in 1978 at 1,689t when there were 12 shrimpers operating off the coast of Liberia. Over the last 10 years the artisanal catch has been recorded at between 30 to 252t. The most recent catches are over 400t.

An estimate of the Maximum Economic Yield of the shrimp fishery suggests this would be some 800t ideally generated by 14 shrimpers with an MSY of 1,280 – 1,600t. The current shrimp catch in Liberia is underreported and is given as around 400t. Assuming a 75% by catch would mean their total catch would be 1,600t and further assuming 22% of this sciaenid, then the sciaenid catch from the shrimp vessels could be 353t. This added to the artisanal catches could be jeopardizing the inshore demersal stocks.

The 2007, FAO/CECAF Working group at its 5th session reported that the main shrimps stocks are either fully exploited or over-exploited.

Overall Objective

Sustainable management of the Shrimp fisheries resources and associated ecosystems

Management Objectives

- Reduce 74% by-catch to an acceptable targeted level of 50%
- Enhance the ecosystem of the shrimp fishery
- Promote responsible shrimp catches

Scope

The target is to manage the Shrimp fishery but this being 74% by-catch of the inshore and offshore demersals consideration will be given to management of the Sciaenid and Sparid fish communities.

Operation of the management plans

The plan will be operationalized through a two tier approach involving a co-management arrangement for the artisanal fisheries and action by the central Fisheries Authority in close collaboration with stakeholders in the industrial fisheries. Under the co-management system, Co-management Associations (CMAs) will be established in the various coastal counties from which sub-committees will be formed to operationalize the plans including those for granting of access, monitoring, surveillance and conflict management. The capacity of these sub-committees will be

enhanced including alternative conflict management and community surveillance mechanisms. For the industrial fisheries, the central Fisheries Authority will establish stakeholder consultative bodies for decision making, allocation of fishing licenses, monitoring, conflict management etc. The national committee for granting of fishing licenses will work very closely with licensed stakeholders in allocation of fishing licenses and monitoring of performance and to include the possibility of multi-year licenses schemes for sustainable management of the shrimp resources.

Review of the plan

Progress of implementation will be reported to the Minister on half yearly basis and formal review conducted on bi-annual basis. The results of processes for review will be presented to the Minister who will make final decisions for restitution if required.

Key policy drivers

The management plan is consistent with the relevant requirements of the 2010 Fisheries Regulations, the FAO Code of Conduct for Responsible Fisheries, the Ecosystem Approach to Fisheries, Ecological Sustainable Development, the Plan of Implementation of the World Summit on Sustainable Development, 2002, as amended at Rio+ 20, 2001, the Precautionary Approach, the Convention on Biological Diversity, and the Integrated Coastal Zone Management

Rationale

The FAO/CECAF working group on demersals has established that the main shrimps stocks are either fully exploited or over-exploited by industrial shrimpers and artisanal fishermen and definitely stock capacities need to be built to restore production at maximum sustainable yield. The regenerative capacities are also constrained by the disruptions and disturbance in the habitats of juvenile shrimps due to the cutting of mangroves for fuel wood and fish smoking and pollutants dumped into such environments. The degrading of the inshore areas by trawls sweeping the ocean floors of the inshore areas is further increasing the mortality of juvenile shrimps which abound the areas before moving deep sea as adults. Another rationale is to enable Liberia to incorporate lessons learnt in other areas on the use of selective devices such as by-catch reduction devices (BRDs) and Turtle Excluding Devices (TEDs).

Table 4 Log frame for the shrimp fisheries of Liberia

Actions	Performance indicators	Key Actors	Timeline
Reduce by-catch to an acceptable target level of 50%			
Introduce entry licensing control	Regulate No. of shrimpers to that which can produce at MSY	BNF, MOA	Begins in 2014 and throughout to 2030
	Reduce by catch from 74% to 50% of total shrimp landings	BNF, MOA	Begins in 2014 and throughout to 2030
Enforce permitted gear specifications	80% of trawls permitted to conform to minimum mesh size of 27mm of codend	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
	80% of trawls permitted not to have lengths exceeding 11 m	BNF, MOA	Begins in 2014 and throughout to 2030
Introduce management controls to reduce by-catch	100% Mapping of fishing grounds	BNF, MOA	Begins in 2014 and throughout to 2030
	90% introduction of selective fishing devices for trawls	BNF, MOA	Begins in 2014 and throughout to 2030
	Control landing and transshipment catches at 70% of landing sites	BNF, MOA	Begins in 2014 and throughout to 2030
	At least 2 observers per shrimper on a fishing trip to minimize volume of discards and by-catch	BNF, MOA	Begins in 2014 and throughout to 2030
Enhance the ecosystem of the shrimp fishery			
Define the breeding area and the closed area	Breeding areas and closed areas established	BNF, MOA	Begins in 2014 and throughout to 2030
	The IEZ mapped out clearly	BNF, MOA	Begins in 2014 and throughout to 2030
Implement MPAs	At least 1 MPA established	BNF, MOA	Begins in 2014 and throughout to 2030
	At least 1 TURF created in each county	BNF, MOA	Begins in 2014 and throughout to 2030
Sensitization of stakeholders on environmental issues and resource control	Quarterly fora organized for coastal communities	BNF, MOA	Begins in 2014 and throughout to 2030

	75% of communities compliant with environmental regulations	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
Promote responsible shrimp catches			
Improve MCS mechanisms	14% Increase in quality of shrimp	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
	24% reduction in by-catch	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
	80% reduction in number of encroachment in IEZ	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
	50% reduction in number of arrests	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
Enhance the Sea Observer Program	50% reduction of volume and composition of by-catch	BNF, MOA	Begins in 2014 and throughout to 2030
	14% increase in size of shrimps	BNF, MOA	Begins in 2014 and throughout to 2030
	24% reduction of by by-catch	BNFFC, MOA	Begins in 2014 and throughout to 2030
Protection of breeding areas	Close areas and closed seasons established	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030

4. Management framework for the small to medium pelagic fishery

Description of the fishery

The small inshore pelagic community, largely *Ethmalosa fimbriata*, *Sardinella* and *Illisha Africana*, are important species for the artisanal fisheries making up around 60% of the catch. These species are a major contribution to the fish requirement of the country. *Ethmalosa* is euryhaline species found inshore. There are two *Sardinella* species which often occur in mixed species - *S. aurita* and *S. maderensis* with *S. maderensis* being more euryhaline and being a major component of *Ethmalosa* catches. The *S. aurita*, generally occur further out than the *Ethmalosa*, even beyond the shelf although their juveniles may come close inshore. *Sardinella* was a major component of the large industrial pelagic fisheries of the '70s and '80s.

Illisha Africana is another clupeid which inhabits the warm inshore waters along sandy beaches at less than 25m.

There are no biomass estimates for the inshore pelagic stocks plus pelagics respond less well to catch and effort-based models because of the environmental element in their survivorship, therefore devising an estimate of MSY is difficult.

The offshore group, are largely predatory and include principally the scombrids and *Chloroscombrus chrysurus* along with *Carangidae trachurus* spp. as well as as *Decapterus punctatus* and *Selene dorsalis*. It was these stocks in the 1970s and 1980s which became the subject of large scale industrial fishing for the small pelagic and horse mackerel largely by purse seine vessels of the USSR and Eastern Europe.

In the 2006 survey the Nansen estimated a biomass of 25,000t for Liberia whilst in 2007 the estimate was for 48,000t. An earlier USSR survey suggested a biomass of 43,000t.

Purpose/overall objective

Sustainable management of the pelagic stocks of the Liberia fisheries waters

Specific objectives

- To restore biomass of pelagic stocks to produce at maximum sustainable yield levels
- To promote international cooperation for management of shared fish stocks
- To improve livelihoods
- To promote responsible fishing

Scope

The fish stocks concerned are the following pelagic species; *Sardinella maderensi*, *Sardinella aurita*, *Ethmalosa fimbriata*, *Scombrids*, *Decapterus pumctatus*, *Trachurus trecae*, *Illisha Africana*, *Chloroscombrus chrysuru*, *Selene dorsalis*, *Carangidae trachurus*.

Operation of the management plans

The plan will be operationalized through a two tier approach involving a co-management arrangement for the artisanal fisheries and action by the central Fisheries Authority in close collaboration with stakeholders in the industrial fisheries. Under the co-management system, Co-management Associations (CMAs) will be established in the various coastal counties from which sub-committees will be formed to operationalize the plans including those for granting of access, monitoring, surveillance and conflict management. The capacity of these sub-committees will be enhanced including alternative conflict management and community surveillance mechanisms. For the industrial fisheries, the central Fisheries Authority will establish stakeholder consultative bodies for decision making, allocation of fishing licenses, monitoring, conflict management etc. The national committee for granting of fishing licenses will work very closely with licensed stakeholders in allocation of fishing licenses and monitoring of performance and to include the possibility of multi-year licenses schemes for sustainable management of the inshore pelagic fisheries resources.

Review of the plan

Progress of implementation will be reported to the Minister on half yearly basis and formal review conducted on bi-annual basis. The results of processes adopted for review will be presented to the Minister who will make final decisions for restitution if required.

Key policy drivers

The management plan is consistent with the relevant requirements of the 2010 Fisheries Regulations, the FAO Code of Conduct for Responsible Fisheries, the Ecosystem Approach to Fisheries, Ecological Sustainable Development, the Plan of Implementation of the World Summit on Sustainable Development, 2002, as amended at Rio+ 20, 2001, the Precautionary Approach, the Convention on Biological Diversity, and the Integrated Coastal Zone Management.

Rationale

Generally, the report of the 2009 CECAF/ECAF, Small Pelagic Fish – Subgroup, South, indicates the inshore pelagic stocks are fully exploited for such fish resources to continue to provide a sustained source of livelihood, employment, food security and contribute to GDP for the dependent fishing communities. It is therefore prudent that the necessary measures are taken the sustainable management of the inshore pelagic fish species to facilitate meaning socio-economic development.

Table 5 Log frame for the management of shared small to medium pelagic resources

ACTIONS	PERFORMANCE INDICATORS	PARTICIPANTS	TIMELINE
To restore biomass of pelagic stocks to produce at maximum sustainable yield levels			
Reduce fishing effort	Enforce ban on pair trawling	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
	Enforce ban on transshipments at sea to reduce effort	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
	Establish TAC for the industrial fisheries to reduce fish landings by 20%	BNF, MOA	Begins in 2014 and throughout to 2030
	Enforce the approved mesh size regulations	BNF, MOA	Begins in 2014 and throughout to 2030
Strengthen existing observer programmes	Apply 100% observer coverage for all industrial fishing fleet	BNF MOA	Begins in 2014 and throughout to 2030
Establish effective and harmonized MCS	Number of illegal vessels reduced to less than 10%	BNF, MOA, CMAs	Begins in 2014 and throughout to 2030
	100% of licensed fishing vessels installed with MTUs	BNF, MOA	Begins in 2014 and throughout to 2030
To promote international cooperation for management of shared fish stocks			
Establishment of Joint sub-regional pelagic fisheries surveys	Undertake at least one fisheries assessment survey per year	Member countries, Research Institutions, SRFC, CECAF, GCLME, Int. agencies (FAO, World Bank, etc)	June 2011
Promotion of data exchange between the four Countries	The number of Scientific and management reports published each year	Member countries, Research Institutions SRFC, CECAF, GCLME, Int. agencies (FAO, World Bank, etc)	March 2011 – Dec. 2012
	At least one study tour made each year per country		
Promotion of collaboration between Research Institutions in	At least one exchange visit made per year	Member countries, Research Institutions SRFC, CECAF, GCLME,	March 2011 – Dec. 2012
	At least one scientific report published per year		

ACTIONS	PERFORMANCE INDICATORS	PARTICIPANTS	TIMELINE
the four Countries (IMBO, CNSHB, CIPA)	At least one feedback conference made per year.	Int. agencies (FAO, World Bank, etc)	
Promotion of collaboration between Research Institutions and Fisheries Administrations	At least one training visit made among countries each year	Member countries, Research Institutions	March 2011 – Dec. 2012
	At least one study tour made each year	SFRC, CECAF, GCLME,	
	At least one consultation between Scientists and Managers made each year	Int. agencies (FAO, World Bank, etc)	
To improve the livelihood of fishers in the four Countries			
Create alternative livelihoods by facilitating access to credit	10 micro credit projects granted	Other line Ministries, Socio-professional Organizations, Financial Institutions, SRFC, FCWC, GCLME and NGO/INGOs.	April 2011 – Dec. 2012
Improve social infrastructure and service delivery	Increase in number of schools, hospitals built and access to potable water facilities in coastal zone of the four countries built each year.	Other line Ministries, Socio-professional Organizations, Financial Institutions, SRFC, FCWC, GCLME and NGO/INGOs.	April 2011- Dec. 2012
	All children of school going age attending schools		April 2011- Dec. 2012
To strengthen knowledge of the fishers towards responsible fishing.			
Promotion of stakeholder consultation on fisheries governance at National and sub-regional level	At least one consultation organized	SRFC, FCWC, GCLME NGO/INGOs.	Jan. 2011 –Dec.2012
	At least one study tour organized for fishers organizations per year		
Promotion of stakeholder consultation on fisheries governance at National and international level	At least one consultation organized at country level and international level per year	SRFC, FCWC, GCLME NGO/INGOs.	Jan. 2011 – Dec. 2012
	At least one sub regional conference held per year	SRFC, FCWC, GCLME NGO/INGOs.	

5. Management framework for the large offshore pelagic fisheries

Liberia will conform to the ICCAT Convention for management of large pelagic fish stocks which includes the barracudas, sharks, tunas etc.

Appendix III Action plan for operationalization of the policy framework					
OBJECTIVE	STRATEGY	MANAGEMENT ACTIONS REQUIRED (INTERVENTION)	DELIVERY DATE	LEAD ACTOR	
<i>Sustainable management of fisheries resources and ecosystems</i>	1. Restoring fish biomass capacities to produce at maximum sustainable yield levels	Elaborate and adopt a National Plan of Action for the management of fishing capacity.	June, 2015	BNF, MOA	
		Prepare, implement and routinely update fisheries management plans.	Throughout	BNF, MOA	
		Strengthen the licensing and vessel registration regime to ensure removal of excess fishing capacity.	2014	BNF, MOA	
		Regulate fishing through the use of zones to avoid the risk of conflict among fishers.	Throughout	BNF, MOA	
		Prioritize and protect access by the legitimate small scale fishers to the fishery resources that are shared with the industrial fleet	Throughout	BNF, MOA	
		Establish a national committee for granting of fishing licensing, to work with organized stakeholder associations for the fisheries management units, to determine access and use restrictions as well as multi-year licensing schemes	2016	MOA	
	2. Conserving of aquatic ecosystems associated with fish production	Incorporate the principles of the ecosystem approach to fisheries plans	2014	BNF, MOA, EAF Project	
		Monitor aquatic biodiversity and key habitats	Throughout	BNF, MOA, EPA, FDA	
		Reduce by-catch, discards, and destructive fishing practices through the incentives and gear replacement schemes and encourage selective, environmentally safe and cost effective fishing gear and techniques	Throughout	BNF, CMA, LCG	
		Promote and declare marine protected areas	2020	BNF, MOA, EPA, FDA, MICAT, FFI	
		Strengthen the regulatory framework and conduct sensitization programs to enhance and protect productivity of the mangroves and wetlands	Throughout	BNF, MOA	
		Seek and strengthen inter-agency collaboration for aquatic environmental protection and reduction of negative impact of other policies on fisheries.	2014	BNF, MOA	
	3. Encouraging community and stakeholder participation in fisheries management	Embark on the collaborative management approach for allocation and management fishing rights	Throughout	BNF, CMA	
		Legitimize the existence and operations of participatory institutions through enacting enabling legislation	2014	MOA	
Undertake boat registration/embossment and fishermen registration campaigns to determine total effort		Througout	CMA, BNF, LAFA		
Provide and implement capacity building programs to upscale skills and expertise of		throughout	BNF, FAO		

		CMAAs.		
		Support the establishment of the necessary infrastructure for effective operations (offices, clusters, markets)	throughout	BNF, MOA
		Establish oversight, coordination and harmonization co-management governance structures (national network of CMAAs, national advisory body, CMA Office)	End of 2016	BNF, MOA
	4. Promoting International cooperation for management of shared stocks	Seek membership of ICCAT and domesticate the provisions of the organization	2014	BNF, MOA, MOF, MOJ
		Promote the negotiation of long-term fishing rights with distant water fishing states (DWFSs)	2014	BNF, MOA, MOJ, MOF
		Establish a national working committee for improved management of pelagic resources	2015	BNF, UL
		Continue to collaborate with the FCWC, SRFC and COMHAFAT	Throughout	BNF, MOA
		Cooperate with Sierra Leone for sustainable management of the common fisheries resources of Sherbro	2016	BNF, MOA, MOFA, MOJ
	5. Implementing effective Monitoring, Control and Surveillance (MCS) mechanisms	Develop and implement a national action plan, in accordance with the FAO International plan of action to prevent, deter and eliminate IUU fishing.	2015 and throughout	BNF, LMA, MOA, MOJ, MOD
		Support and strengthen the inter-agency institution, the MCS Coordinating Committee, to be effective in its work	Throughout	BNF, MOA
		Implement a cost effective MCS system involving a reasonable mix of land, sea and air based capabilities	Throughout	BNF, MOD, LMA
		Encourage community participation in MCS by strengthening the pilot community surveillance program of the Robertsport Co-Management Association	Throughout	BNF, Robertsport CMA
		Establish a follow through mechanism and institute deterrent fines and penalties to curb or discourage indulgence in illegal fishing activities.	End of 2014	BNF, MOA, MOF, MOJ
		Conform to ICCAT recommendations by denying or cancellation of permits to IUU vessels	2014 and throughout	BNF, MOA
		Accede to the Agreement on Ports State Measures (APSM)) and operationalize a Port State Measures Scheme that is cost effective to combat IUU fishing	End of 2014	BNF, MOA, MOFA, NPA
		Support mechanisms for bi-lateral, sub-regional and regional cooperation to combat IUU	Throughout	BNF, MOA, MOFA
		Adopt a system that monitors catches and facilitates regional and international efforts to ensure that fish imports particularly transshipped fish are legal.	End of 2014	BNF, MOA
	Developing and promoting conflict management mechanisms and	Encourage and support best possible participatory processes for planning and implementing management or policy interventions to minimize conflicts	2014 and throughout	BNF, MOA
		Establish effective mechanisms within the larger planning and management process, for addressing latent, emerging and manifest conflicts as they are realized	2014 and throughout	BNF, MOA

	structures for sustainable management of the fisheries resources	Establish and build the capacity of a national conflict management committee the for management of all fisheries conflicts except within the jurisdiction of the CMAs in the artisanal fisheries	End of 2016	BNF, MOA, MOJ
		Establish and build the capacity of CMA conflict management sub-committees especially on alternative conflict management mechanisms to address conflicts in the artisanal fisheries	2014 and throughout	BNF, MOA, MOJ
		Establish a mechanism for the transfer of cases which are beyond the capacity of the CMAs for consideration by the national conflict management committee	2014 and throughout	BNF, MOA, MOJ
		Adopt and apply the best alternative to a negotiated agreement (BATNA) as a guide for stakeholders to understand conflict and analyze how best to address their interest	2014 and throughout	BNF, MOA,
<i>Development of aquaculture to meet local fish demand deficits and for foreign exchange</i>	1. Establishing the legal framework for development of responsible aquaculture	Review existing fisheries regulations and provide for definition of aquaculture to enable implementation of the provisions of the fisheries and aquaculture policy	End of 2014	BNF, MOA, MOJ, FAO
		Review other related legislations to provide for regulation of aquaculture activities	End of 2015	EPA, MLME, MIA, LC, FDA, NIC, BNF, MOA
		Harmonize related legislations to provide for orderly development of aquaculture	2017	EPA, MLME, MIA, LC, FDA, NIC, BNF, MOA
		Create the environment for participation of private sector in the formulation of the enabling legislation	2014 - 2017	BNF, MOA, FFDC, Catalyst,
	2. Strengthening the institutional framework for development of aquaculture	Upgrade the capacity of BNF to be able to deliver aquaculture services to farmers at county and district levels	Throughout	MOA, FAO, World Bank, EU, GIZ, USATD, JICA
		Establish an effective coordination among public institutions involved in aquaculture administration	End of 2015	MOA
		Promote cooperation among line Ministries with a bearing on aquaculture to optimize the benefits of aquaculture	End of 2015	MOA
		Promote public investment in aquaculture for launching the expansion of the aquaculture sub-sector	2016 to end	MOA, NIC, MCT
		Encourage the establishment of effective farmer representative organizations to facilitate the process of public involvement in the development of the sub-sector	Throughout	BNF, CDA
		Support the development of partnerships between farmer organizations, donors and NGOs to enhance development of aquaculture	Throughout	BNF, FFDC
	3. Setting up an enabling	Provide financial services and incentives for promotion of smallholder aquaculture as a business	Throughout	LBDI, Afriland Bank, Central Bank,

environment for development of Aqua- business for growth of the sub-sector			BRAC, USAID, LCUNA
	Identify areas of high potential aquaculture zones where land based aquaculture can be a permitted land use and ecologically sustainable	2018	MOA, BNF, LME, LC, MIA, FDA, EPA
	Ensure the availability and access to inputs, including fish seed and feed as well as credit	Throughout	BNF, Fish farmers Organizations, BRAC, MCT, NIC, USAID, LCUNA, Afriland, LBDI
	Improve access to markets for fish products by maintaining standards, market data and improvement of road transport networks	Throughout	MPW, BNF, MCI, SB, LISGIS, LMA
	Establish aquaculture research and technology development capability for the growth of the aquaculture sector	2018	BNF, UL, Cottegton Univ., BRAC,
	Support cost effective aquaculture extension services to fish farmers in collaboration with the private sector and farmers/industry organization	Throughout	BNF, Catalyst, JICA, Caritas, FFDC
	Build capacity of the private and public sector institutions to produce and disseminate good quality information on aquaculture for facilitation of sound decision making	Throughout	BNF, MICAT, NIC, FAO, JICA
	Institutionalize a collaborative service between BNF and the Veterinary Service to launch a National Aquatic Health Capacity Development Program to cope with outbreaks of serious infectious diseases among aquatic animals to protect such animals and facilitate trade in aquatic animals along the their products and by-products, both nationally and internationally	2015	MOA, MOH, BNF, MOCI
	Promote the safety and quality of the farmed fish products by ensuring the application of safety and control mechanisms such as the statutory hazard analysis critical control point (HACCP) methodology	Throughout	BNF, MOH, MOCI
	Seek to target women and the youth in active involvement in aquaculture activities for promotion of the sub-sector	Throughout	MYS, MOGD, MOA, BNF
4. Improving capacity for aquaculture promotion through human resource	Undertake a needs assessment for field, managerial and scientific personnel to prepare and implement a human resource development plan	2018	BNF, USAID, FAO, JICA, GIZ, SIDA
	Develop a curriculum to incorporate aquaculture training and education at all levels	2018	MOE, MOA, BNF, UL, Cottegton Univ., AITB, CARI
	Offer practical and tailored training opportunities in collaboration with non-state	Throughout	BNF, USAID, JICA,

	development and training	actors for individual and group fish farmers		FAO, GIZ, SIDA	
		Provide in-service training opportunities for public and private sector to upgrade capacity of staff	Throughout	BNF, USAID, JICA, FAO, GIZ, SIDA	
<i>Strengthening of fisheries management and development capacities for sustenance of a vibrant fisheries sector</i>	1. Revising the legislative framework to support fisheries management and development	Legislative framework to:			
		Upscale BNF to a statutory fisheries agency/authority operating within MOA	End of 2015	MOA, cabinet, parliament	
		Establish a Fisheries management and development fund	End of 2015	BNF, MOA	
		Support MCS functions and responsibilities	End of 2015	BNF	
		Support co-management arrangements	End of 2015	BNF	
		Set fisheries management in the context of international, regional obligations and treaties	End of 2015	BNF	
	2. Up scaling the capacity of the BNF	Upgrade the capacity of the Bureau to undertake adaptive research	2020	MOA	
		Upgrade and support the Bureau to fulfill its MCS obligations	Throughout	BNF, MOA, EU	
		Establish a Policy and Planning Service and build the capacity of the Bureau to effectively collect and analyze fisheries data for timely dissemination	2017	BNF, MOA	
		Establish a technical division (service) to be linked to research for adoption and dissemination of research findings through demonstrations and extension.	2017	MOA	
		Assess the existing manpower needs, prepare and implement a capacity building program	2014	BNF	
		Upgrade the capacity of BNF to support co-management arrangements in CMA areas.	2016	BNF	
	3. Implementing a comprehensive adaptive research program for improvement of the industry	Develop and implement a fisheries and aquaculture research plan	2018	BNF, UL	
		Strengthen fisheries research, to support the determination of the status of the main marine and freshwater stocks and fisheries	2018 onwards	BNF, UL	
		Conduct research on traditional fisheries management strategies.	2018 onwards	BNF, UL	
		Conduct research to assess the effects of climate or environment change on fishery and aquaculture systems	2018 onwards	BNF, UL	
Research on economic, social, marketing and institutional aspects of fisheries for ongoing monitoring, analysis and policy formulation.		2018 onwards	BNF, UL		
Undertake research and technological development for improved aquaculture, particularly in identifying economically and environmentally suitable species for farming and sources of feed and seed.		2018 onwards	BNF, UL		
4. Implementing	Prepare and implement a plan to address the human capacity needs, continuing to	2015 onwards	BNF, FAO, EU,		

	comprehensive capacity building and advisory programs for the fisheries sector	year, 2030.		MOA, MOF, MOJ
		Actively seek resource personnel and facilitate participation of non state actors in the provision of training,	2015 onwards	BNF, MOA, FAO
		Encourage fisheries agreements that provide capacity building opportunities locally, regionally or internationally	2015 onwards	BNF, MOA, Seamen Union
		Introduce a condition of preferential employment for Liberians in fishing access agreements	2014 onwards	BNF, MOA
		Build capacity for new fisheries enterprises as well as alternative income generation activities	2014 onwards	BNF, MOGD
		Support and implement a fisheries curriculum or syllabus at all stages of formal education up the university level.	2015 onwards	BNF, MOE, UL, MYS
	5. Promoting sustainable fisheries investments	Undertake studies to identify constraints of the fisheries sector and spear head the implementation of institutional reforms	2015	BNF, MOA
		Ensure that information is accessible to the public in a transparent manner that permits monitoring and evaluation of the effectiveness of the management regimes and supports participation and investment in the sector	Throughout	BNF, CMA, MICAT
		Negotiate terms and conditions for fisheries concessions or contracts for management of infrastructures including Built, Own, Operate and Transfer (BOOT) investments.	2015 onwards	BNF, NIC, MCI, Bureau of Concessions
		Promote the development of credit and micro-credit schemes to encourage investment in fisheries.	2015 onwards	BNF, NIC
		Study and implement a fuel subsidy mechanism to be linked with responsible fishing for the artisanal fisheries to promote investment in the sub-sector.	2016 onwards	BNF, NIC, MOF, LPRC
Conduct robust financial studies for potential large investments into the sector and to utilise these studies to attract suitable potential investors and joint venture partners into the planning and development process of the fishery sector.		2015	BNF, NIC, MOF	
Create in cooperation with the Ministry of Commerce and Industry, and the National Investment Commission a business environment that encourages investment		2015	BNF, MOA	
Prepare and offer investors in fisheries incentives for identified ventures that are socially and environmentally sustainable		2017	BNF, NIC, MOF	
6. Setting up sustainable funding mechanisms for fisheries	Revise the existing mechanism for generating fishing license revenues	End of 2014	BNF, MOA, MOF	
	Revise the procedure of 50% down payment to full payment of license fees before commencement of fishing	Beginning of 2014	BNF	
	Implement a license scheme for transshipment vessels (fish carriers) to expand the revenue source for fisheries development.	2014	BNF	

	development and management	Devise and implement an enabling flexible fish import tariff system which protects the local fishing industry	2014	BNF	
		Introduce tax reliefs to importers of fishing inputs to stimulate the environment for genuine importers	2014	BNF	
		Establish and operationalize a fisheries management and development fund	2016	MOA, MOF, MOJ	
<i>Enhancement of Value addition, marketing and fish trade for improved foreign exchange and employment opportunities</i>	1. Improving economic returns through establishment of post harvest infrastructure	Establish fish landing site clusters at all major fish landing sites to increase the economic value of fish products	Throughout	BNF, MOA	
		Establish the import and export terminal in Mesurado to promote fish export also from the fish landing site clusters	throughout	BNF, MOA	
		Support the artisanal fisheries to increase the value of fish by provision of facilities for ice storage on board craft.	2015	BNF, MOA, CMA	
	2. Establishing national safety and quality assurance systems to enhance safety and quality of fish	Adopt, sensitize and implement a capacity building on Hazard Analysis of Critical Points (HACCP) and Total Quality Management (TQM).	Throughout	BNF, MOH, MOCI	
		Build the capacity of the BNF for adoption of the Codex Alimentarius for fish inspections and quality control of fish and fish products	throughout	BNF, MOH, MOCI	
		Strengthen the capacity of the BNF to sensitize and enforce the Fish Products Regulations passed.	2015 onwards	BNF, MOH, MOCI	
		Introduce quality, standards, metrology and testing (QSTM) infrastructure to ensure maintenance of set standards of quality.	2015	BNF, MOH, MOCI	
	3. Promoting value addition, fish marketing and trade opportunities	Encourage packaging and develop fish products that add value to fish and fish products	2015	BNF, CMA, MOCI	
		Promote eco-labeling of targeted export oriented fish to enhance the commercial value at international markets.	2015	BNF, CMA, MOCI	
		Establish a national competent laboratory at Mesurado for certification of fish.	2015	BNF, MOCI, MOH	
		Encourage the establishment of value addition enterprises at Mesurado and build capacity to meet international standards	2015	BNF, MOCI, MOH	
Create the enabling environment that provides timely information to private sector on fish prices at national and international fish markets		End of 2014	BNF, MOCI, NIC, LMA		
Establish curricula to provide training in business and marketing skills at the tertiary level to enhance capacity for fish trade at national and international levels.		2015	MOE, UL,		