

## LIBERIA

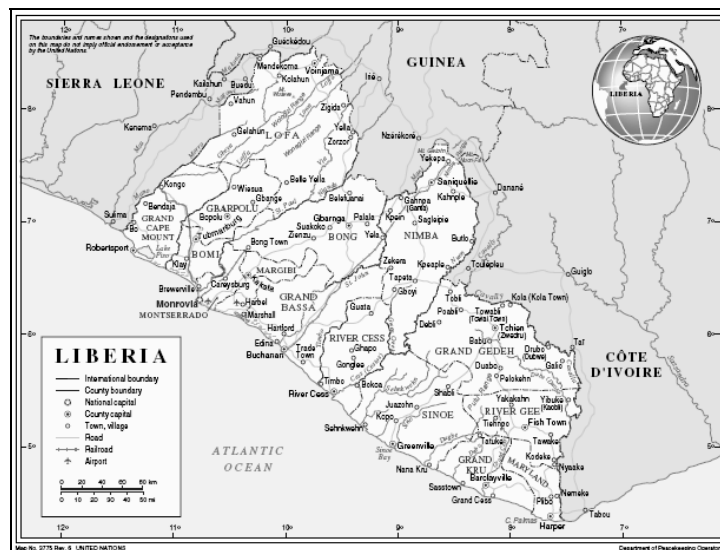
### 1. INTRODUCTION

This document is aimed at providing reference information on the present status (2007) of fishery information and data collection in Liberia for the discussion during the FAO FishCode-STF/CECAF/FCWC Subregional Workshop on the Improvement of Fishery Information and Data Collection Systems in the West Central Gulf of Guinea Region held in Accra, Ghana, in June 2007. The information contained in this document has been obtained from non published data from Bureau of National Fisheries (BNF) of the Ministry of Agriculture (MoA) of the republic of Liberia, the subsector report on fisheries for the comprehensive assessment of the agriculture sector in Liberia (Drammeh, 2007), FAO Liberia fisheries country profile 2004) and other documents from the FAO depository.

### 2. GENERAL INFORMATION ON LIBERIA RELATED TO FISHERIES

Liberia has a total land area of about 111 370 km<sup>2</sup>, of which 96 320 km<sup>2</sup> (86 percent) is dry land, drained by natural streams and rivers. The vegetation consists of forest and woodland (39 percent), pastures (2 percent) and arable land (ca. 36 percent).

With an Atlantic coastline of about 570 km, a continental shelf averaging of 34 km in width, affording an area of about 20 000 km<sup>2</sup> of fishing ground extending to 200 nautical miles.



Traditional fishers have operated along the Liberian coast and inland waters for centuries mainly at the subsistence level. Fishers were catching fish to feed their families and excess catches were bartered for other essential commodities and goods. The first attempt at commercial fishing in Liberia was in 1848 when the then President of the country, Joseph Jenkins Roberts, converted his yacht into a fishing boat. The first fishing trawler to operate in Liberian coastal waters belonged to Woerman Company, a German company that operated in the country between 1938 and 1939. Fishing was a daily activity with the trawlers returning to port at the end of each fishing day and catches were sold immediately to avoid post harvest losses because of lack of means for preservation of fresh fish.

Considering the success of the Woerman Company and the realization of the potential important role of fisheries in national socio-economic development, the Government of Liberia, in 1952, requested the assistance of FAO and the United States Government to help develop its fisheries subsector. Experts were sent from FAO and the United States of America to assess the fisheries potential of the country. As a result of months of exploratory fishing, it was established that a medium striving fishing industry could be established in the country.

Currently, fisheries are a key sector in the agricultural framework of Liberia as well as in the national economy. In 2002, fisheries contributed to 12 percent of agricultural GDP and 3.2 percent of the national GDP. Fisheries play a key role in the livelihoods of the coastal population and directly employ about 33 000 people using about 3 500 small vessels (canoes).

### **3. STRUCTURE OF THE FISHERIES SECTOR**

Liberian fisheries comprise three main components:

- marine fisheries, involving industrial and artisanal activities;
- inland fishery, mainly artisanal; and
- aquaculture, through fish farming.

#### **Marine fisheries**

The marine fisheries sector in Liberia is usually categorized into two subsectors: i) industrial and ii) small scale (or artisanal) fisheries. Of these the small scale fisheries subsector is the most important with respect to landed weight and remains the largest producer of fish for domestic consumption.

#### ***Industrial fisheries***

The industrial fishery began in the mid-1950s and targeted mainly the shrimp resources within the Sherbro fishing grounds, which extends into Sierra Leone. The Mesurado Group of Companies became operational in the early 1960s and developed into the most dominant force in Liberian fisheries. The company owned and operated more than 25 vessels, including shrimpers and double rigged trawlers. The company was owned by the Tolbert family and operated its own harbour and processing facilities with 3 000 tonnes of freezing capacity. Shrimp was the company's major export commodity, with a monthly shipment of about 60 tonnes to Europe and Asia. The Mesurado Group of Companies is said to have been one of the largest fishing entities in sub-saharan Africa until 1980 when she began to decline following the military coup.

In 1985, 8 companies registered 19 stern trawlers. As a result of a Free Enterprise System, up now about 30 rigged side and stern trawlers have been registered annually within the industrial fleets. About seven companies have survived, despite war and difficult conditions.

Foreigners companies presently dominate the industrial fishery. There are currently fourteen (14) fishing companies operating legally in Liberia; 6 companies are solely engaged in the importation of frozen fish from the high seas and 8 companies are engaged in industrial fishing activities operating 27 fishing vessels with a combined gross registered tonnage (GRT) of 4 122 tonnes. The fishing vessels operating in Liberian waters range in size from 91 GRT Chinese pair trawlers (ice carriers), to 251 GRT fishing trawlers with onboard freezing, processing and storage facilities. Industrial fishing vessels land their catches at the fishing pier in the Free Port of Monrovia. The level of employment for Liberian nationals in industrial fisheries is 61 percent representing 17 percent of the total employment in the fisheries subsector.

The catch of the industrial fishery was about 470 tonnes in 1971 and increased steadily to about 3 000 tonnes in 1978. After 1980, the industrial finfish catch and the finfish landed by Liberian fishing companies has fluctuated between 4 500 tonnes and 9 000 tonnes respectively.

Fish landed locally by all licenced trawlers is estimated as 1 500 tonnes and 2 800 tonnes for 2004 and 2005 respectively (BNF, 2006). These figures are grossly misreported and there is strong suspicion that a number of licenced industrial fishing vessels are engaged in illegal transshipments in the high seas and these are not reflected in the national statistics. Further should be realized that the annual catch within the exclusive economic zone (EEZ) of Liberia is much higher as poaching is rampant due to the complete lack of monitor, control and surveillance (MCS).

Available data on fish export is unreliable as trade is usually carried out on sea, thus depriving government of maximum benefits from the fish trade. Nearly all shrimps are processed and frozen for export abroad. The Government of Liberia encourages the reservation of finfish for the domestic market, but small quantities are exported. Liberia imports substantial of whole frozen fish (Table 1).

**Table 1: Reported landings, imports and exports from Liberia since 1995**

Year	Landings (tonnes)		Exports (tonnes)	Imports (tonnes)
	Industrial	Artisanal		
1995	1 675	3 460	91	2 196
1996	1 104	2 036	2	2 540
1997	2 016	2 519	2	2 547
1998	3 071	3 757	3	2 560
1999	4 394	7 078	8	2 523
2000	5 314	7 742	32	3 770
2001			69	1 904
2002			151	1 150
2003			83	2 624
2004	1 502	7 773		1 219
2005	2 806			1 139

Mesurado's success within the harvesting sector was quickly followed by the installation of shore-based infrastructure, including cold stores, a dry dock and associated repair and maintenance shops. The old Mesurado complex included 5 000 tonnes of freezer capacity, an 18-tonnes-per-day blast freezer, a 2 000 tonnes cold store and processing equipment, but was completely destroyed as a result of the civil war. Currently, there are about 32 cold rooms in Monrovia with a total capacity of about 18 000 tonnes.

#### ***Artisanal fisheries***

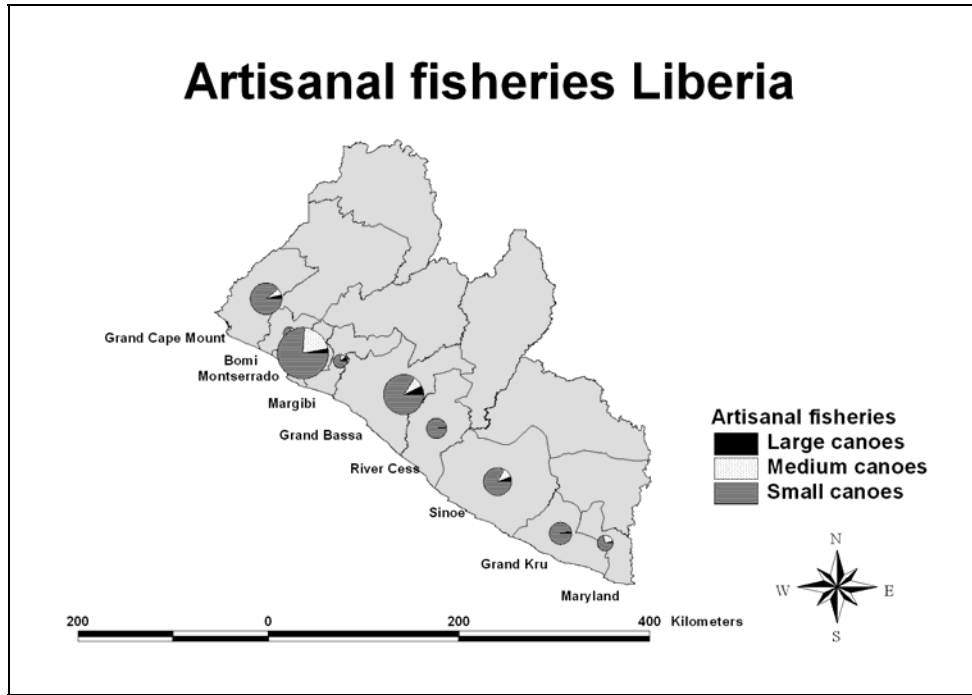
Indigenous Kru fishermen, Fanti and Popoe fishermen (and their families) who migrated from the neighbouring countries of Ghana, Benin and Côte d'Ivoire are presently the major actors in the artisanal fishery. There have been recent arrivals of Gambian and Senegalese fishermen who are presently operating in Cape Mount County. Artisanal fisheries is dominated by the Fanti and Popoe fishers as they own and use the larger motorized fishing canoes and employ more sophisticated fishing nets and fishing techniques and, as a result, catch more fish per trip than the indigenous Kru fishermen.

The indigenous Kru fishermen fish with 1-3-person crews from small dug-out canoes of about 7 m, powered by paddles or sail. Some are now powered by 7 hp outboard engines. Their gear are mainly hook and line and occasionally gillnets are used.

Fanti fishermen, of Ghanaian descent, residing in Liberia since the 1920s (Marquette *et al.*, 2002), utilize larger canoes, 12 m, powered by 25-50 hp outboard engines, with crews as large as 15. Their gear is more sophisticated. Ring and purse nets are used for small pelagic species, with large gillnets specifically adapted for different species and seasons also employed. The Fanti are responsible for about 40 percent of the volume of artisanal landings, before the war in Liberia, Fanti fishermen were responsible for 90 percent of the country's artisanal fish catch.

Another group, the Popoh, specialize in the use of beach seines 200 to 800 m in length, which are primarily used for catching silverfish (*lepisma saccharina*).

About 13 000 fishers and 18 000 fish processors (mongers) and their families live in 139 communities in coastal counties. Together they operate 3 470 canoes of which 8 percent are motorized (Drammeh, 2007) and the largest number of canoes are operating in Montserrado and Grand Bassa County (Figure 1).



**Figure 1: Distribution of artisanal fishing canoes in the marine counties of Liberia (size of pie reflects total no. of fishers)**

The annual reported landings for the artisanal sector ranges from 2 000-7 700 tonnes/year with an average landing of about 1.5<sup>1</sup> tonnes per canoe per year.

#### Main resources and fisheries of the marine subsector

Fishery resources in Liberia can be classified as:

- small pelagic species (Clupeidae [Sardinellas] and Engraulidae [anchovies]);
- large pelagic species (Scombroidei [tuna-like fishes]); and
- demersal species of the families Sparidae, Lutjanidae, Mullidae, Pomadasyidae, Serranidae, Polynidae and Penaedae.

The fisheries resources are targeted by different types of fishing (operational units) and a summary overview is presented in Table 2.

**Table 2: Summary of fisheries in Liberia**

	Industrial	Fante canoes			Popoh	Kru Canoe	
Number	30-40	270			?	3 150	
Gear type	Trawl	Ring net	Gill/Set net	Hook and Line	Beach seine	Traps	Hook and Line
Main target species	Penaeid Snappers	Herring Flying fish	Tuna Sail fish	Crookers Caranx Groupers	Herring Needlefish Poorjoe Gbapleh	Lobster Crabs	Barracuda Pike fish Snapper

#### Inland fisheries

Liberia is cut by six major rivers, which flow from the Fouta Djallon Mountains of Guinea. The Lofa, St. Paul, St. John and Castos are within the country. The Mano River forms the border with Sierra Leone and the Cavalla runs along the southern border with Côte d'Ivoire. In total, the country has some 1 800 km of river, nearly all of which is shallow, rocky and not navigable. There are also

<sup>1</sup> Irrespective of the type of canoe.

large swamp areas and numerous coastal lagoons, including Lake Piso, one of West Africa's larger lagoons. Estimates of production from these sources are not available.

The value of Inland fishery is not known but it is an important seasonal subsistence activity, using mainly traditional fishing gears and traps. Almost every girl above the age of 15 and women in the villages have fishing nets and are engaged in catching fish in rivers and creeks during the dry season. Traditionally one of the major training girls under go is the manufacturing of fishing nets.

About 600 fishers and 925 fish mongers and their families live in 16 fishing communities along the larger water bodies in the counties of Bong, Lofa, Nimba, Grand Gedeh, Gbarpolu and the River Gee.

### **Aquaculture**

Aquaculture development began in the 1950s at the Central Agriculture Research Institute (CARI). By 1989, more than 900 fish ponds had been developed throughout the country and stocked with fingerlings. However, the sector remained underdeveloped. The subsector utilizes simple technology with subsistence earthen ponds. Three main species (*Oreochromis niloticus*, *Heterobranchus* spp., *Clarias* spp. and *Tilapia* spp.) are cultured either in a poly- or monoculture system. There are about 3 500 fish farmers distributed throughout the country in 159 communities, with a total area of 21 ha. Pre-war production levels were around 35 tonnes, which declined to 22 tonnes in 2000 to rise again up to 39 tonnes in 2004.

## **4. FISHERY POLICY AND MANAGEMENT OBJECTIVES**

### **Legal framework for fisheries**

The institutional framework for the management of the fisheries resources is the Bureau of National Fisheries (BNF), within the Ministry of Agriculture. BNF was established through an act of legislation in 1956. In 1972, FAO assisted the Government of Liberia to revise the Natural Resources Laws of 1956 but Presidential approval was not obtained up to the time of the Coup d'État in 1980. In March 1999, draft fisheries legislation was prepared but has not been finalized and approved by Government.

### **National policy and management objectives**

There has been no Government fisheries policy for over a decade because of fourteen years of civil war, which ended in 2003 during which period the concerned Government institutions were not able to function properly.

The Government of Liberia is in the process of formulating national fisheries and aquaculture policies and strategies and will strengthen the country's maritime and fisheries laws, regulations and capacity to ensure sustainable management and development. Fisheries management will be geared towards the attainment of subsectoral development policy objectives such as: contribution to national food security and improved nutritional standards, creating employment opportunities and poverty reduction particularly in rural communities, improving incomes and quality of life and revenue and foreign exchange earnings for the country.

The policy will address the following: the development of the requisite infrastructures for industrial and artisanal fisheries and aquaculture development; improve monitoring, control and surveillance; capacity building and man power development; community capacity building and co-management; conduct scientific research and data and information collection and analyses on a regular basis; promote subregional, regional and international cooperation in fisheries management. Government will create the enabling environment for local and foreign investments in fisheries and aquaculture by reviewing the investment code and putting into place appropriate provisions including an incentive package.

The Code of Conduct for Responsible Fisheries will guide the national policy and relevant sections/provisions of the Code will be incorporated in the national fisheries legislation.

## 5. STATUS OF CAPTURE FISHERIES REPORTING

### Fishery statistics reported to FAO

The national statistics as reported to FAO are presented in Figure 2.

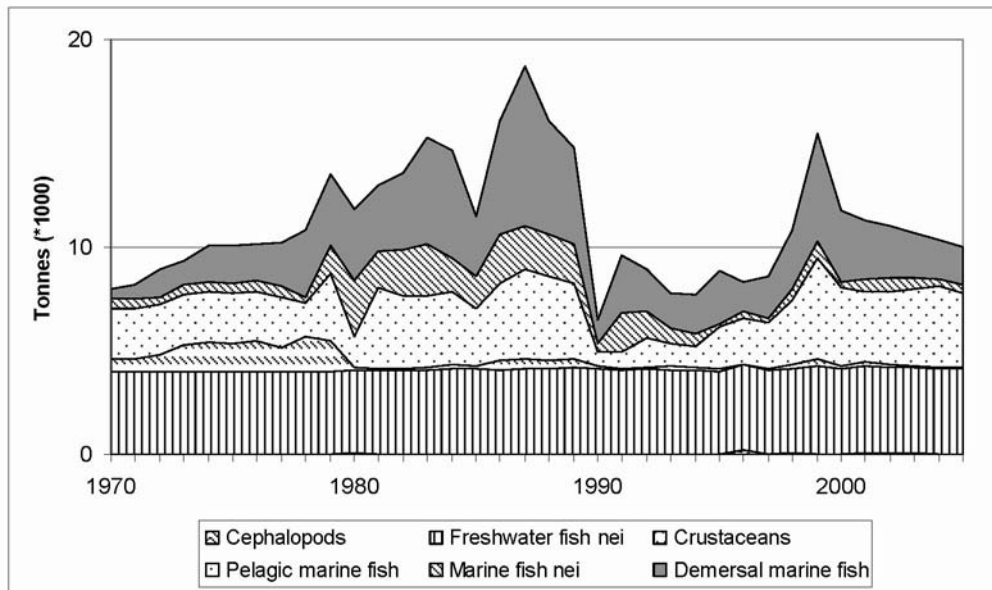


Figure 2 : Fisheries statistics as reported by Liberia to FAO

The production of Liberia fluctuates between 8 000-16 000 tonnes. Production of inland fisheries is a guesstimate. In the 1990s the production reported decreased considerably, mainly as a result of the conflict which resulted in a lower coverage of fisheries monitoring and sometimes reduced fishing activities.

### National reporting

A national fisheries statistical bulletin has never been established in Liberia.

## 6. DESCRIPTION OF FISHERY INFORMATION AND DATA COLLECTION SYSTEM

### Objectives of fishery data collection

The main objective of fisheries data collection in Liberia are not yet clearly formulate in relation to management purposes and are currently geared towards estimation of total catch, value and export.

Objectives	Required indicators and variables
To ensure availability of fish as a source of protein for the Liberian population	Total fish production, population, fish consumption per capita, fish imports, fish exports, fish cold storage volume
To determine the volume of fish imports to ensure sufficient fish protein available to national population	Total fish production, population, fish consumption per capita, fish exports, fish cold storage volume
Economic improvement of the fishing communities	Population, income per capita

### Main institutions involved in fishery data collection

#### *Bureau of National Fisheries (BNF)*

The Bureau of National Fisheries (BNF) of the Ministry of Agriculture, established in the 1950s is the lead governmental agency responsible for fisheries data collection.

In April 2007 the BNF hired the services of 65 contractual inspectors and assigned them to vessels and landing sites. The minimum requirement was high school graduate. We were able to hire about 20 college students and about 5 college graduates.

**Table 3: Permanent staff and qualification currently employed by BNF**

Qualification	MsC	BsC	AA	Dip and Cert	High school	Below high school
No	2	2		1	18	2
Speciality	Fisheries and agronomy	Management	Aquaculture and education	Marine safety		

***Bureau of Inspection Valuation Assessment and Control (BIVAC)***

The Bureau of Inspection Valuation Assessment and Control (BIVAC) is a commercial company which provides assistance to the Liberian Customs authorities and the Ministry of Trade in implementing international trade through Pre-Shipment Inspection (PSI) and Verification of Conformity (VoC). In this respect it is a major institute collecting data on import and export of fisheries products.

***National bureau of statistics/LIGIS***

The National bureau of statistics, was a part of the Ministry of Planning, but became autonomous in 2006 by an Act of Legislature. Its mandate is to conduct census and all related functions. The last official census of Liberia was done in 1985. The next census is due March 2008. Already plans are underway to conduct this census. There has been no national statistical bulletin published since the last census.

## **7. DATA COLLECTION SYSTEMS AND THEIR COMPONENTS**

**BNF Marine fisheries monitoring system**

The BNF was established in 1950s but it could not be traced when fisheries data collection by BNF started. According to Mr Momo Johnson, the oldest staff member of BNF data collection was already established in 1982. From 1982 till 1990 data on industrial landings were collected by fish inspectors at the pier in Monrovia and data on artisanal catch was collected from all counties, also by fish inspectors. In 1990, due to the civil war, data collection on artisanal catch in all counties except Montserrado, Cape Mount and Bassa and industrial monitoring in Monrovia collapsed. In 2003 all data collection came to a halt completely, the BNF office was looted and all archives and data/reports were destroyed.

After the peace accord in 2003 and improvement of security and stability in the country, data collection started again in 2004 for industrial landings on the pier in Monrovia and on a limited scale in Montserrado, Cape Mount and Bassa county. Since 2006 the BNF is making serious progress in re-establishing the old data monitoring system again and currently 62 fish inspectors are employed on contractual basis for collection of data (Table 4).

The past and now revitalized system is based on complete enumeration of all artisanal canoes.

***Marine Licence registration for industrial vessels***

Since 1992 all industrial vessels fishing in the EEZ of Liberia have to register at BNF and obtain a fishing licence. The licence fee depends on the size of the vessel (GRT), the target species and the type of operation/gear. For the licence the following characteristics of the vessels are registered:

- Licence number
- Name fishing company/owner
- Name of the vessel
- Flag state
- Tonnage
- Engine capacity

- Crew (number of persons)
- Storage capacity
- Gear use
- Target species

The fishing licence register of BNF is maintained in a spreadsheet.

Currently about 35 industrial fishing vessels, all with foreign owners are licenced by BNF.

**Table 4: Number of contracted fish inspectors in 2006 and 2007**

County	Sector	No. of fish inspectors					
		Industrial		Artisanal		Total	Total
		2006	2007	2006	2007	2006	2007
Bassa	Marine			1	3	1	3
Rivercess	Marine			1	1	1	1
Sinoe	Marine				1		1
Maryland	Marine				1		1
Montserrado	Marine	7	40	3	22	10	62
Grand Kru	Marine				1		1
Bomi	Marine				1		1
Cape Mount	Marine			1	3	1	3
Margibi	Marine				2		2
Bong	Inland			1	1	1	1
Lofa	Inland				1		1
<b>TOTAL</b>		<b>7</b>	<b>40</b>	<b>7</b>	<b>37</b>	<b>14</b>	<b>77</b>

#### ***Marine industrial landings monitoring***

Since 2004 the landings of all licenced industrial vessels at the pier in Monrovia is monitored by fish inspectors of BNF.

The inspectors provide the vessel records to the statistical unit of BNF, after which the data are entered in a spreadsheet. The recorded data are used to calculate the annual landings per species or group of species for the licenced industrial fleet. A major bottleneck of this monitoring component is that it does not register the total catch of the industrial vessels in the EEZ of Liberia as:

- IUU fishing is rampant.
- The licenced vessels transship at sea.
- Some catch it landed in Guinee Conakry due to taxation of landings in Liberia.

#### ***Marine industrial fisheries observers programme***

Due to the shortcomings of the industrial landings monitoring in 1997 BNF started with an on board observer programme for the licenced industrial fishing vessels. Currently on 32 of the 40 licenced vessels there is an observer on board to register the actual operations and catch. The observer registers the following on board of the vessel:

- Fishing area.
- Duration fishing trip.
- Number of fishing operations.
- Catch by species or group.
- Discards.

Data of the observer programme are entered by BNF in a spread sheet.

#### ***Marine artisanal frame survey***

The newly recruited fish inspectors record numbers and basic characteristics of the artisanal fishing vessels of their landing site/fishing community. There are no standard record sheets and the information is basic: Type of canoe, length and name, crew, gear use.



Further a number of donor-funded projects in the different counties have collected data on the artisanal fishing fleet which has been compiled by BNF and FAO consultants. Since 2006 BNF is planning the execution of a proper frame survey, covering all counties, landing sites and artisanal vessel. Due to lack of funds the frame survey has not yet been implemented.

#### ***Marine artisanal fishing licence registration***

Since 2006 BNF is implementing an artisanal fishing licensing system. All artisanal vessel operators are obliged to obtain a fishing licence from BNF. For the licence system the following data is collected from the vessel/canoe owners:

- Name of the owner
- Vessel/Licence number
- Canoe type
- Canoe length
- Fishing gears used
- Fishing community
- BNF finalize

The licence data are end by the fish inspectors to BNF where they are entered in a spreadsheet. The system has never worked due to non cooperation of the canoe owners.

#### ***Marine artisanal landings survey***

In 2004 the Marine artisanal landings survey was re-established at a limited scale and all efforts are undertaken by BNF to establish a full coverage of all counties with marine artisanal fisheries. In 2006 and 2007 new fish inspectors were recruited and trained. Currently 62 fish inspectors are employed on contractual basis and their main job is to collect catch data of the artisanal fleet in the different countries (Table 4).

#### **BNF ad hoc surveys**

##### ***Nansen programme***

Staff of BNF is involved in the Nansen programme.

#### **National Bureau of Statistics-Customs office**

##### ***Import and export registration***

In the past the National Bureau of statistics was responsible for reporting the annual statistics on import and export of fisheries products in Liberia. The past system was based on customs declaration form. For a number of years the NBS has not published an annual statistical report. Currently the NBS is functioning again and an annual report is expected in 2008. Currently import and export data for fisheries products are collected and published by BIVAC.

##### **BIVAC import – export monitoring**

Currently BIVAC is the actual institution in Liberia monitoring all imports and exports of goods.

##### ***Fisheries import monitoring***

In order to import fisheries products an Import Declaration Permit (IDP) has to be obtained from the Ministry of Finance. The IDP has to be submitted to the Ministry of Commerce, an invoice will be prepared and bank payment is required. After this BIVAC prepares a claim report for funding which goes to the Ministry of Finance and import can take place. BIVAC registers and this process carefully and uses an extensive coding system for the different fisheries products. All import data are stored in a special designed database system and monthly reports are prepared and disseminated.

##### ***Fisheries export monitoring***

In order to export fisheries products first a Export Declaration Permit (EDP) has to be obtained from the Ministry of Foreign trade. This is provided to BIVAC who will arrange quality inspection. The inspection reports are sent to BIVAC where it is analysed and permission for export is provided. BIVAC registers and this process and uses an extensive coding system for the different fisheries products. All import data are stored in a special designed database system and monthly reports are prepared and disseminated

## **8. DOCUMENTATION**

**Drammeh, O.K.L.** 2007. Fisheries and aquaculture policy of Liberia. Draft final report. September 2007. 36pp.

**FAO.** 2004. Liberia fisheries country profile.

**Marquette, C.M., Koranteng, K.A., Overå, R. and Bortei-Doku Aryeetey, E.** 2002. Small-scale fisheries, population dynamics and resource use in Africa: the case of Moree, Ghana. *AMBIO: A Journal of the Human Environment* 31(4): pp.324–336.