

Small-scale (artisanal) fisheries in Sierra Leone

Kamara Kadiatu

Ministry of Fisheries and Marine Resources

Background

The small-scale fisheries in Sierra Leone is dominated by men. Women have important roles along the value chain, including in post-harvest operations, all the way to being financiers and boat owners. The sectors include approximately 18 000 artisanal fishermen and over 11 000 fishing canoes. Local Ghanaian types of canoes operate in the area; they are either dugout or plank with an onboard engine of 8-40HP. The sector is characteristically labour intensive, using mostly traditional methods of fishing. However, some small boats are mechanized with traditional fishing gear, such as gillnets, cast nets, beach seines, purse seines, ring nets, traps and hooks and hand collection method. The artisanal fisheries account for about 80 percent of the total marine fish landings. In the year 1982, the total marine artisanal production was about 35 000mt with more than 70 percent consisting of small coastal pelagic species. The catch of the artisanal fisheries mainly consists of small pelagic species (Sardinella and Ethmalosa).



Figure 1. Small scale (artisanal) fisheries in sierra leone.

Source: The Artisanal Fisheries Management Plan for Sierra Leone EAF NANSEN project in the Ministry of Fisheries and Marine Resources, Sierra Leone.

1. DESCRIPTION OF THE SMALL-SCALE FISHERY

The Ministry of Fisheries and Marine Resources has its mission to plan, develop, rationally manage and conserve all living aquatic resources of the country for the benefit of the country. The overall policy of the ministry aims at promoting the attributes of good governance in sustainable fisheries management, combating illegal fishing, promoting economic value addition to the fisheries, and augmenting marine fishery production through sustainable development of aquaculture and inland fisheries, consistent with the Agenda for prosperity.

Sierra Leone is endowed with abundant and diverse fish resources in its marine sector. These resources are found along the entire coastline. The coastline is continuously replenished with rich nutrients by a series of rivers emptying into the continental shelf, thereby making the richest in the sub-region. The exploitation of the Marine fisheries resources is divided into the following sectors;

- The Marine Industrial Fisheries and
- The Marine Artisanal Fisheries

The industrial sector is mainly export-oriented, with 30 percent of its catch landed for local market sales. The marine artisanal exploitation is carried out by local individual fishermen residing along the coastline of the country. It also provides a significant source of employment and livelihood in Sierra Leone. More than 80 percent of the population depends on fish for animal protein, and the bulk of this fish comes from the artisanal sector. Over 120 000 metric tons of fish are produced yearly by the artisanal sector, thus contributing immensely to the enhancement of livelihood in coastal communities. Women are actively involved in the processing and marketing sector. As stated in the national framework (MFMR/IMBO 2003), approximately 75 percent of post-harvest workers are women, 85 percent of which are processors (World Bank survey 2010).

Artisanal Fishery is a major activity in the coastal communities of Sierra Leone. There are more than 11 000 boats used in the artisanal sector, with over 750 landing sites all over the country. It is of paramount socio-economic importance to the country as it provides employment and income to the rural youth, women etc. and, above all, because 80 to 85 percent of fish comes from this sector.

Therefore, the sustainable development and management of the Marine fishery resources could be ensured through capacity building of the sector by way of:

- Introducing improved and appropriate technology and techniques and
- Rational management of the resources through efficient extension delivery services



Figure 2. Standard 5-10 canoes in Sierra Leone.

Source: Switsalone online News Media.



Figure 3. Women engaging in fish processing.

Source: Value chain analysis and the role of women in the artisanal fisheries sector in Sierra Leone (Ranita Sandi Koroma, 2017).



Figure 4. Women doing primary processing on Herring.

Source: Artisanal Fisheries Management Plan for Sierra Leone EAF NANSEN project in the Ministry of Fisheries and Marine Resources, Sierra Leone.



Figure 5. Ghana type boats, used by local and migrant fishermen in Sierra Leone.

Source: Artisanal Fisheries Management Plan for Sierra Leone EAF NANSEN project in the Ministry of Fisheries and Marine Resources, Sierra Leone.

2. IMPROVED AND APPROPRIATE TECHNOLOGY TECHNIQUES

Fishing techniques include hand-gathering, spearfishing, netting, angling and trapping. Recreational, commercial and artisanal fishers generally use different techniques, but sometimes they use the same techniques. Recreational fishers fish for pleasure or physical activity, while commercial fishers fish for profit. Artisanal fishers fish for survival or as cultural heritage; they use traditional, low-tech methods. Mostly, recreational fishers use angling methods, and commercial fishers use netting methods.

There is an intricate link between various fishing techniques and knowledge about the fish and their behaviour, including migration, foraging and habitat. The effective use of fishing techniques often depends on this additional knowledge. The appropriate techniques to use mainly depend on the target species and their habitat.

3. CHALLENGES

Albeit the vibrant nature and prospects of the artisanal fisheries sector, this presentation highlights the challenges that require urgent management attention before they impede on the development of the sector. These challenges include, for instance, Illegal Unregulated Unreported (IUU) fishing, poor management of Marine Protected Areas, deforestation of mangroves, the licensing of artisanal canoes as fishing crafts and attendant gears.

Some important target fish species in the artisanal fishery, such as *Sardinella Spp* (herring), *Ethmalosa fimbriata* (bonga shad), are either fully exploited or over-exploited. There is also a growing use of illegal fishing gears in the artisanal fisheries sector including the use of undersized mesh nets, such as beach seines, and other gillnets catching juvenile fishes, which could be necessary to recruit and form the next breeding population.

Fish is the main source of animal protein for over 90 percent of the Sierra Leone population, and the fisheries sector contributes 10 percent to the country's gross domestic products (GDP).

Sierra Leone has a comparative advantage in West Africa, hosting high fish biomass of Shrimps, Demersal Finfish, Pelagic and Tuna Fishery with Potential Yields for the Small Pelagic of about 100 000mt. The country's marine ecosystem benefits by the Guinea Current Large Marine Ecosystem and the Canary Current Large Marine Ecosystem (CCLME) that flow with nutrient-rich waters supporting large quantities of demersal and shared small pelagic fish stocks (Figure 6 and 7).

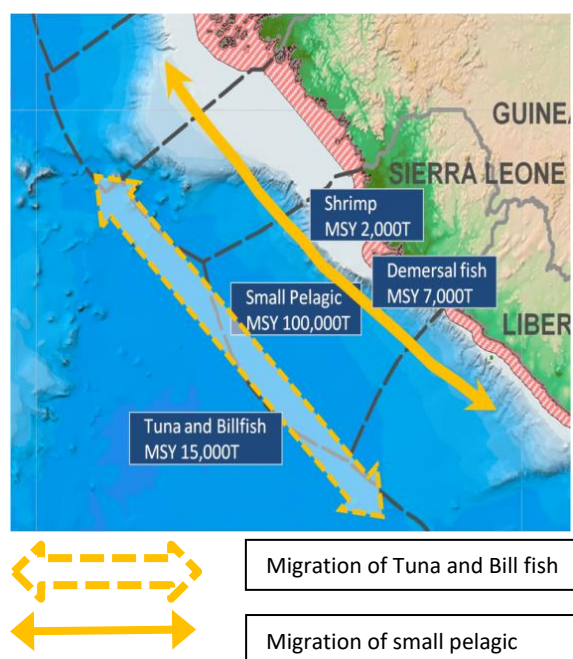


Figure 6 The Guinea Current Large Marine Ecosystem and the Canary Current Large Marine Ecosystem.

Source: Artisanal Fisheries Management Plan for Sierra Leone EAF NANSEN project in the Ministry of Fisheries and Marine Resources, Sierra Leone).

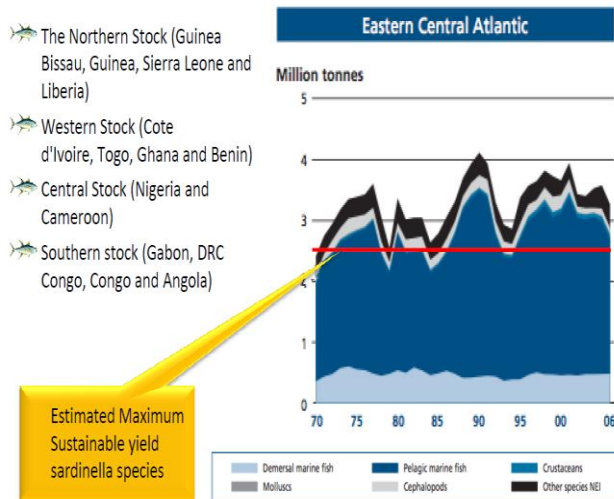






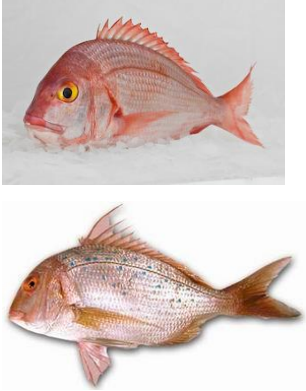




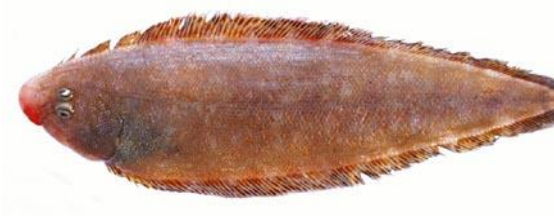
Figure 7 The stock status in the Eastern Central Atlantic.
 Source: Switsalone online News Media.

Exploitation Status of Major Fish Stocks

Fish stock assessments have been conducted by FAO/CECAF demersal, and pelagic working groups and the Institutional Support for Fisheries Management (ISFM) Project showed that some of the commercially exploited fish stocks in Sierra Leone are either fully exploited or overexploited (Table 1).

Table 1. Status of Major fish stocks in Sierra Leone.

Fish Species	Status	
<i>Pseudotolithus elongatus</i> (Bobo Croaker)	Overexploited	
<i>Pseudotolithus Spp</i> (Other Croakers)	Fully Exploited	
<i>Galeiodes decadactylus</i> (African Threadfin)	Fully Exploited	
<i>Arius spp</i> (Sea catfish)	Overexploited	

Sparidae (Denex and Sea Breams)	Overexploited	
<i>Sardinella aurita</i> (Round Herring)	Fully Exploited	
<i>Sardinella maderensis</i> (Flat Herring)	Overexploited	
<i>Ethmalosa fimbriata</i> (Bonga Shad)	Overexploited	
<i>Pomadasy Spp</i> (Grunts)	Overexploited	
<i>Cynoglossus Spp</i> (soles)	Overexploited	

Source: the Artisanal Fisheries Management Plan for Sierra Leone EAF NANSEN project in the Ministry of Fisheries and Marine Resources, Sierra Leone.

This revised fisheries policy and operational framework of 2010 has management objectives for the artisanal fishery. There is an operational management framework for shared small pelagic fish stocks and other fish stocks, which calls for cooperation and concerted effort in the management of fish stocks exploited in the sub-region by West African countries.

4. WAY FORWARD

While Illegal Unreported and Unregulated fishing in the small fisheries is a global problem, Sierra Leone artisanal fisheries need to structure an effective Monitoring Control and Surveillance scheme that will seek to provide good management of the sector.

Pursuing voluntary compliance in these situations might be the best option. It should occur in addition to a form of enforcement and monitoring of landing data, such as from enumerators at fish landing sites by the use of mobile phones via the cloud.

The introduction of new technology like the Automatic Identification System (AIS) can play an important role in monitoring vessel's movements and enhancing other management benefits such as safety, identifying the Marine Protected Area (MPAs) and Marine Spatial Area (MSP). Furthermore, protecting species that are overexploited requires good monitoring and surveillance measures that should be mandated and enforced through National Policies and Regulation.

The Vessels and the boats registration process should be more than just basic licensing formalities of marking and payment of fees; it should be a thorough process of inspection of gears size, safety condition of the boats and material, and if implemented tracking systems for monitoring and surveillance processes.



Figure 8. Prohibited fishing method (beach seine).

Source: Switsalone online News Media.

REFERENCES

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