



FCWC

Fisheries Committee for
the West Central Gulf of Guinea



REGIONAL FISHERIES MANAGEMENT PLAN

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LIST OF ACRONYMS AND ABBREVIATIONS

AEP	Fisheries Ecosystemic Approach
MPAS	Marine Protected Area
ECOWAS	Economic Community for West African States
CMA	Collaborative Management Association of Robertsport and its surroundings
CECAF	Eastern Central Atlantic Fishing Committee
FCWC	Fisheries Committee for the West Central Gulf of Guinea
SRFC	Sub-Regional Fisheries Commission (SRFC)
FAO	United Nations Food and Agriculture Organization
FDF	Federal Department of Fisheries and Aquaculture (Nigeria)
FMP	Fisheries Management Plan of Ghana
ICCAT	International Commission for the Conservation of Atlantic Tunas
IUU	Illegal, Unreported and Unregulated fishing (IUU)
MSY	Maximum Sustainable Yield
NEPAD	New Partnership for Africa's Development
PA	Artisanal fishing
PESCAO	Improving Regional Governance of Fisheries in West Africa
GDP	Gross Domestic Product
PNIASAN	National Plan of Agricultural Investments and Food and Nutrition Security of Benin
WARFP	Fisheries Program in West Africa
MCS	Monitoring, Control and Surveillance
TURFs	Territorial Use Rights for Fishing
AU-IBAR	African Union - Intermediate Bureau of Animal Resources
EU	European Union
WAEMU	West African Economic and Monetary Union (WAEMU)
EEZ	Exclusive economical zone

SUMMARY OF THE PLAN

The Fisheries Resource Management Plan is a FCWC initiative that provides a global, coordinated and regional response to the challenges and constraints faced by marine fisheries in the sub-region.

The diagnosis of the state of marine fisheries in the sub region covered by the FCWC as a whole reveals the existence of the following strong tendencies: i) an impoverishment of the main exploited marine fish stocks, outcome of the overexploitation of which they are subjected to and of the weakening of marine ecosystems particularly in the coastal zone; (ii) management systems that are still inadequate despite the significant efforts made in recent years by the sub-region States to improve the management of maritime fisheries (amplification of the fight against IUU fishing, updating and adaptation of the legal instruments of the region); management, reinforcement of sub-regional cooperation actions, etc.). Management measures in FCWC countries as a whole are not yet producing the desired effects and are still not effective in terms of impeding the cycle of overexploitation and expansion of fishing capacity. This is true given that all FCWC member countries are exclusive importers of fish and face increased deficits in their external financial records due to increased demand for fish, but also the loss of productivity of their marine fish stocks that reduce supply capacities

Faced with these constraints and challenges, national responses are insufficient and ineffective, as management issues have become regional concern and the need for cooperation between FCWC member states is vital, particularly for the following reasons: i) the existence of stocks shared among FCWC countries; (ii) cross-border mobility of fleets in the sub-region, especially small-scale fleets; (iii) the need to harmonize management measures given the interdependence and overlap of maritime fisheries of the sub region Countries; (iv) the need to develop a regional strategy for the conservation of fisheries resources and fragile ecosystems through the creation of marine protected areas whose expected benefits go beyond the maritime borders of a single State, etc.

The Fisheries Resource Management Plan get involved in this context and has the following as guiding framework: i) the legal and political instruments of cooperation within FCWC countries, materialized by conventions that will benefit some improvement from the Plan as it contributes to make them operational; (ii) regional and international fisheries governance policies and instruments to which FCWC countries have subscribed, including: the EU's Policy Framework and Reform Strategy for Fisheries and Aquaculture The FAO Regional Fishery Program and the WAEMU Fisheries Guidelines, the FAO Code of Conduct for Responsible Fisheries, the FAO Voluntary Guidelines for Securing the Sustainability of Small-Scale Fisheries on Food Security background, and the eradication of poverty (PA Guidelines).

The main objective of the Fisheries Resource Management Plan is to contribute to the improvement of food security and the economic and social welfare of FCWC member countries.

Specifically, the Plan aims to create the conditions for the sustainable management of the FCWC's marine fisheries by strengthening sub regional cooperation. Its areas of intervention reflect the need to set up a transition phase that will enable the sub-region marine fisheries regain their potential contribution to food security and wealth creation in the concerned countries.

The expected results corresponding to the areas of intervention of the Plan are, as follows:

1. Development, adoption and implementation of shared stock management plans in FCWC fisheries;
2. Harmonization of policies, laws and regulations governing marine fisheries;
3. Regulation of access to fisheries resources in artisanal fisheries;
4. Integration of Marine Protected Areas within Coastal Fisheries Management

The duration for implementation of the Regional Fisheries Resource Management Plan is 4 years. Its implementation period is 2019 - 2022.

Coordination for the implementation of the Regional Fisheries Resource Management Plan is ensured by the Executive Secretariat of the FCWC, which will benefit from this purpose with its institutional building capacity of technical execution.

The global cost for implementing the Regional Fishery Resources Management Plan is US\$ 5,391,840,000. Specific budget support will be required from Member States to ensure their self-financing share of the Plan estimated at 30% of the total budget. The leftovers of 70% will be sought from technical and financial partners including those engaged in funding programs and projects covering the same aspects as those executed by the Plan. These financial technical partners are

- ECOWAS under reinforcement of the regional fisheries organizations envisaged
- WAEMU under implementation of its Regional Fisheries Program
- The European Union as part of the PESCAO Project
- The World Bank under the PRAO Project

¹ Fisheries development. FAO Technical guidelines for responsible fisheries. N°4. Rome, FAO. 1999. 91 p.

I. Descriptive situation of fisheries in the FCWC cooperation zone

For the purpose of this document, the fishery is defined as “the sum of all fishing activities for a given resource, such as a fishery for hake or shrimp. It may also relate to activities of a single type or mode of exploitation of a particular resource, such as coastal seine or troll fishery” .

The Regional Fisheries Management Plan of the sub-region covered by the FCWC is based on this definition which makes it possible to determine the fishery components that constitute topics for descriptive presentation. These components, highlighted by the definition are, on the one hand, the marine fishery resources exploited within the EEZs of FCWC member countries, and on the other hand, the fishing activities relating to these resources, specifically the specialized exploitation segments within the exploitation of resources. The descriptive presentation thus addresses these both fundamental aspects of fisheries, namely the resources and the exploitation segments.

1.1 Evaluation and description of the main fisheries resources exploited in FCWC Member countries

Figure 1: Geographic area of FCWC (in gray)



The marine waters of the Gulf of Guinea are generally considered to be less rich in fishery resources compared to the northern part of the Eastern Central Atlantic Fishing Committee (CECAF), due to less favorable natural factors, notably the narrowness of the continental shelf and the low intensity of coastal upwellings.

However, these marine waters hide a great biological diversity with fishery resources exploited by small-scale, semi-industrial and industrial fisheries. The main categories of resources exploited fall into four main groups:

- Coastal pelagic resources (sardinella, anchovy, horse mackerel, jack mackerel, etc.);
- Offshore pelagic resources (tuna, swordfish, sailfish, etc.);
- Coastal demersal resources (dorados, groupers, red mullet, cuttlefish, shrimp, etc.);
- Deep demersal resources (deep-sea shrimps)

Coastal pelagics consist mainly of Clupeidae, Engraulidae, Carangidae and Scombridae. Among the most exploited clupeids species are the round sardinella *Sardinella aurita* and the flat sardinella *Sardinella maderensis*.

Scientific studies on the identity of the sardinella stock in the sub-region, carried out by the FAO / CEEAF Working Group, reveal the existence of four stocks for these two species in the southern zone of CEEAF, namely: the northern zone stock shared by Guinea-Bissau, Guinea, Sierra Leone and Liberia); (ii) the West Zone stock shared by Benin, Ivory Coast, Ghana, and Togo; (iii) the stock of the central zone shared by Cameroon and Nigeria and (iv) the southern zone stock shared by Angola, the Democratic Republic of Congo and Gabon). 3 stocks are thus of interest to the FCWC area, namely North, West and Central stocks. Among the other clupeidae present in the area, we note the shad or *shading shadows*, and the athmalose or *Ethmalosa fimbriata*, which as well lives in the estuary, in the lagoon as in the sea. Ethmalose is mainly fished by small-scale fisheries and is a species of high production in Nigeria. The CEEAF scientific working group distinguished four main stocks of ethmalosis: i) the northern stock shared by Guinea, Guinea-Bissau, Liberia and Sierra Leone, ii) the western stock shared by Benin, Ivory Coast, Ghana and Togo; (iii) the Central stock shared by Cameroon and Nigeria; and (iv) the southern stock shared by Angola, Congo, Democratic Republic of Congo and Gabon.

Engraulids are also an important coastal pelagic resource in the sub-region. They are represented by the common anchovy *Engraulis encrasicolus* abundant species especially when the waters are very cold. Anchovy is mainly fished in Ghana where tonnages landed are very important. The same occurs also in Togo and Benin. The Working Group considered the existence of a western stock which is shared by four (4) FCWC countries, namely Ivory Coast, Ghana, Togo and Benin.

The Carangidae exploited in the FCWC area are the black horse mackerel *Trachurus trecae* and the yellow horse mackerel *Decapterus rhonchus*. Spanish mackerel or *Scomber japonicus* is also strongly represented among the exploited pelagic resources. Other species are caught secondarily by coastal pelagic fisheries, including pelon or *Brachydeuterus auritus*, flat-plate or *Chloroscombrus chrysurus* (very common in Liberia), white carps or *Pomadasys jubelini* and *Pomadasys perrotteti*.

Coastal pelagic fish are the largest marine resources in landed tonnage. The dominant species in these landings are sardinella, which are shared stocks because of their migratory behavior. They represent respectively 60% and 90% of total landings in Liberia and Togo.

I.1.2 Offshore pelagic resources (tunas)

The offshore pelagic zone is distributed throughout the intertropical Atlantic, between the coasts of Africa and America. The EEZs of the FCWC countries are located on the migration path of the main Atlantic tuna species, hence the availability of tuna for fishing. The three main species of tropical tunas that are mostly present are yellowfin or *Thunnus albacares*, skipjack or *Katsuwonus pelamis* and bigeye tuna or *Thunnus obesus*. They account for more than 80% of the reported tuna catches. These highly migratory species are subject to international long-range fishing, which explains the presence of foreign tuna fleets in some FCWC countries, fishing under fisheries agreements. The largest of these fleets is the European Union present in Liberia and Ivory Coast. Within the FCWC, Ghana has the particularity of having developed a significant national tuna fleet that operates in its own EEZ and in the EEZs of neighboring countries.

Offshore pelagic resources also include other tunas and related species including tunas or *Euthynnus alletteratus*, skipjack or *Sarda sarda*, Atlantic mackerel or *Acanthocybium solandri*, and Atlantic sailfish or *Istiophorus platypterus*. These species are more coastal and generally constitute bycatch of industrial fishing. However, they are increasingly targeted by artisanal fisheries. To these species are added the blue marlin or *Makaira nigricans*, the Atlantic sailfish and the swordfish or *Xiphias gladius* which are related species.

I.1.3 Coastal demersal resources

The coastal demersal resources are located on the continental shelf, between 0 and 200 m deep, and include fish, crustaceans and cephalopods.

Coastal demersal fish

The identity distribution of coastal demersal fish stocks made within the CECAF Scientific Working Group led to the distinction of 3 subgroups in which FCWC countries are sharing:

- i) Northern sub-group 1 including Guinea, Sierra Leone and Liberia. The fish families widely present in the EEZs of these countries are of *Lutjanidae spp.* *Sparidae spp.* and *Pseudotolithus spp.* class.
- ii) Centrally located subgroup 2, which includes Ivory Coast, Ghana, Togo, and Benin. The endemic species listed by the CECAF Working Group are fried (*Brachydeuterus auritus*). Captains (*Galeoides decadactylus*), hawks, dentex and pageots *Sparidae spp.* as well as Otoliths (*Pseudotolithus spp.*).
- iii) Nigeria, which belongs to subgroup 3 with Cameroon, Equatorial Guinea and Sao Tome and Principe, hide an abundance of species of the *Pseudotolithus spp.* Family. The other

species caught belong to the *Sciaenidae*, *Polynemidae*, *Pomadasyidae* and *Cynoglossidae* families.

Crustaceans (coastal shrimps)

The main species of coastal shrimp is *Penaeus notialis*, whose abundance has been noted in the marine and lagoon water program of Benin, Ghana and Nigeria. Shrimp stocks are generally found at the mouth of lagoons and are caught by both industrial fleets (shrimp trawlers) and artisanal fleets.

Cephalopods

Cuttlefish (*Sepia spp.*) is the dominant species group. Relative abundance in Liberia and Ghana catches are observed.

I.1.4 Deep demersal resources

They are very little exploited and concern mainly crustaceans. It is essentially about deep-water shrimp (*Parapenaeus longirostris*). This species is mostly exploited in Nigeria by industrial fishing. Deep demersal fish are not exploited.

I.2 Evaluation and description of the main fisheries

The main categories of fisheries resources exploited in the maritime area of the FCWC countries structure 3 (three) major fisheries, the importance of which varies according to the country. These are:

- The coastal pelagic fishery
- The coastal demersal fishery
- The offshore fishery

These fisheries are inserted within national contexts that define their identity characteristics and the regulation system to which they are subjected. The presentation by country thus makes it possible to grasp the national peculiarities of each fishery.

I.2.1 The coastal pelagic fishery

Liberia

The fishery is mainly artisanal. The main farmers are the Fanti fishers of Ghanaian origin who use the purse seine as fishing gear. They usually operate with 12m canoes equipped with outboard motors of 25 or 40 hp and target small pelagic fish. These species are incidentally exploited by

other types of fishing units, including drifting gillnet and surface gillnets. All these fishing units operate in the 6 nautical mile zone (part of the EEZ which has been exclusively reserved for artisanal fishing activities).

Landings of small coastal pelagic fish account for 9027 tonnes in 2016, of which 8826 tonnes are attributable to artisanal fishing, id est 98% of total landings. Small pelagic species caught include *Sardinella spp.*, *Trachurus trecae*, *Scomber japonicus*, *Selene dorsalis*, *Ethmalosa fimbriata* and *Decapterus spp.*

The production of industrial fishing is marginal. It represents in 2016, about 201 metric tons or 2% of total landings.

Ivory Coast

In Ivory Coast, small pelagics are subjected to artisanal and industrial exploitation. For artisanal fisheries, the main exploitation segments are::

- Purse seine fishery: In 2016, the purse seine canoes represent a total of 273 canoes, or 17% of the pirogue fleet . Most of these are boats of Ghanaian origin. The target species are mainly Clupeidae which are mainly composed of sardine *Sardinella aurita* and herring *Sardinella maderensi*. Among the species caught secondarily by the purse seine are the razor shad *Ilisha africana*, Scombridae including the Spanish mackerel *Scomber japonicus*.
- Beach seine fishing: it is carried out on shallow grounds and has the reputation of being non-selective, capturing both pelagic and demersal species. Among the most commonly caught species are round sardinella, flat sardinella and ethmalose. About 113 pirogues, or 7% of the total fleet, are engaged in this fishery.
- Small coastal pelagic are exploited to a lesser extent by gillnet fishing with a very wide catch spectrum.

In 2016, artisanal fisheries landed 26 346 tonnes of coastal pelagics, accounting for 65% of the total landings of the fishery. 77% of this tonnage is sardinella. In addition to small-scale fishing, there is a large industrial fishery targeting small coastal pelagic, namely sardine fishing. The sardine fishery is carried out by 33 vessels that landed 14,059 tonnes in 2016. The landings are in order of importance, sardines *sardinella aurita* (9189 tonnes, or 65% of the total) followed by among other species: *Brachydeuterus auritus* Pelon or Fried *Pseudotolithus typus* Ombrina rosso *Chloroscombrus chrysurus* Flat-dish *Sardinella maderensis* herring.

² Source: WAEMU Survey Structure

Ghana

In Ghana, the coastal pelagic fishery includes a small-scale and a semi-industrial segment.

Within artisanal fisheries, pelagic resources are mainly exploited by two types of artisanal purse seines with differences in terms of mesh size: i) purse seine with 25 mm mesh locally called watsa; the seine with the 10 mm mesh called polished. The first is used from the beach, mainly along the estuaries.

- The purse seine fishery (watsa) has 4398 units and is the main segment of exploitation of coastal pelagics, including the round sardinella *Sardinella aurita* and the flat sardinella *Sardinella maderensis* as well as the Spanish mackerel *Scomber japonicas*, with peaks of noted during upwelling periods. Outside these periods, the purse seine units target the anchovy *Engraulis encrasicolus*.
- The beach seine fishery is composed of 1084 active boats: It targets both pelagic and demersal species at the juvenile and adult stage. Beach seines exploit sardinella in its adult phase during upwelling periods when these species move to the coast.
- Incidentally, there is a gillnet fishery conducted by 3729 vessels targeting adult small pelagic specimens (*Sardinella aurita* and *Sardinella maderensis*) and semi-pelagic species (pelota, otolith)

In 2016, total landings of coastal pelagic fish in artisanal fisheries amounted to 184 492 tonnes, of which 18% sardinella and 31% anchovy.

The semi-industrial fishery is a coastal fishery operating with vessels from 8 to 24 m equipped with inboard engines with an average power of 400 hp. In 2014, the number of vessels registered is 403. The semi-industrial fishing vessels operate both as purse seiners and trawlers depending on the fishing season. Purse seiners target coastal pelagics (*Sardinella aurita* and *Sardinella maderensis*, Spanish mackerel *Scomber japonicus*, horse mackerel *Carangidae*). In 2016, total landings of coastal pelagic fish in the semi-industrial fishery amounted to 11 315.6 tonnes consisting of 60% sardinella.

Togo

The main segments of coastal pelagic exploitation are artisanal and concern:

- The purse seine fishery: It targets small coastal pelagics including sardinella. It is mainly practiced by boats of Ghanaian origin. 81 active boats operate in this segment.
- Beach seine fishing: 54 boats use the beach seine. This gear targets small pelagics

including anchovies, sardinellas, jacks, etc.

- The surface gillnet: 33 fishing units have been recorded as practicing this type of fishing which mainly targets sardinella and herring.

In 2016, landings from the purse seine account for 90% of total landings, or 23,237 tonnes. The species composition of these landings shows a predominance of sardinella.

Benin

The coastal pelagic fishery is exclusively artisanal. The operating segments identified are:

- Purse seine fishing: 83 canoes exploit the stocks of Clupeidae: *Sardinella Sardinella aurita* and *Sardinella maderensis*, Ethmalose *Ethmalosa fimbriata*, Shavers *Ilisha Africana*, Carangids: Yellow mackerel *Decapterus rhonchus* spp), mackerel *Scomber japonicas* and *Scomberomorus tritor*, and, incidentally, *Pseudotolithus senegalensis*, bonito and tunas.
- The beach seine fishery: It is exercised by 55 canoes that exploit stocks of Clupeidae, Carangidae, mackerel and some demersal species at their juvenile stage.
- Drifting gillnet fishing: It is carried out by 67 canoes that exploit the stocks of Clupeidae, Carangidae, and incidentally the *Pseudotolithus senegalensis*, skipjack and tunas.

In 2016, total landings of coastal pelagic fish in artisanal fisheries amounted to 12,343 tonnes, or 75% of the total output of the Beninese marine fishery.

Nigeria

In Nigeria, the coastal pelagic fishery is mainly artisanal. Two main operating segments are identified:

- Purse seine fishing using 25mm meshes and targeting adult sardinellas, ethmalose, carangids and scombridae.
- Beach seine fishing using 10 mm mesh and targeting juveniles of sardinella, ethmalose, and anchovies.

Both types of gear operate in coastal waters. Beach seines are mainly used in lagoons and estuaries, and target adult sardinellas and anchovies and juveniles of *Sardinella spp.*, *Ilisha africana*, *Caranxspp* and *Ethmalosa*. Purse seine fishing is practiced on board vessels between 12 and 18 m in length and propelled by outboard motors of 25 to 40 hp.

Coastal pelagic fish account for about 60 percent of total landings in marine fisheries and are dominated by ethmalose and sardinella. They represent around 230 000 tonnes in 2015.

1.2.2 The coastal demersal fishery

Liberia

The coastal demersal fishery is mainly artisanal and is mainly practiced by local fishers. There is an undeveloped industrial component made up of ships from foreign nationality. Two Chinese-flagged coastal demersal trawlers operated in Liberian waters in 2016.

Boats that operate on the artisanal segment are not usually motorized and are propelled by paddles or sails. There are currently about 3000 boats operating in this fishery. They use a variety of fishing gear such as gillnets, beach seines, traps, hook lines.

In 2016, total landings of coastal demersal fisheries are estimated at 3,995.9 tonnes, with contributions from artisanal and industrial trawlers respectively of 3543.9 and 452 tonnes. In these landings, in order of importance, the small captain or thiekem (1099 tons), the Cassava fish (825.9 tons), the sole (664 tons) the machoiron (490 tons) the grouper (271 tons), the dentex (259 tons). Crustacean production is estimated at 241 tonnes in 2016.

Ivory Coast

The coastal demersal fishery has a small-scale component and an industrial component. For artisanal fisheries, the main exploitation segments are:

- Gillnet fishing: This gear captures both pelagic and demersal species. Catches are composed of small coastal pelagics (herring, horse mackerel) of demersal species and crustaceans (sole, grouper, sea bream, pageots, barracuda, umbrine, lobster). The fishery has about 675 boats and represents 42% of the pirogue fleet.
- Longline fishing using gear considered more selective and whose catches are mainly composed of sea bream, pageots, groupers, red carp. It has about 219 boats or 14% of the fleet.

In 2016, landings of small-scale fishing segments are estimated at 3,223 tonnes. The industrial segment represented by trawl fishing counts 42 licensed vessels in 2016. Its total landings amount to 8,417 tonnes and consist mainly of species such as: umbrine, cuttlefish, captain, sole, pageot; semi-pelagic species are also recorded in landings (*Brachydeuterus auritus* fried and *Sphyraena guachanco* pike).

³ CECAF Estimation

Ghana

The fishery has 3 components: i) a small-scale component; (ii) a semi-industrial component and (iii) an industrial component. The small-scale component comprises 2 segments:

- Angling by 1344 vessels targeting coastal demersal resources at 20 to 80 meters deep and located on hard bottoms. The main target species are Sparids (*Dentex* spp., *Pagrus caeruleostictus*), *Serranidae* *Epinephelus* spp. *Lutjanidae* (snapper). The boats used have bilges to hold ice and are capable of dealing with tides for several days.
- The gillnet fishery practiced by 3,729 boats. It targets adult specimens of small pelagics (*Sardinella aurita* and *Sardinella maderensis*), semi-pelagic species (pelons, otoliths) and coastal demersal species (red mullet, small captain or thiekem).

The total landings of the two artisanal fishery segments are estimated at 36,048 tonnes of coastal demersal fish. The semi-industrial component targeting coastal demersals consists of 403 multipurpose vessels (2014 assessment) that operate as both purse seiners and trawlers depending on the fishing season. Trawlers mainly exploit sparidae (*Dentex* *pagre* *pageot*). Total landings of semi-industrial fishing amount to 815.8 tonnes of coastal demersal fish.

The industrial component consists of 80 vessels in 2016, with an average length of 35 m and engines of more than 600 hp. In 2016, the landings of industrial trawl fisheries are estimated at 24,780.37 tonnes, mainly composed of species with high commercial value. About one-third of landings are sparid.

Togo

The coastal demersal fishery includes a small-scale component and a marginal industrial component. The exploitation segments of artisanal fisheries are:

- Bottomgillnet fishing: This segment contains the largest number of boats. 135 specialized canoes have been identified. These boats target groundfish such as luteans, sea breams, sole, crabs, prawns, etc.
- Shark net fishing: The net used is a drifting gillnet. 13 boats are specialized in this form of fishing, which takes place between July and September. These fishing units target sharks, swordfish, sailfish, tunas and skipjack. They are mostly of Ghanaian origin.
- Angling: 45 fishing units specialize in angling with peak activity between October and December. These units target demersals such as *luteans*, sea breams, pageots, groupers, etc.

Total landings of artisanal fisheries are estimated at 929 tonnes of coastal demersal fish. The industrial fleet is limited to a single trawler vessel targeting the coastal demersal resources (*merou*, *lutjanus*, sea bass, *pristipoma*, etc.). Its production is estimated at 76 tons in 2016.

Benin

The coastal demersal fishery is exclusively artisanal. It comprises two operating segments: The bottom-set gill net fishery (FMCF), comprising 478 specialized pirogues. The production of these fishing units is estimated at 5,026 tonnes in 2016.

- Angling with a total of 32 specialized pirogues. Production of these fishing units is estimated at 622 tonnes in 2016.

The resources exploited by these two segments are the small captains or thiekem *Galeoides decadactylus*, the sea bass *Pseudotolithus senegalensis*, the gray carp *Pomadasys spp*, the sparidae (dorados, dentex, pagres, pageot), the pelon *Brachydenterus auritus*, the snapper *Lutjanus vivanus*, the sole *Solea solea*, the gray grouper *Epinephelus aenus*.

Nigeria

The fishery includes a small-scale component and an industrial component. The artisanal fishing segments consist of line canoes and gillnets. The landed demersal fish species consist of *cynoglossidae lutjanus spp*, *galeoides decadactylus pseudotolithus spp*. and grunts. In 2015, artisanal fisheries landings are estimated at 164,142 tonnes based on the category breakdown ratios of marine production species adopted by the CEEFAC working group.

The industrial maritime fishery is composed of 2 segments: i) a coastal demersal trawl fishery with a total of 120 vessels in 2015 whose annual production is estimated at 10,727 metric tons; the main species landed are sole, groupers, captains, croakers, dorado etc. (ii) a shrimp trawl fishery consisting of 15 vessels in 2015 whose annual production is estimated at 4,737 tonnes including 4,286 tonnes of shrimp, what's left being bycatch, including coastal demersal fish.

1.2.3 Tuna fishery

Liberia

The tuna fishery is essentially industrial with operators from foreign nationality. The European Union fleet fishing under agreement is predominant. It includes in 2016, two (2) longliners (Spain), 20 purse seiners (France and Spain). Liberia also involves in fisheries agreements with other third part countries that exploit the tuna resource. These are: Cape Verde (1 purse seiner) Panama (2

purse seiners) Belize (2 purse seiners), Guatemala (2 purse seiners) Salvador (4 purse seiners) and Curaçao (5 purse seiners). Catches of the tuna fleet in the Liberian EEZ are not landed in Liberia.

In 2016, the total landings of the tuna fishery are estimated at 3515 tonnes with respective contributions of artisanal and industrial fishing of 390 tonnes and 3125 tonnes. Artisanal catches are not the result of targeted fishing. The landings are composed of 3257 tonnes of various tuna species, 122 tonnes of marlins and 136 tonnes of sharks mainly caught by the artisanal fishery.

Ivory Coast

The tuna fishery includes a small-scale component and an industrial component. Gillnet fishing is the main exploitation segment of small-scale fishing. The species caught are skipjack, yellowfin tuna, marlin and sailfish. The tuna species occupy the second place of tonnage landed by the artisanal fishery. They represent 25% of this tonnage. The industrial segment consists of: (i) Ivorian tuna longliners whose landings or transshipments amounted to 1,032.079 tonnes in 2016 and are divided as follows by species: albacore (451.686 tonnes) *Thunus Albacares* or yellowfin tuna (54.912 tonnes) bigeye tuna (473,399 tonnes), blue marlin (24,511 tonnes), swordfish (27,449 tonnes) sailfish (122 tonnes); (ii) the EU fleet fishing under agreement, with fishing possibilities for 28 tuna seiners and 10 surface longliners.

Ghana

The tuna fishery is industrial and exclusively national, unlike other FCWC countries. It is composed of bait boats and purse seiners, total number of which is estimated at 37 in 2016. All vessels are registered with the Ghana flag. It should be noted that the country's legislation allows for joint tuna fishing with foreign partners that may hold up to 50% of the capital. In 2016, tuna landings are estimated at 88 720 tonnes, consisting mainly of skipjack tuna (61,554 tonnes), yellowfin tuna (20,500 tonnes) and bigeye tuna (3,255 tonnes of bigeye tuna).

Togo

There is no specifically targeted tuna fishery in Togo.

Benin

The tuna fishery in Benin is mainly industrial and foreign. In 2016, the fishery has 14 tuna vessels including 3 purse seiners and 11 bait boats. All tuna vessels operating in Benin sail under Ghanaian flag. The targeted species by the tuna fishery are tunas (*Katsuwonus pelanus*, *Euthynnus alleteratus*, and *Thunnus obesus*), skipjack and sailfish *Istiophorus* and *Makaira*. In 2016, recorded catches are estimated at 8621 tonnes.

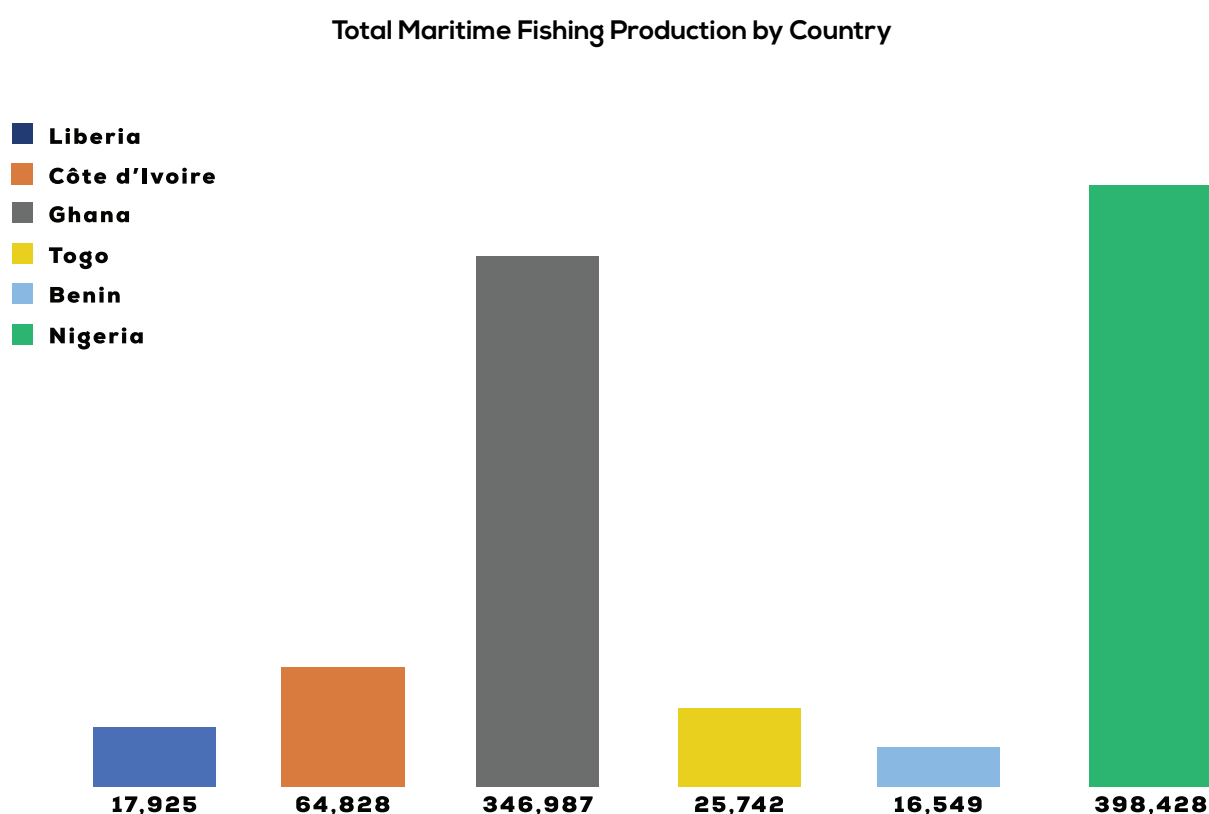
Nigeria

In 2015, Nigeria did not record a specifically targeted tuna fishery.

1.3 Summary elements on the main fisheries of FCWC countries

Maritime fishery production and its breakdown by country. The total production of sea fishing of the six (6) FCWC countries is estimated at 870,459 tonnes in 2016 . Its breakdown by country is shown in Figure 1. It shows a striking imbalance between countries with high production potential (Ghana and Nigeria) and countries with relatively low potential (Togo, Benin, Liberia). Ivory Coast lies between these both extremes.

Chart 1: Maritime fishing production by country



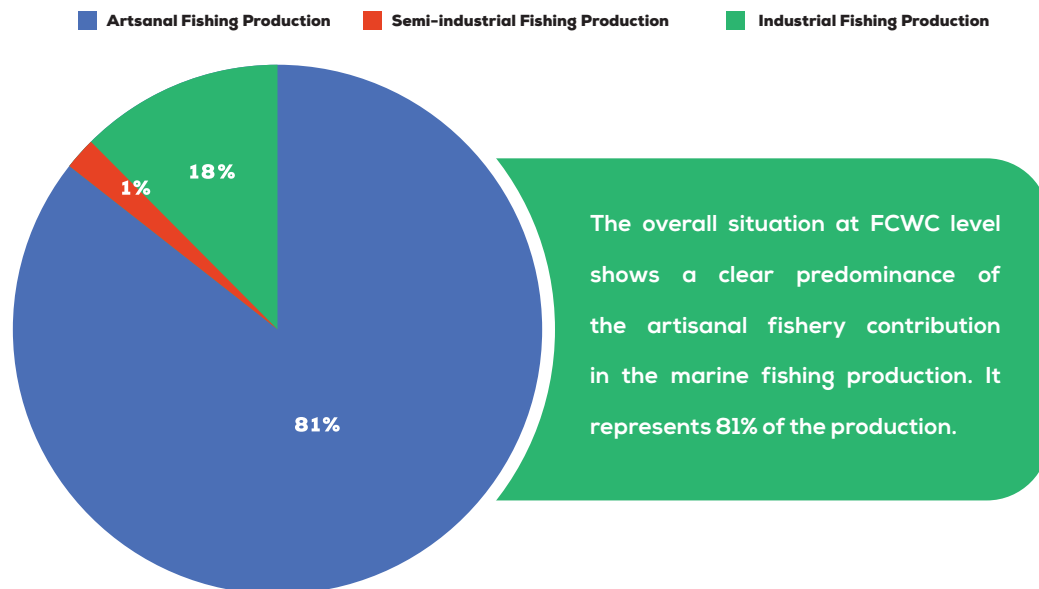
⁴ Data from Nigeria relate to year 2015, 2016 figures are not available

Sub sectors' contribution to marine fisheries production

Overall situation at FCWC level

Chart 2: Sub sector weights in marine fishing production

Subsectors' contribution to marine fisheries production (in tonnes)



Situation by Country

Chart 3: Contribution of sub-sectors to the production of each country

Contribution of sub-sectors to the marine production of each FCWC country

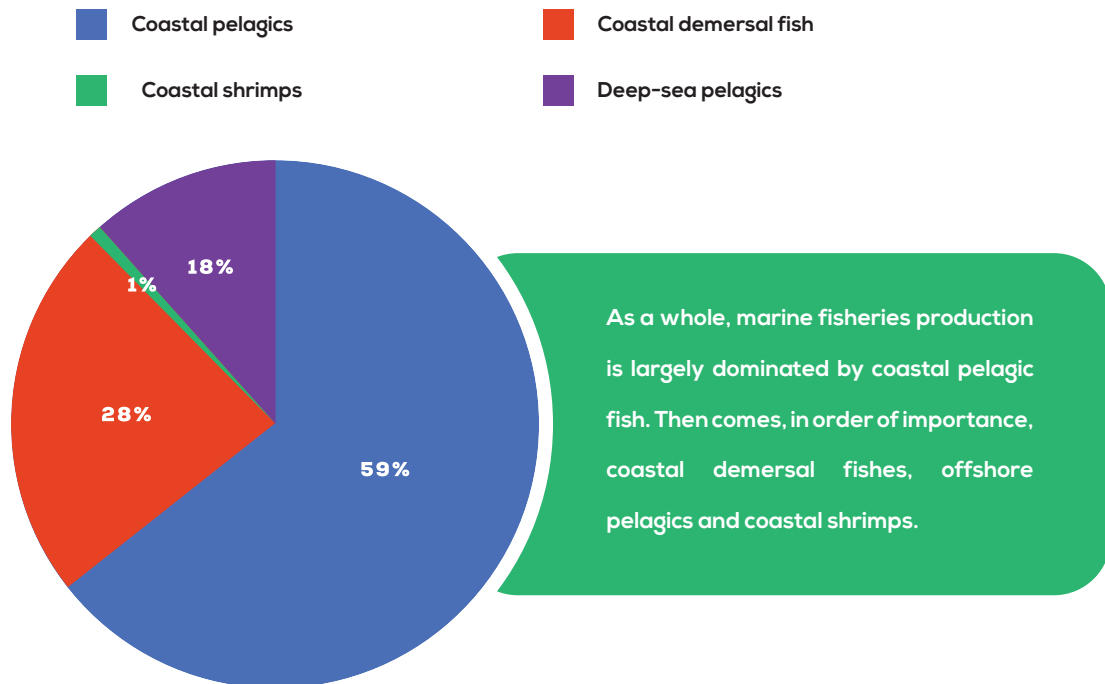


The contribution of stocks to marine fisheries production.

Overall situation at FCWC level

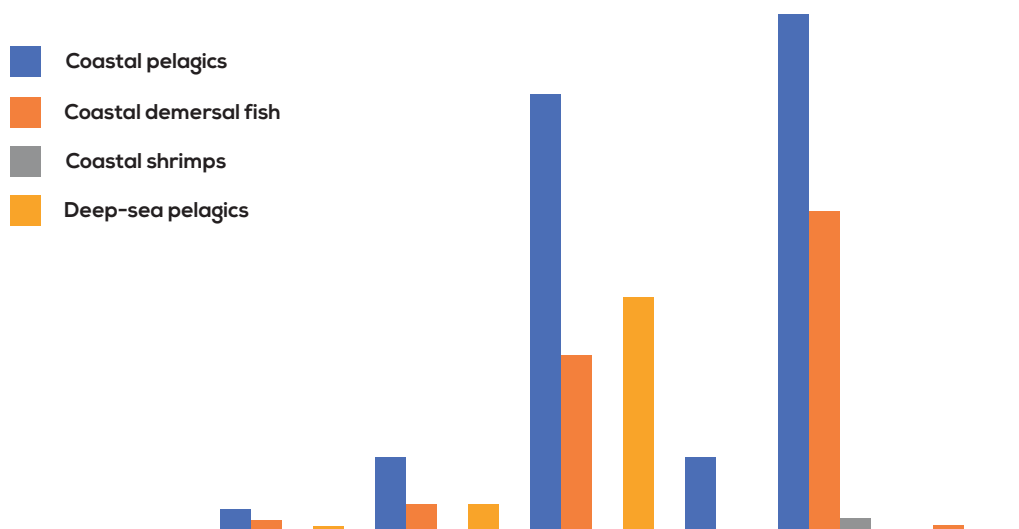
Chart 4: Contribution of stocks categories to production across the FCWC

Contribution of Marine Fisheries Production



Situation by Country

Chart 5: Contribution of stocks to production by country



The predominance of coastal pelagic fish in landings is found in all countries. It is also worth noting the importance of tuna landings in Ghana especially and in Ivory Coast to a lesser extent.

Small-scale fishing⁵

Table 1: Indicators of effort and capacity by country

Country	Number of canoes	Motorization rate	Number of fishers
Liberia	3,500	14%	33,000
Ivory Coast	1,608	68%	10,290
Ghana	11,583	57%	107,518
Togo	370	65%	2,640
Benin	728	76%	4,305

17,789 artisanal fishing boats operate in the sub-region, not including the Nigerian fleet. In the 5 FCWC countries shown in Table 1, there are some disparities. Ghana alone accounts for 65% of the artisanal fleet and 68% of fishers in the area. Liberia, even though having a numerically large fleet, experiment a setback in motorization and that opens opportunities for growth in fishing for the country.

⁵ Nigeria does not have specific indicators for maritime fishing. Its data comprise continental fishing that is not included in this table in order to avoid wronging of comparisons.

Industrial fishing

Table 2: Presentation of the industrial fleet by country

Country	Number of active vessels			
	Trawler Fishing	Sardine Fishing	Tuna Fishing	Total
Liberia	2		38	40
Ivory Coast	42	33	31	106
Ghana	80		27	117
Togo	1			1
Benin	14		14	28
Nigeria	135			135
Total	274	33	120	427

In total, approximately 427 industrial fishing vessels operate in the FCWC's sea area. Nigeria, Ghana and Ivory Coast have the most developed industrial fleets. Liberia's industrial fleet consists mainly of foreign ships.

Semi-industrial fishing

This sub-sector is mainly developed in Ghana, which has 403 multipurpose units, operating either in trawlers or purse seiners.

I.4 Fisheries Management Policies and Measures in force within FCWC Countries

I.4.1 Priorities and sectoral policy objectives demonstrated by the Member States

In total, approximately 427 industrial fishing vessels operate in the FCWC's sea area. Nigeria, Ghana and Ivory Coast have the most developed industrial fleets. Liberia's industrial fleet consists mainly of foreign ships.

In Benin, the management of maritime fisheries falls within the framework defined by the PNIASAN 2017-2021 (National Plan for Agricultural Investments and Food and Nutritional Security). In particular, it must contribute to improving the food and nutritional security of vulnerable populations. In this regard, the focus is on the sustainable management of fisheries

resources, including: (i) support for the implementation of the comprehensive law on fisheries and aquaculture in the Republic of Benin, (ii)) support for the management and sustainable management of fisheries by updating and implementing water project management plans (PGPE) and (iii) support for the repopulation of water programs.

In Togo, fisheries must contribute to the millennium goals, including poverty reduction, food security and gender equity.

In Nigeria, the Federal Department of Fisheries is responsible for ensuring the availability of fishery products of sufficient quantity and quality for the local market at affordable cost to the population. It also aims to promote the return of foreign currency through the export of fishery products, wealth creation, employment and the improvement of the socio-economic condition of fishers.

In Ghana, the Fisheries Management Plan (FMP 2015–2019) focuses on the restoration of stocks with a view to improving the socio-economic condition of the communities, creating jobs for food security and improving food security and GDP growth.

Liberia's Fisheries Policy and Strategy document is based on the guidelines and guiding principles that underpin the *FAO Voluntary Guidelines for Ensuring the Sustainability of Small-Scale Fisheries on Food Security and Eradication of Small-Scale Fisheries poverty background (PA Guidelines)*. It underlines the importance and priority to be given to small-scale fisheries which better fits the objectives of food security, employment especially for women, sustainable management of ecosystems and the fight against poverty.

In Ivory Coast the importance given to fisheries and aquaculture is mainly justified by their contribution to food security, employment and the fight against poverty.

The common denominator of all the sectoral policy objectives and priorities reviewed is, first and foremost, food security and then the fight against poverty. The main explanation for these choices is the high level of fish consumption in FCWC countries requiring an up-to-date supply. In these circumstances, the production of sea fishing is a major issue, particularly the production of coastal pelagics intended primarily for local consumption.

I.4.2 Current fisheries management measures

Management measures implemented in FCWC countries include:

- technical measures applying to fisheries in the different countries (mesh size, catch size, fishing zones, MPAs, stopping fishing);
- access rights (license / fishing permit, registration, quota management system or delegation of management responsibility to communities (co-management));
- measures to adjust fishing capacity (exit, freezing of rights etc.);
- management plans by fishery (in preparation or in the process of being implemented)

Ongoing Management measures within the various FCWC countries are summarized in Table 7 in Annex 1

II Diagnostic components of fisheries

II.1 About the state of exploited fish stocks

The diagnosis is based on the scientific work that has made it possible to determine the state of fish stocks in the maritime zone covered by FCWC countries as well as the available exploitation potentials. Recent assessments at the regional level include the results of the CECAF Scientific Working Groups presented and validated at the Seventh Session of the Scientific Sub-Committee of the Fishery Committee for the Eastern Central Atlantic (CECAF) which was held in Tenerife (Spain) in 2015. The marine fisheries stocks of FCWC countries were analyzed in two working groups:

- Small pelagic Working Group - South which analyzes the state of the resources of small pelagics in the south of the CECAF region, from Guinea-Bissau to Angola.
- Southern Demersal Working Group whose working area is defined as the waters between the southern border of Senegal and the southern border of Angola, including Cape Verde and Sao Tome and Principe.

The three categories adopted by the CECAF scientific working groups to indicate the state of stocks are:

- Not fully exploited: the stock is in good condition and fishing pressure can be increased without affecting durability. All increases must be considered within the overall environmental situation.
- Fully exploited: Fishing works within the limits of sustainability. The current fishing pressure seems sustainable and can be maintained.

- Overexploited: Fishing is in a dismal state both in terms of biomass and fishing mortality. Fishing pressure should be reduced to allow the stock to grow.

The summaries of the evaluations are presented below:

Table 3: Summary of Management Assessments and Recommendations - Small Pelagics - CECAF South

Stock	Management Area - Unit	Evaluation	Recommendation in Management
<i>Sardinella aurita</i>	Ivory-Coast, Ghana, Togo and Benin	Overexploited	As a precautionary measure, do not exceed the catch level of the average of the last five years (33, 000 tonnes) to allow the stock to grow. Biomass increased in 2012.
<i>Sardinella aurita</i>	Nigeria, and Cameroon	No assessments made as no CPUE series are available.	Catch trends show a general increase since 2007. As a precautionary measure, do not exceed the average of the last 4 years (5 934 tonnes).
<i>Sardinella maderensis</i>	Ivory-Coast, Ghana, Togo and Benin	Fully exploited	Since this species is caught with <i>Saurita</i> , which is considered over-exploited, caution must be exercised. As a precautionary measure, the catch level should not exceed the average of the last 5 years (13 000 tonnes).
<i>Sardinella maderensis</i>	Nigeria, and Cameroon	No assessment made as no CPUE set are available	The evolution of catches shows a stable trend in recent years. As a precautionary measure, do not exceed the average of the last 5 years (14 000 tonnes).
<i>Sardinella</i> spp.	Guinea, Guinea-Bissau, Sierra Leone and Liberia	Pleinement exploité	As a precautionary measure, the catch should not exceed the current level. Since the current catch information is uncertain, the working group did not make any catch specific recommendation.
<i>Ethmalose</i> (<i>E. fimbriata</i>)	Nigeria	No assessment has been made, but catches have been stable in recent years.	As a precautionary measure, the average of the last 5 years should not be exceeded (24 000 tonnes).
<i>Ethmalose</i> (<i>E. fimbriata</i>)	Ivory Coast, Ghana, Togo and Benin	The application of the model does not produce reliable results. Catches fluctuate annually	No specific recommendations were made because of the uncertainties in the data. Close monitoring of the stock is recommended.
Anchois (<i>E. encrasicolus</i>)	Ivory-Coast, Ghana, Togo and Benin	Fully exploited	Catch level should not exceed the average level of the last 3 years (56 000 tonnes).
Horse mackerel and other Carangidae <i>Trachurus trecae</i>	Guinea, Guinea Bissau; No capture in Sierra Leone and Liberia	Overexploited	Last year's catch is low compared to the catches of the last 10 years. As a precautionary measure, we should not increase catches of this species above the 2012 level (10,000 tonnes) so to allow the stock to grow.
Horse mackerel and other Carangidae <i>Trachurus trecae</i>	Ivory-Coast, Ghana, Togo and Benin	No reliable results from the reviews.	Catches are decreasing over the last 5 years As a precautionary measure, we should not increase the catches of this species above the average of the last 5 years (12 000 tonnes).

Table 4: Summary of Management Assessments and Recommendations – Demersales – CECAF South

Stock	Management Area - Unit	Evaluation	Recommendation in Management
Brachydeuterus auritus	Ivory Coast, Ghana, Togo and Benin	Overexploited	As a precautionary measure, and pending further clarification and information, the Working Group recommends a reduction in fishing effort so that total catches does not exceed 2010 outcome (14,000 tonnes).
Galeoides decadactylus	Ivory-Coast, Ghana, Togo and Benin	Overexploited	Taking into account the results obtained by the assessment and the trend of the CPUEs, the Working Group recommends a reduction of the fishing effort. Total catches in the area are not expected to exceed the level of 2010 (2,500 tonnes).
Dentex spp.	Ivory-Coast, Ghana, Togo and Benin	No rating results by model	As a precautionary measure and hoping that more reliable data set will be collected soon, given that these species were considered over-exploited by the last assessment and that CPUEs are at a very low level, the Working Group recommends a reduction of fishing effort, and that catches do not exceed the average of the last three years, ie around 6,000 tonnes.
Pagellus bellottii	Ivory Coast, Ghana, Togo and Benin	Overexploited	Taking into account the results obtained by the assessment and the trend of the CPUEs, the Working Group recommends a reduction of the fishing effort and the suspension of distribution of new licenses in the fishery. The Working Group also recommends that catches should not exceed the average of the last three years, which is estimated at 4,000 tonnes.
Pseudotolithus spp.	Ivory-Coast, Ghana, Togo and Benin	Fully exploited	As a precaution and in the hope that the time series of data collected will be more complete and reliable for the next meeting; the Working Group recommends not to increase the fishing effort and that catches do not exceed the average of the last five years estimated at 2,300 tonnes.
Pseudotolithus spp.	Nigeria and Cameroon	Fully exploited.	Based on the results obtained from the stock assessment of Nigeria and Cameroon and the trend of CPUEs, the Working Group recommends a reduction in fishing effort. Total catches should not exceed the 2010 catch of 8,000 tonnes per year for the stock of Nigeria and Cameroon.
Galeoides decadactylus	Nigeria, Cameroon, S. Tome & Guinea Equatoriale	No evaluation results by the model	As a precaution and in the hope of obtaining more complete information, the Working Group recommends not to increase the fishing effort for the stock of Nigeria, Cameroon, Equatorial Guinea and Sao Tome & Principe. These fisheries should be carefully monitored.
Cynoglossus spp.	Nigeria and Cameroon	No evaluation results by the model.	As a precautionary approach, the Working Group recommends for Cynoglossus spp. from Nigeria and Cameroon, a reduction in fishing effort due to the high effort in 2010, and that the fisheries should be closely monitored.
Brachydeuterus	Nigeria	No evaluation made.	The Working Group recommends a reduction in fishing effort since this species is caught throughout with other demersal species by industrial trawlers.
Penaeus notalis	Ghana	Not fully exploited	By precautionary approach the fishing effort should not exceed the level established in the last assessment in 2008 of 170 tonnes as an average for the period 2004-2006.
Coastal shrimps	Nigeria and Cameroon	No evaluation results by model	The Working Group is not in a position to provide specific management advice for this stock. However, in deciding to take a precautionary approach and waiting for more information, the group recommends that no new licenses be distributed to fish within these stocks.
Sepia spp.	Ghana	Overexploited	The situation appears to be worse than that of the 2008 assessment. In 2010 the increase in fishing effort was 65 per cent compared to 2004. Fishing effort should be reduced and catches limited to the maximum of 2,000 tons a year.

The assessment results show that the main target species in the fisheries are either overexploited or fully exploited. This is the case of coastal pelagics including sardinella and anchovy in the central zone (Ivory Coast, Ghana, Togo and Benin), horse mackerel and sardinella in Liberia. This is also the case for the main coastal demersal species targeted. For the central zone, the species concerned are: the pelted lippu *Brachydeuterus auritus* the small captain *Galeoides decadactylus* the red patch *Pagotus bellottii* the cuttlefish *Sepia spp.* the otholites or sea bass *Pseudotolithus spp.* For the southern zone including Nigeria the otholites or sea bass *Pseudotolithus spp.* which are highly targeted species are fully exploited.

II.2 About fisheries management

The results of the diagnosis relate on following points:

Disparities and weaknesses in relation with management technical measures in force within FCWC countries

At the mesh level: Several disparities are noted, the most obvious case being the mesh size allowed for the purse seine (35 mm for Benin, 27 mm for Liberia, 28 mm for Ivory Coast, 25 mm for Ghana , 20 mm for Togo and no regulation for Nigeria). Other disparities are to be noted for the other gear, in particular the fish trawl whose mesh varies from 40 mm to 76 mm according to the countries. In Nigeria, the decree implementing the Fisheries Law does not contain any operational provisions applicable to small-scale fishing.

At the fishing zones level: There are disparities concerning the exclusion zone of industrial fishing or zone reserved for small-scale fisheries. This area covers 6 nautical miles for 3 countries (Liberia, Ghana, and Togo). It covers 5 nautical miles for 2 countries (Nigeria, Benin). In Ivory Coast, this zone is reduced to 3 nautical miles.

At the minimum size of catchable species level: Half of the countries do not yet have regulations (Ivory Coast, Liberia, Benin). The regulation of Nigeria is incomplete and does not concern fish. These disparities or inadequacies pose certain management problems, especially within the evolution of the CFWC countries fleets marked by the cross-border mobility of these fleets.

Disparities and weaknesses regarding access rights

With regard to fishing rights, it is noted that most of the FCWC countries have enshrined in their policies and legal frameworks the principle of controlling access to fisheries through the prior award of a license or license. a fishing license, whether for industrial or artisanal fisheries. case of Nigeria, however, shows an unclear definition of responsibilities in managing access

authorizations between the FDF and the state authorities. In the FCWC countries, distinction is generally made between nationals and foreigners of the sub-region in the expenditure of access rights (Liberia, Ivory Coast, Togo, and Benin). Rates applied to foreigners are significantly higher. Another important element to note is the lack of fisheries agreements between FCWC countries governing access to foreign fishers, as is the case in the SRFC area.

At the effectiveness of fishing rights level, some strong points emerge:

- Despite the existence of a small-scale fishing license or license, all countries admit that, in general, their national artisanal fishers rarely pay for this right of access. On the other hand, foreign fishers fulfill this obligation. This situation can be analyzed by a form of tolerance of the free access in artisanal fisheries by the national administrative authorities, but also by an unsuitable strategy of control of the access in these fisheries. Indeed, it is increasingly recognized and recognized by fisheries managers, including in FCWC countries, that co-management involving delegation of management responsibility to organized fishing communities is a more effective system in achieving positive results in respect with artisanal fisheries management and access control. Liberia is experimenting positively co-management agreement approach between the "Bureau of National Fisheries" and the "Collaborative Management Association of Robertsport" and its surroundings.
- With regard to industrial fisheries, the principle of the license is allowed and applied. However, this fishing right as applied is not very effective with respect to the pressure on the resource as it is based on the hold capacity (GRT) and not the volume of the catch. It should be noted with interest that Liberia combines the licensing system with a catch quota principle.
- It goes along with the problem of the lack of effectiveness of the artisanal fishing license (or license), a difficulty upstream which is that the number of boats is not controlled, for lack of an efficient registration system. The identification of stakeholders in the fishery is a prerequisite and a necessary condition for the introduction of licenses and the implementation of any fishing effort management system. In a country like Nigeria, the need for FCWC support to identify and identify artisanal fishing vessels was clearly expressed. Under such conditions, the development of artisanal fisheries in FCWC countries cannot be controlled.

Status of other fisheries governance tools

Co-management

Considered to be a good practice in small-scale fisheries governance, co-management approach has made a significant entry into Liberia. It is applied in the framework of the Convention between the Bureau of National Fisheries and the Collaborative Association of Robertsport and its environs (CMA). This agreement gives legal recognition and negotiated responsibilities for sustainable management and good governance of fisheries resources in the area under CMA control. CMA thus provides support in the areas of registration, collection of fees for artisanal fishing licenses. She also has oversight and monitoring responsibilities and participates in data collection.

In Ivory Coast, co-management within marine fisheries with delegated management responsibilities to organized communities is not yet in place. It is not so stated as a principle or form of management in sectoral policy documents or in the legislative and regulatory framework.

In Ghana, the “Fisheries Management Plan of Ghana: 2015–2019” has planned the implementation of co-management for the artisanal sub-sector. More specifically, the Plan even provides for the revision of legislation to endorse the principles and modalities of co-management. These are perspectives, but in fact, co-management is not yet applied.

In Togo, professional organizations participate in the management of the sector and are regularly consulted by the sector authorities. However, there is still no co-management in the marine fisheries, as is the case in the inland fisheries with the Nangbeto Lake Management System.

Benin has also initiated co-management in continental fisheries but not yet in sea fishing. There is no current experience and even less text that empowers actors for co-management.

Nigeria does not yet experience federally co-management in artisanal marine fisheries. This issue is not on the agenda in sectoral policy instruments.

Adjustment / reduction measures in fishing capacity and effort

In Liberia, the Fisheries and Aquaculture Policy and Strategy (PRSP) include measures of adjustment and reduction of effort in the chapter on the management frameworks of different fisheries.

- For the artisanal segment of the coastal demersal fishery, the protection of breeding areas and nurseries, the promotion of responsible fishing practices by halving the use of monofilament nets, the application of mesh regulation; the establishment of a concerted management mechanism with Sierra Leone.
- For off-shore inshore demersal fishing (51-100 m depth): annual limitation of the number of licensed vessels, regulation of the mesh size, limitation of the length of the net, creation of at least one marine protected area.
- For the shrimp fishery: reduction of the number of shrimp vessels according to the MSY, application of the regulation on the mesh, creation of at least one marine protected area.
- For the coastal pelagic fishery: Reduction of fishing effort by banning trawl, transshipment at sea and introduction of a TAC; application of the regulation on the mesh; establishment of a concerted management mechanism with Sierra Leone.

These measures have been poorly applied as a whole for a variety of reasons (lack of institutional capacity, weakness of fisheries research, etc.).

In **Ivory Coast**, measures to adjusting / reducing fishing capacity and effort have been planned only on the implementation of the beach seine management plan's background: they concern inter alia: i) Improvement of the regulatory framework (decree establishing a new network, decree fixing the number of authorized beach seines); ii) Development of income-generating activities (Conduct an identification study of income-generating activities for fishing communities, Create pilot production units). The application of these measures is still shy.

In **Ghana**, it should be noted that the measures provided for by the Fisheries Management Plan of Ghana: 2015-2019 are relevant, even though they are currently very weakly applied. The following measures can be cited:

Planned measures for industrial fishing: 50% reduction in the number of fishing days in the next 3 years (inter alia: stopping fishing, revising licenses by reduction days of fishing by vessels, cancellation of inactive vessels for one year and revocation license, encouragement of vessel owners to rationalize their fleet (reduce vessels according to the actual effort allocated), cancellation of IUU fishing license repeated without option of transfer to another vessel etc.)

Measures planned for semi-industrial fishing: 50% reduction in the number of fishing days in the

next 3 years (inter alia: cancellation of inactive vessels for one year and revocation of the license, sanction the non-compliant vessels by a reduction in the number of fishing days allocated etc.).

Planned measures for small-scale fishing: Reduce effort and capacity levels by: a census and registration of canoes, an increase from 1 to 2 in the number of days without fishing per week (through education and in collaboration with local authorities), control of new entrants in the fishery by financial incentives for conversion to aquaculture and education of fishers for alternative employment, revision of legislation to move towards co-management).

Management of effort and capacity in the tuna fishery: among other actions envisaged: compliance with ICCAT limits for purse seine fishing capacity, closure of the Bigeye fishery for all vessels when quota is achieved, strict compliance with the ICCAT swordfish quota, modifying fishing gear to limit bycatch of sharks and birds at sea, in addition to education and stakeholder awareness.

In **Togo**, measures to adjust / reduce fishing capacity and effort are planned only as part of the implementation of the beach seine management plan. They concern in particular: (i) Reduction of the fishing effort of the beach seine by the granting of fishing authorizations; (ii) Establishment of a minimum mesh size of the beach seine with a view to reducing the catch rate of fish. juvenile fish species, in relation to other FCWC countries, iii) Establishment of a Marine Protected Area (MPA), iv) Diversification of income sources of fishing communities with beach seines. Their application is still shy.

In **Benin** as well, measures to adjust / reduce fishing capacity and effort are planned only as part of the implementation of the beach seine management plan. These include: i) Establishment of biological rest periods, ii) Establishment of a system for controlling access to resources (limit the number of beach seine units, introduce a map of ownership of beach seine fishery, set a resource access fee, issue beach seining authorizations), iii) Regulation of the mesh, iv) Creation of marine protected areas (MPAs) v) Reconversion of fishers . The application of these measures is not yet effective.

Nigeria has not yet defined or implemented specific measures to adjust / reduce fishing capacity and effort in marine fisheries.

Insufficient consideration of small-scale fishing by technical regulations

This deficiency is reflected in the de facto exclusion of small-scale fisheries from the scope of most technical management measures. This situation also leads to the inefficiency of the management measures since the artisanal fishery is not controlled while it is responsible for at least 80% of the withdrawals from the resource, thus representing the major component of the exploitation of the maritime resources. Artisanal fishing is not subject to any geographical confinement and is evolving in fact in free and almost free access mode.

For example, the artisanal fishery in all FCWC countries enjoys exclusive access to the coastal zone, which covers a distance varying between 3 nautical miles and 6 nautical miles depending on the country. This legitimate preferential treatment, however, poses problems if it is not subject to spatial restrictions. Indeed, this area characterized by its abundance of fish resources is also the breeding area for fish species and the concentration of juvenile fish. As a result, in some places it requires spatially and temporally closed fishing measures based on scientific advice. The general observation is that exploitation in this area is unlimited.

Absence of regional and coordinated policy of control of effort and capacity

The mobility of artisanal fleets throughout the FCWC countries, which is a result of the excess fishing capacity of some countries (the case of Ghana and Benin), favors the harmonization at a regional scale of the conditions of fishing access to the resource due to several factors, among which we can note:

- the exportation of fishing capacity given that the more or less depreciated state of stocks in a country, the over-determination of the number of fishers or boats and vessels lead to migrations to other countries and participate in this spread the phenomena of overcapacity and overfishing;
- the existence of common stocks with the same biological characteristics which should encourage fishery managers in the region to act so that the catching techniques used on both sides of the country comply with management measures to conserve stocks (mesh size applicable to fish stocks, banishment of mono filament etc.). The fact that migration occurs outside fisheries agreements between states reinforces this distortion;
- a transfer of technology and know-how in the industrial fishing which must be appreciated positively without losing sight of the perverse effects that it can generate. In most FCWC countries, purse seine fishing is the exclusive preserve of Ghanaian fishers or has

developed at their instigation.

- a transfer of means of production concomitant with the migration as the fisherman moves with equipment acquired in his country of origin but with technical specifications which may differ from those in force in the host country (net material , mesh, net length etc.). Control is extremely difficult in case of violation of host country regulations within the general context of weak control in terms of artisanal fishing trades. The mobility of fishing equipment is therefore potentially a factor contributing to the violation of regulations in a country;
- the possibility for any fisherman to buy fishing equipment in the country of his choice often with the motivation to obtain preferential prices

Weakness of fisheries research and its links with management

One of the reasons as to why there is weak or inadequate regulation is the weakness of fisheries research in FCWC countries. Several cases illustrating this weakness were noted: i) lack of regulation due to lack of research results (this concerns, for example, the regulation on the minimum size of catchable species in Ivory Coast); (ii) regulations not supported by research results (the case of the regulation of the minimum size of species in Togo); insufficient regulation (case of Nigeria with a single mesh for fish). In general, fisheries research has produced little knowledge of nursery grounds or spawning grounds, the sexual maturity sizes of fish species, gear selectivity. Only Ghana is practicing biological rest based on scientific data that have been used to determine favorable times. Spatial Restrictions or Marine Protected Areas are provided for in most FCWC countries either at the legal framework level or at the policy document level, but in fact this measure is not implemented in any country and this is not the case. is not unrelated to weak research results in this area.

The weak links between research and management can be illustrated by the fact that the management recommendations issued by CECAF are very poorly used by managers at both national and regional levels. Indeed, taking into account the shared nature of certain stocks, CECAF is often led to make recommendations of regional scope (case of sardinella). However, there is no mechanism for concerted management of stocks between FCWC countries.

Still partial vision of IUU fishing and of the fight against this scourge

The lack of a global vision of IUU fishing and of the fight against this phenomenon is dominant but disabling for the conservation of fisheries resources. At the level of the FCWC and the member countries, substantial efforts have been made to combat IUU fishing. Notable successes have been recorded in regional cooperation, particularly with the positive results of the implementation of the Project “Fisheries Information and Support to Monitoring and Control Systems (MCS) in West Africa”. Individually, several FCWC countries have initiated or are planning to increase their capacity to combat IUU fishing (acquisition of patrol boats, VMS satellite tracking systems, observer programs, vessel registers, etc.).

However, as is generally the case in West Africa, the fight against IUU fishing within the FCWC does not yet take into account artisanal fisheries while they have experienced significant growth in terms of effort and fishing capacity, catches made. These fisheries have been modernized, have extended their range of action, with sophisticated detection and catching means and represent the main component of the exploitation of fisheries resources. With the increasing scarcity of the resource, IUU fishing tends to develop in these fisheries (unauthorized fishing, fishing in prohibited areas, use of explosives, illegal transshipment, etc.). This development is all the more worrying as the fight against IUU fishing is still difficult in artisanal fisheries because of the reluctance to enforce the regulation for social and political reasons and because of the specificities of this sub-sector which make difficult control and surveillance (multiple landing ports, high mobility, dispersal and large numbers of fishing units, etc.).

In these circumstances, there can be no improvement in the management of the fisheries of the oceans of the FCWC countries without addressing the fundamental question of monitoring control and surveillance of small-scale fisheries. However, progress has been made in improving the MCS of small-scale fisheries in some countries, such as Togo, which has provided in its revised legal framework to provide fishing communities with surveillance powers.

III Programs and Initiatives Related to the Regional Fishery Resources Management Plan

At the sub-regional level, fisheries management initiatives have been developed and are important support points for the development of a regional fisheries management plan. We can note among these initiatives:

- The support of the EAF-Nansen project that led to the development of beach seine management plans in Benin, Ivory Coast and Togo using the Ecosystem Approach to Fisheries (EAF) framework. These plans contribute to a regional and coordinated approach to fisheries management and, as such, the management measures they entail are of particular interest to the Regional Fisheries Management Plan. For example, the Management Plan of Togo envisages the establishment of a minimum mesh size of the beach seine with a view to reducing the catch rate of juveniles of fish species, in consultation with other FCWC countries,
- The Ghana Fisheries Management Plan (National Policy for the Management of the Maritime Fisheries Sector 2015-2019). This plan is of vital interest as it concerns one of the FCWC countries where sea fishing is the most developed and which, consequently, tends to export its excess fishing capacity to the other countries of the sub-region. . Through this plan, Ghana has adopted measures to adjust and / or reduce its fishing capacity, the effective implementation of which will have positive impacts on regional fisheries. The importance and relevance of the management measures contained in this plan thus facilitate the development of a Regional Fisheries Management Plan, to the extent that the most emblematic measures are appropriate by one of the FCWC countries whose power of fishing is the most developed.

Overall, it is noted that FCWC countries are at different stages and more or less advanced not only in the development of their fisheries, but also in their management systems including sectoral policy, legal framework and institutional development. This uneven development must be taken into account and, where appropriate, trigger specific measures in favor of certain countries under the aegis of the FCWC.

IV The Regional Fishery Management Plan

IV.1 Guiding policy Framework

The Regional Fisheries Management Plan is part of the legal and political cooperation framework of the FCWC countries that it will contribute to making operational. The main instruments of this legal and political framework are:

- The Convention Establishing the Western Gulf of Guinea Fishery Committee of 2007
FCWC Strategic Plan 2011-2020.
- The Regional Plan of Action to Prevent, Catch and Eliminate Illegal Unreported and Unregulated Fishing in the FCWC Area.
- The Convention on the Sharing and Sharing of Fisheries Information and Data in the FCWC Area.
- The Convention on Minimum Conditions for Access to Fishery Resources in the FCWC Area.

The Regional Fisheries Management Plan also has a reference framework for the internationally, continentally and regionally defined fisheries governance policies and instruments to which FCWC countries have subscribed, including:

- African Union (AU) Policy Framework and Reform Strategy for Fisheries and Aquaculture
- The Regional Fisheries Program and the WAEMU Fishing Directives
- The FAO Code of Conduct for Responsible Fisheries
- The FAO Voluntary Guidelines for Ensuring the Sustainability of Small-Scale Fisheries in terms of Food Security and Poverty Eradication (PA Guidelines)

The Convention establishing the FCWC expressly states in its preamble the need for co-operation and common policies among coastal countries in the protection, preservation and management of fisheries resources in the central West of the Gulf of Guinea. It assigns to the contracting parties the responsibility to harmonize laws and regulations relating to fisheries.

The African Union Fisheries and Aquaculture Policy Framework and Reform Strategy promotes regional collaboration and integration in the management of shared fisheries and aquaculture resources and posits as a principle of the Strategy, the development of artisanal fisheries to help alleviate poverty.

The Regional Fisheries Program and the WAEMU Fisheries Directives have included among the priorities of sub-regional fisheries management: i) the implementation of shared management of shared resources; (ii) the strengthening of the arrangements for controlling access to fisheries resources in the Member States.

The FAO's Artisanal Fisheries Guidelines, which complement the Code of Conduct for Responsible Fisheries, set out consensus principles and guidelines that will enable the Regional Fisheries Management Plan to apply best practices in the management of internationally defined small-scale fisheries.

IV.2 Issues of the Plan

Sea fishing plays a strategic role in the FCWC countries through its contribution to food security and to economic and social development in general. However, as underlined by the Convention establishing the FCWC, the serious fisheries management and development issues facing the states of the Western Central Gulf of Guinea, such as overfishing and overcapacity of fisheries, illegal fishing, declared and unregulated pose real threats to this sector.

The interdependence and interweaving of FCWC countries' fisheries means that national responses to these problems alone are not enough to provide effective and sustainable solutions. The implementation of common or co-ordinated policies at the regional level is essential, hence the major challenge represented by the FCWC Regional Fisheries Resource Management Plan.

IV.3 Duration of implementation

The implementation period of the Regional Fishery Management Plan is 4 years. Its implementation period is 2019 - 2022. An external evaluation of the Plan will be conducted mid-term.

IV.4 Objectives of the Plan

The global objective of the Regional Fishery Resources Management Plan is to contribute to the improvement of food security and the economic and social welfare of FCWC member countries. Specifically, the Plan aims to create the conditions for the sustainable management of the FCWC's marine fisheries by strengthening sub-regional cooperation.

IV.5 Expected outcome

The expected results corresponding to the Plan areas of intervention are as follows:

- 5 The development, adoption and implementation of management plans in FCWC fisheries;
- 6 Harmonization of policies, laws and regulations governing marine fisheries;
- 7 Regulation of access to fisheries resources in artisanal fisheries;
- 8 Integrating Marine Protected Areas into Coastal Fisheries Management.

IV.6 Activities for implementing the Plan

Axis 1 : Development, adoption and implementation of management plans

Component 1 :

Development, adoption and implementation of management plans for shared stocks

The option of the Regional Plan for the Management of Fishery Resources is to start a management process by a fishery that presents a major challenge and whose eco-biological contours have been defined by the scientific work carried out at regional level within the framework of CECAF. The choice was thus focused on the center stock of sardinella shared by Ghana, Ivory Coast, Benin and Togo. This choice is due to the following reasons: (i) urgency, as the stock is diagnosed as overexploited; ii) a food security issue because these are resources that are generally consumed locally; (iii) a relatively clear definition of the management unit based on stock identity. It should be noted that the North and South stocks which concern Liberia and Nigeria are shared with third countries and that consequently their development within the framework of the FCWC is more complex. The perspective of their development however remains open. The development process of the management plan will be carried out in two phases:

- a) a 2-year development phase;
- b) an implementation phase that will take place over 2 years (remaining duration of the Management Plan)

For the elaboration phase, it is envisaged the creation of a Regional Planning Commission which brings together the public and private actors involved in the fishery, on the basis of a decision to

be taken at the political level by the Conference of Ministers. The FCWC Secretariat will coordinate this Commission, which will meet regularly to conduct and validate the development process.

The development process will include:

- a diagnostic phase of the sardinella fishery in its different aspects: bio ecology, management, monitoring, control and surveillance, exploitation, market and marketing. This phase will be supported by the creation of Regional Technical Commissions which will overlap with the themes mentioned above and in which each country will be represented. Focal Points will be designated in the 4 countries and will serve as a relay for the collection of information and to facilitate national consultations.
- a phase of development of the management plan which will define the management options for the fishery at regional level and their translation in the concerned 4 countries
- the holding of a Scientific and Technical Working Group which will bring together the Technical Committees and national, regional and international experts of high level who will have to review and to emit in a neutral and objectivity of the opinions and observations on the works of diagnosis and proposed management options
- A presentation of the development plan for opinion to the Advisory and Coordination Committee
- A presentation of the plan for arbitration and political adoption at the FCWC Conference of Ministers

The development phase will be supported by ad hoc support missions from international experts specializing in shared stock management as well as stock assessment campaigns. It will also lead to the strengthening of the technical capacities of fisheries management officers from FCWC countries in the field of fisheries management.

The coordination of the implementation and monitoring of the Plan will be under the responsibility of the FCWC General Secretariat, whose institutional capacities will be strengthened, including the recruitment and training of personnel in the fields of planning and the economy. peaches. The institutional implementation structure will be complemented by coordinating bodies for implementation in the countries. The key activities envisaged in the implementation phase will be guided by the Plan's management options but can be outlined as follows :

- implementation of a plan to freeze and / or reduce fishing capacity at regional level
- setting up a monitoring system for the fishery through the creation of a socio-economic observatory
- conducting regular stock assessment campaigns
- setting up a catch control system in the countries

Component 2:

Development and adoption of support for the implementation of beach sewage management plans at the FCWC

As a reminder, the EAF-Nansen project assisted a number of African countries in the development of fisheries management plans through the use of the EAF framework. In this context, three (3) FCWC countries namely Benin, Ivory Coast and Togo received support in terms of beach seine fisheries management. These countries, although having an operational framework for the implementation of management plans, do not yet have the means to finance these plans. Given the regional approach that has guided the implementation of these plans and the involvement of the FCWC, the Regional Fisheries Resource Management Plan will engage in the search for ways to finance these plans in order to support the implementation of the same plans in the 3 concerned countries.

Axis 2: Harmonization of policies laws and regulations governing marine fisheries

The review of fisheries policies and legal frameworks shows that countries are not at the same level or in convergence with respect to the formulation of fisheries management policies and measures. For example, while some countries have enshrined the principle of co-management in their basic texts (the case of Liberia), other countries have not yet done so (eg Ghana). Similarly, while some countries have species size regulations (Ghana), this is not the case in other countries (Liberia, Ivory Coast). An important issue to be addressed will be the conditions and modalities for reciprocal access to fisheries resources between FCWC countries, as the current situation shows disparities and a lack of clarity on the rules (absence of reciprocal fisheries agreements). We can also mention the innovations made in Togo in terms of participatory surveillance that would benefit from being shared. This axis is therefore aimed at upgrading countries with regard to the laws and regulations governing marine fisheries. It involves benchmarking work and the effort will be made to identify existing good practices and generalize them. The implementation

of this axis will be supported by:

- Collaborative meetings between marine fisheries managers from FCWC countries
- Conducting comparative studies on the policies and laws governing marine fisheries in FCWC countries with harmonization proposals.
- The implementation of a research component in support of the definition of technical measures (research on the minimum size of catchable species, research on the selectivity of gear and.). Scientists in the region will organize themselves into a regional working group to carry out scientific studies.
- A presentation of the harmonization proposals for opinion to the Advisory and Coordination Committee
- A presentation of the harmonization proposals for political adoption at the FCWC Conference of Ministers

Axis 3: Implementation of regulation for model of access to fisheries resources in artisanal fisheries

The implementation of this axis will focus on:

- Coordination at regional level of support for census and registration operations of small-scale fishing boats. These will include: i) sharing existing good practices, as in the participatory approach to registration in Benin with the involvement of professional organizations; (ii) to standardize and codify at the regional level the registration operations in order eventually to reach a regional register of vessels; within this framework a fishery approach is proposed and work first on the selected sardinella fishery to be the subject of a management plan; (iii) specific regional support to certain countries, such as Nigeria, which has no proven experience in managing the maritime vessel.
- The promotion of co-management and participatory monitoring: At the level of the sub-region, a consensus is established that in order to be effective, the control of access to fisheries resources in artisanal fisheries must be linked to co-management involving the delegation of management responsibilities and the granting of access rights to organized fishing communities. Liberia is successfully experimenting with this approach and other

countries have succeeded in continental fisheries (Benin). This change in approach is likely to consolidate the establishment of the small-scale fishing permit, especially for national fishers.

- The operationalization of this axis will be carried out by: i) a preliminary regional initiative to make the state of the art of co-management in West Africa that will synthesize the experiences and lessons learned but will mainly provide insights on the potential contribution of this governance model to better access control in artisanal fisheries. This initiative will define the paradigms of co-management and will help develop a regional approach to the implementation of co-management; ii) regional support for pilot experiments combining co-management and participatory monitoring in each FCWC country. These 2-year pilot experiences will be replicated by countries on the basis of lessons learned; (iii) study visits for managers to draw on best practices in the registration of small-scale fishing vessels in FCWC countries or other African countries with significant experience in artisanal fishing vessel registration; material; (iv) the coordination of the simultaneous implementation of canoe census operations in FCWC countries.

Axis 4 : Integrating Marine Protected Areas into Coastal Fisheries Management

Like the northern part of the CECAF region, the goal is to provide the FCWC region with a coherent network of marine protected areas that will be potential tools for fisheries management. These maritime areas will: i) restore and protect coastal habitats such as mangroves and lagoons that contribute to biological productivity; ii) resist overexploitation through conservation of the spawning biomass; (iii) to protect species vulnerable to fishing. Therefore, it will be necessary to provide the FCWC with a real regional strategy for marine protected areas, similar to those existing in other marine coastal regions. Beforehand, it will be necessary to carry out a regional geo-spatial study on marine ecosystems requiring protection action. Particular emphasis will be placed on strategic areas for managing shared stocks.

Once the regional strategy has been developed, it will be necessary to support the process of creating priority MPAs by: i) developing their legal and institutional frameworks and management plans; (ii) zoning of the identified maritime areas; iii) the establishment of a monitoring system for the effects associated with MPAs.

The implementation of the Regional Fisheries Resource Management Plan is based on the following approaches and principles:

- The realism of the Plan which takes into account the level of institutional development of the FCWC and the state of the fisheries of the sub-region and their management to set achievable objectives.
- The principle of subsidiarity means that the Plan focuses on issues whose appropriate treatment is at the regional level.
- An inclusive and participatory approach: All components of the fisheries resource management system (administrations, research, profession) will be involved in the design and implementation of the Plan's activities.
- Transparency in information and decision-making. This will strengthen trust between all actors to ensure compliance with policies and activities decided.
- Adaptability and flexibility: These principles will be implemented thanks to an external evaluation of the Plan which will take place midway and which will make the necessary corrections and revisions.
- Effectiveness by ensuring that the measures produce the required results, based on clear objectives and systematically conducting assessments.
- An ecosystem approach in the design and implementation of the different components of the Plan. Management measures will be accompanied by a concern to take into account the broader effects of fishing on the ecosystem as a whole, taking into account biodiversity approach.

Human Resources

The coordination of the implementation of the Regional Plan for the Management of Fishery Resources will be ensured by the FCWC Executive Secretariat. To this end, the Executive Secretariat will need to strengthen its technical team, which currently consists of a fisheries lawyer who is coordinating the Task Force of the West Africa Task Force and a Resource Management Specialist, who serves as the Fisheries Technical Advisor to the Executive Secretary. The execution of the Plan requires additional skills:

- a senior expert specialized in fisheries management
- an expert in co-management of small-scale fisheries
- an expert in monitoring and evaluation

Given that fisheries management and co-management specialists need high-level experts with proven international experience, the FCWC will solicit technical and financial partners to mobilize technical assistance to cover both areas. The skills of the sub-region will be used to recruit the monitoring and evaluation specialist.

The FCWC will also seek regional and international expertise through ad hoc technical support missions to strengthen the Program's implementation capacity.

Financial Resources

The global cost of implementing the Regional Fishery Resources Management Plan is **US\$ 5,391,840,000**. Specific budget support will be required from Member States to ensure their self-financing share of the Plan estimated at 30% of the total budget. The leftovers of 70% will be sought from technical and financial partners including those engaged in funding programs and projects covering the same aspects as those executed by the Plan. These financial technical partners are:

- ECOWAS under reinforcement of the regional fisheries organizations envisaged
- WAEMU under implementation of its Regional Fisheries Program
- The European Union as part of the PESCAO Project
- The World Bank under the WARFP Project

IV. 9 Logical framework and Action Plan

The logical framework and the Action plan of the FCWC Fish Resource Management Plan are presented in Tables 5 and 6.

Table 5: Logical Framework of the Management Plan

Objectives/Outcomes	Indicators of performance	Verification Sources	Assumptions/risks
O.S.1 : Creating the conditions for the sustainable management of the FCWC's marine fisheries by strengthening sub regional cooperation			
R1.1 : Regional development plans are developed, adopted and implemented	Number of beach seine development plans implemented Management plan for the sardinella fishery formulated Management plan adopted for the sardinella fishery Sardinella fishery management plan implemented	Reports of the Executive Secretariat Adoption Document for Regional Development Plans Monitoring reports on the implementation of management plans	Secure that shared stockpile management plans are institutional, legal and are political arrangements between states. The risk is to come out with arrangements that are not accepted by all States.
R1.2 : Law and Regulatory Policies of FCWC Member Countries governing marine fisheries are harmonized	Revised Policy Documents, Legislation and Regulations in Countries Following Scientific outcomes of Consultations	Executive Secretariat Reports Member States' reports	The risk is the lack of strong political will by states to end free and unhindered access to small-scale marine fisheries.
R1.3 : Access control models are implemented in artisanal fisheries	Number of pilot co-management initiatives supported	Rapports du Secrétariat Exécutif	Related risk is the resistance manifestation in administrations to delegate management responsibilities to professional organizations.
R.1.4 : Marine protected areas are integrated into coastal zone management	Registration rate for small-scale vessels and holding fishing licenses in each country Number of MPAs created and functional	Reports of the Executive Secretariat Member States' reports Reports of the Executive Secretariat Member States' reports	Associated risk with this result is the lack of political will to geographically limit small-scale fishers.

Table 6: Action Plan

Specific objectives / Outcomes /Actions	Budget (US\$)	Funds Source	Implementation Timeframe		Entrusted Responsible
			From	To	
Specific objective: Development of sustainable management conditions for FCWC's marine fisheries by strengthening sub-regional cooperation					
R1: Regional development plans are developed, adopted and implemented					
A.1.1 Kick-off meeting	47,000	UE/WAEMU/STATES	2019	2019	Secretariat
A.1.2 Diagnostic studies	18,800	UE/WAEMU/STATES	2019	2019	Secretariat
A.1.3 National meetings of diagnostic thematic commissions	33,840	UE/WAEMU/STATES	2019	2019	States
A.1.4 Regional meetings of diagnostic thematic commissions	47,000	UE/WAEMU/STATES	2019	2019	Secretariat
A.1.5 International expertise in support	37,600	UE/WAEMU/STATES	2019	2019	Secretariat
A.1.6 Organization of an International Scientific and Technical Working Group	56,400	UE/WAEMU/STATES	2019	2020	Secretariat
A.1.7 Meeting of the Heads of Fisheries Management for validation of the diagnosis and the Plan	18,800	UE/WAEMU/STATES	2019	2020	Secretariat
A.1.8 Ministers Conference for adoption of the Plan		UE/WAEMU/STATES	2019	2020	Secretariat
A.1.9 Implementation of a Capacity Reduction Plan	1,316,000	UE/WAEMU/STATES	2021	2022	States

A.1.10 Implementation of the catch monitoring system	225,600	UE/WAEMU/STATES	2021	2022	States
A.1.11 Implementation of National MCS Plans	451,200	UE/WAEMU/STATES	2021	2022	States
A.1.12 Annual evaluation surveys	225,600	UE/WAEMU/STATES	2019	2022	Secretariat
A.1.13 Execution of beach seine management plans	940,000	UE/WAEMU/STATES	2019	2022	States
Subtotal	3,417,840				
R2: FCWC Country members' laws and regulations governing marine fisheries are harmonized		EU-STATES			
A.2.1 Regional Working Group on Harmonization of Texts Meeting	47,000	EU-STATES	2019	2019	Secretariat
A.2.2 Research activities on technical measures	37,600	EU-STATES			Secretariat
A.2.3 Regional expertise	18,800	EU-STATES	2019	2019	Secretariat
A.2.4 Meeting of the Heads of Fisheries Management for the adoption of harmonized texts	18,800	EU-STATES	2019	2020	Secretariat
Subtotal	122,200				
R3 : Access regulation models are implemented in small-scale fisheries					
A.3.1 Meeting on the state of co-management art	94,000	EU/WAEMU/STATES BM	2019	2019	Secretariat

⁹Ivory-Coast assessed the implementation budget of its plan, which is taken into account in the calculation of the overall budget. For Benin and Togo, a flat-rate estimate was made for lack of costing by countries.

A.3.1 Support to 6 pilot co-management experiments - Research in support to co-management - Consultation meeting between local and national stakeholders - Co-management initiatives - Organizational support - Support to participatory monitoring	564,000	EU/WAEMU/STATES BM	2019	2022	Secretariat
A.3.2 Support to countries for census and registration of pirogues	338,400	EU/WAEMU/STATES BM	2019	2022	Secretariat
A.1.1.2 Annual evaluation surveys	225,600	UE/WAEMU/STATES	2019	2022	Secretariat
A.1.1.3 Execution of beach seine management plans	940,000	UE/WAEMU/STATES	2019	2022	States
Subtotal	996,400				
R4 : Marine protected areas are integrated into coastal zone management A.4.1 Preparatory work - Regional study, spatial geo - Study on development of legal and institutional frameworks and management plans of MPAs - Zoning works for identified maritime areas	140,000	EU-STATES	2020	2021	Secretariat-States
A.4.2 Operation and Management of MPAs - Functioning of management structures - Scientific monitoring of effects associated with MPAs	338,400		2021	2022	States
Subtotal	479,400				
Institutional support to the FCWC Executive Secretariat (Technical assistance, training, equipment)	376,000	EU//STATES/ECOWAS	2019	2022	Secretariat
TOTAL PLAN BUDGET	5,391,840				

Development, adoption and implementation of management plans

Diagnostic phase:

- Inception meeting
- Diagnostic studies
- National meeting of Thematic Commissions on Diagnosis
- Regional Meetings of Thematic Commissions on Diagnosis
- National expertise in support
- International expertise in support
- Scientific and International Working Group Meeting
- Fisheries Heads meeting for validation of the diagnosis and the Plan
- Ministers Conference for adoption of the Plan
- Capacity Reduction Plan Budget
- Catch Monitoring System Budget
- National monitoring plans Budget (equipment and operation)
- Stocks assessment campaign
- Implementation of beach seine management plans

Harmonization of policies, laws and regulations

- Regional Working Group Meeting on Harmonization of Texts
- Research activity
- Regional expertise
- Heads Meeting for adoption of harmonized texts

Implementation of access control models in small-scale fisheries

- Regional meeting on the state of co-management art (preparatory studies, logistics and organization of the meeting)
- Support to 6 pilot co-management experiments
- Research in support of co-management
- Consultation meeting between local and national stakeholders
- Co-management initiatives
- Organizational support
- Support to participatory monitoring registration
- Support to countries for census and registration

Integration of Marine Protected Areas into Coastal Fisheries Management

- Regional study, spatial geo
- Study on development of legal and institutional frameworks and management plans of
- MPAs
- Zoning works for identified maritime areas
- Functioning of management structures
- Scientific monitoring of effects associated with MPAs

Appendix

Appendix 1: Management Measures in force within FCWC Countries

Table 7: Presentation of technical measures by country

Country	Meshing	Remark
Liberia	<ul style="list-style-type: none"> - Sleeping net gill artisanal fishing: 50 mm - Coastal fishing purse seine: 27 mm - Net length (trawling): 11 m; 7.5 m for beef trawl - meshing trawl body: between 40 and 60 mm - meshing end of the trawl: between 27 and 40 mm 	Prohibition of the monofilament and prohibition of the beach seine except otherwise allowed (Fisheries regulation 2010)
Ivory Coast	<ul style="list-style-type: none"> - Bottom trawling: 60 mm - Shrimp trawl: 55 mm pocket - Pelagic trawling: 40 mm - Purse seine: 28 mm - Gillnet: 35 mm 	Note N ° 433 / MIRAH / DAP of 16/12/2015
Ghana	<ul style="list-style-type: none"> - Fish trawling: 60 mm - Shrimp trawl: 50 mm - Seiner: 100 mm - Purse seine: 25 mm - Gillnet: 50 mm 	Prohibition of mono filament and prohibition of beach seines in MPAs (Fisheries Regulation 2010)
Togo	<p>Small-scale fishing</p> <ul style="list-style-type: none"> - Purse seine: 20 mm - beach seine: 20 mm - bottom gillnet: 60 mm - shark net: 10 mm - floating net: 40 mm - surface gill net: 40 mm - shrimp net: 40 mm - lobster net: 60 mm <p>Industrial fishing</p> <ul style="list-style-type: none"> - slidable sliding netting: 30 mm; - sliding screw with live bait: 20 mm. - classic otter trawl (fish and cephalopods): 70 mm; - shrimp trawl: 50 mm; - pelagic trawl: 50 mm 	Order 68/10 of August 4th 2010
Benin	<ul style="list-style-type: none"> - "Soovi" gill net: To catch small-sized dermal species: 40 mmm - Toounga gill net: 60 mm - "Mahundo" sardinella gill net: 50 mm - Exocet gill net: 50 mm - Surface Shark net: 100 mm - "Nifan-nifan, Agbla, Gbowlédo" bottom shark net: 200 mm - Rock bottom gill net: 80 mm - Lobster net: 70 mm - "Watcha" sliding purse seine: 35 mm 	No explicit reference to industrial fishing
Nigeria	<ul style="list-style-type: none"> - Fish trawlers: 76 mm - Shrimp trawlers: 44 mm 	Law reinforcement decree on Fisheries Act does not contain any operational provisions applicable to small-scale fishing
Galeoides decadactylus	Nigeria, Cameroon, S. Tome & Guinea Equatoriale	No evaluation results by the model

Table 7: Fishing Zones

Country	Fishing zones	Remark
Liberia	Area of 6 nautical miles dedicated to subsistence fishing, artisanal fishing and semi-industrial fishing	
Ivory Coast	Small-scale fishing 1 to 3 nautical miles. Industrial fishing: The fishing zones are fixed according to the length of the vessel and the type of fishing. All vessels fish beyond 1.5 nautical miles. Sardiniers <30 m, fishing area> 1.5 nautical miles; sardine boat> or = 30 m: fishing area> 2 nautical miles / trawlers <30 m, fishing zone> 3 nautical miles; Trawlers> or = 30 m and <40 m: fishing area> 4 nautical miles; trawlers> or = 40 m: fishing area> 5 nautical miles; Shrimpers: fishing area> 6 nautical miles; Longliners and tuna vessels: fishing area> 12 000 nautical mille	
Ghana	Area of 6 nautical miles for artisanal and recreational fishing	
Togo	<ul style="list-style-type: none"> - Area of 6 nautical miles reserved for artisanal fishing - vessels of overall length less than 20 m beyond 6 moles - vessels of overall length between 20 and 30 m beyond 10,000 miles - boats longer than 30 m beyond 12 000 miles 	
Benin	- Area of 5 nautical miles reserved for artisanal fishing	
Nigeria	- Area of 5 nautical miles reserved for artisanal fishing capture size	
Liberia	No regulation	
Ivory Coast	No regulation currently; It is planned to do this by order and based on the results of the research that are not yet available	
Ghana	<p>Paeneus notialis Shrimp 1.5cm CL / Panulirus reg ius Spiny Lobster 12cm CL / Pagellus bellotti Red Pandora 14cm / Dentex canariensis Canary dentex 22cm / Sparus caeruleostictus Blue spotted seabream 18cm / Sepia officinalis Cuttlefish 14cm ML / Lutjanus fulgens / goreensis Red snappers 16 cm / Galeoides decadacydus Threfin 16 cm / Pseudotolithus senegalensis Cassava fish 18 cm / Pseudupeneus prayensis Red Mullet 14 cm / Epinephelus aeneus Group 42 cm / Sphyrna spp Barracudas 30 cm / Pomadasys incisus Roncador 14 cm / Pomadasys jubelini Burro 18 cm / Chloroscombrus chrys .urus Bumper 10 cm / Decapterus punctatus False mackerel 10 cm / Sardinella shelter Round sardine 18 cm / Sardinella maderensis Flat sardine 18 cm / Brachydeuterus auritus Burrito 14 cm / Scomber japonicus Chub mackerel 18 cm</p> <p>Burro 18 cm/Chloroscombrus chrys.urus Bumper 10 cm/ Decapterus punctatus False mackerel 10 cm/Sardinella abrita Round sardine 18 cm/Sardinella maderensis Flatsardine 18 cm / Brachydeuterus auritus Burrito 14 cm /Scomber japonicus Chub mackerel 18 cm Caranx rhocusl crysos Scad mackerel 21 cm /Engraulis encrasicolus Anchovy 6cm /Thunnus obesus Bigeye tuna 55 cm /Thunnus albacares Yellowfm 55 cm (CL - carapace length, ML - mantle length, fish species measured in fork length)</p>	

Togo	sardine (<i>Sardina pilchardus</i>) less than or equal to 10 cm; Anchovy (<i>Engraulis encrasicolus</i>) less than or equal to 5 cm in size; / flying fish (exocet) less than or equal to 15 cm; / garfish (belonidae) less than or equal to 50 cm; pike (<i>sphyræna</i> spp.) less than or equal to 65 cm; horse mackerel (<i>Decapterus rhonchus</i> , <i>Trachurus trecae</i> and <i>Trachurus trachurus</i>) less than or equal to 18 cm; trevally (<i>Caranx</i> spp, <i>trachinotus</i> spp) less than or equal to 20 cm; mackerel (<i>Scomber japonicus</i>) less than or equal to 12 cm; / skipjack (<i>Sarda sarda</i> , Spanish hawk, <i>euthynnus alletteratus pelamis</i>) less than or equal to 20 cm in size / <i>pristipoma</i> (<i>Pomadasys</i> spp) less than or equal to 15 cm in size; / grouper (<i>Epinephelus aeneus</i> and <i>Mycteroperca rubra</i>), less than or equal to 20 cm in size; red mullet (<i>Pseudupeneus prayensis</i>) less than or equal to 13 cm; / sole tongues (<i>Cynoglossus</i> spp) of a size not greater than 22 cm / bream (<i>Sparus</i> spp., <i>Pagrus</i> spp., <i>Pagellus</i> spp. and <i>Dentex</i> spp.) not more than 12 cm in size; / bars (<i>Pseudolithus</i> spp) less than or equal to 15 cm in size; / Snappers (<i>Lutjanus</i> spp) less than or equal to 12 cm in size; / tuna (<i>Thunnus</i> spp) weighing less than 3.5 kg / shark less than or equal to 100 cm / sailfish (<i>Istiophorus albicans</i>), <i>Tetrapterus</i> spp) less than or equal to 100 cm in size / swordfish (<i>xiphia gladius</i>) Less than or equal to 100 cm in size / female lobster; Sea cicada (<i>Syllarides herklotsii</i>) less than or equal to 20 cm in size; shrimp (<i>Penaeus</i> spp) weighing less than or equal to two hundred (200) individuals per kilogram; / cephalopod of uneviscerated weight not exceeding three hundred and fifty (350) grams or eviscerated weight not exceeding three hundred (300) grams;	
Benin	No regulation	
Nigeria	Lobster: length 7 cm Crab 6 cm	No provisions on fish species

Table 8: Status of access rights by country

Country	Fishing Rights	Remark
Liberia	Small-scale fishing license. Industrial fishing license: license with a projected quota by species. The license price indexed to the value of the catches set by BNF and the actual tonnage of catches;	
Ivory Coast	License for industrial fishing (scale depending on the technical characteristics of the vessels) Small-scale fishing licence with different prices between domestic and foreigners.	
Ghana	Industrial fishing: license of which scale is based on the ability of the ship (GRT) and the targeted resource.	
Togo	Artisanal fishing license, industrial fishing license. Industrial fishing fee determined on the basis of the overall length of the boat: less than 20 m, between 20 and 30 m, 30 m	
Benin	Industrial fishing license (scale depending on the technical characteristics of the vessels); Artisanal fishing license.	
Nigeria	Industrial fishing License (fish and shrimp) (scale depending on the technical characteristics of the vessels);	For small-scale fishing, the responsibilities for the issue of authorizations are not clearly stipulated. Although resources management is the responsibility of FDF, enforcement of fisheries must permits. In many States, the legal framework is not yet established

Table 9: Governance components by country (co-management)

Country	Co-management	Remark
Liberia	Applied: Agreement between Bureau of National Fisheries and collaborative management association of Robertsport (CMA) and its surrounding area: aims to give legal recognition and responsibilities negotiated for sustainable management and good governance fish resources in the area under control of the CMA. CMA supports in the registration, the collection of fees for licenses, implements the control and monitoring and participates in data collection processes.	
Ivory Coast	In the maritime domain, still there is no co-management process that is backed by a delegation of management responsibilities near organized communities. Co-management approach is not stated as a principle or form of management in sectoral policy documents or within the legislative and regulatory framework.	
Ghana	"Fisheries Management Plan of Ghana: 2015-2019" has provided the implementation of co-management for artisanal sector: it is also expected to revise the law to endorse co-management principles and terms. Currently, co-management approach is not among pragmatic facts.	
Togo	Even if the professional organizations are involved in the management or are consulted by the authorities from management sector, still there is no co-management strategy in maritime domain, as the way it is performed on the Lake of Nangbeto.	
Benin	No experience ongoing nor is there any text that empowers stakeholders for conducting co-management as the way this has been done on continental fishing.	

Table 10: Governance components by country (Development plans)

Country	Development	Remark
Liberia	Inexisting.	4 fishery management frameworks are defined in the sectoral policy document but are not to be considered as part of development plans. The legal framework has provided development plans
Ivory Coast	Only beach seine management plan exists, but shy implemented.	
Ghana	No (FMP is a management framework and not focused on a fishery).	Provided in the sectoral policy document and legal framework
Togo	Only beach seine management plan exists. Among assets of the implementation are found acquisition and distribution of groundwater for regulatory nets to fishing units of the beach seine.	
Benin	Only beach seine management plan exists but shy implementation.	
Nigeria	Inexisting.	

Table 11: Governance component by country
(adjustment / reduction capacity and effort)

Country	Effort and fishing capacity adjustment / reduction measures	Remark
Liberia	<p>The Fisheries policy document (Fisheries and aquaculture policy & strategy) includes measures of adjustment and reduction effort in the chapter on different fisheries management frameworks.</p> <p>For the small-scale segment of the coastal demersal fishery, it is provided the protection of breeding areas and the nursery, the promotion of responsible fishing practices by a reduction by half of the use of nets mono filament, the application of the regulation on the mesh; the implementation of a concerted mechanism with Sierra Leone.</p> <p>For offshore coastal demersal fishing (51-100 m depth): annual limit on the number of licensed vessels, regulation of the mesh, limiting the length of the net, creating at least a marine protected area.</p> <p>For the shrimp fishery: reduction in the number of ships shrimpers based on MSY, enforcement of the regulation on the mesh, creating at least a marine protected area.</p> <p>For the coastal pelagic fishery: reduction of the fishing effort by the ban on beef trawl, transshipment at sea and the introduction of a TAC; application of the regulation on the mesh; establishing a concerted management mechanism with Sierra Leone.</p>	
Ivory Coast	<p>Provided for only within the implementation of the management plan for the beach seine: concerns among other things: improving the regulatory environment (ordinance fixing a new meshing, ordinance setting the number of allowed beach seines) Development of income-generating activities (conduct identification of income-generating activities study favor to fishing communities, create production pilot units).</p> <p>The application is still shy</p>	
Ghana	<p>No applied but planned within the "Fisheries Management Plan of Ghana: 2015-2019".</p> <p>Measures provided for the industrial fishing: 50% reduction in the number of fishing days in the next 3 years (among others fishing standstill, review of licenses by reduction of fishing days per ships, removal of inactive ships a year and revocation of the license, encouragement of ship owners to streamline their fleet (reduce the ships according to the allocated actual effort), abolition of the license for reiterated IUU fishing without any possibility of transfer to another ship etc.).</p> <p>Semi industrial fishing provided measures: 50% reduction in the number of fishing days in the next 3 years (among other write-off of idle ships for a year and revocation of the license, sanction of non-compliant to sanitary rules ships by reduction in allocated fishing days etc.</p> <p>Measures provided for small-scale fishing: reduce effort and ability levels by: a census and registration of the pirogues, an increase of 1 to 2 days without fishing activities per week (by conducting educative information in cooperation with the local authorities, control of the new comers in the fishery industry by financial incentives for conversion into aquaculture and by conducting educative guidance to fishers for alternative employment as well as legislation review so to upgrade towards co-management approach).</p> <p>Management of effort and ability in the tuna fishery: Among other envisaged actions: strict compliance with the limits set by the ICCAT regarding fishing capacity of the purse seiners, closure of the Bigeye fishing for all ships once the quota is reached, strict compliance with ICCAT swordfish quota, modify fishing gear to limit by-catches of sharks and birds at sea, in addition to education and awareness favor to actors).</p>	

Country	Effort and fishing capacity adjustment / reduction measures	Remark
Togo	<p>Provided only within the implementation of the beach seine management plan: concerns among other things: Reduction in fishing effort for beach seine by granting fishing authorizations, establishing a minimum mesh of the beach seine with a view to reducing capture rate of juveniles of fish species, in relation to other FCWC countries. Creation of a marine protected area (MPA). Diversification of sources of income for beach seine fishing communities.</p> <p>The application is still shy</p>	
Benin	<p>Provided only within implementation of the management plan for beach seine: concerns among other things: Introduction of biological rest periods, establishment of a system of control to resources access (limit of units of beach seine number, introduction of a ownership card for beach seine fishing units, fix of charge for access to the resources, issuance of beach seine fishing permits), regulation of the mesh, creation of marine protected areas (MPAs), conversion of fishers.</p> <p>The application is still shy</p>	
Nigeria	Not applied	

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The Fisheries Committee for the West Central Gulf of Guinea (FCWC) facilitates cooperation in fisheries management between the member countries: Benin, Côte d'Ivoire, Ghana, Liberia, Nigeria and Togo.



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