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**The CECAF-FIRMS collaboration, status of updates of the stocks and fisheries
inventories, new developments and partnership opportunities**

Summary

CECAF has a long history in FIRMS, the regional body and its member countries have been contributing with regional and national information on marine resources and fisheries to the FIRMS database. This information has been organized, standardized and made easily available for national and regional use and globally disseminated on the FAO/FIRMS webpage. This report provides: 1) an overview of FIRMS and its present and future benefits and opportunities for CECAF area; 2) presents the current status of available CECAF fisheries and marine resources status reports and the number of records in the marine resources and fisheries inventories in FIRMS, and recalls agreed responsibilities and workflow, 3) an update for the FIRMS involvement on the Global Record of Stocks and Fisheries (GRSF), and 4) the draft arrangement for the Fishery Committee of the West Central Gulf of Guinea (FCWC) as possible new FIRMS partner. The SSC is requested for feedback on i) what FIRMS can offer at national and regional levels, ii) current fact sheets and the information they contain, and on how workflow and timeliness of uploading new information to FIRMS can be improved, iii) on the GRSF and how CECAF could further contribute and benefit, and iv) on the FCWC-FIRMS partnership arrangement.

Background

FAO is leading the FIRMS (Fisheries and Resources Monitoring System) partnership which aims to facilitate access to a wide range of high-quality information on the status and trends of global marine fishery resources, fisheries and their management. The overall goal of the FIRMS partnership is to provide decision-makers with necessary information to develop effective fisheries policies and management plans in accordance with the Code of Conduct for Responsible Fisheries.

The partnership nowadays brings together 14 Institutions representing 19 Regional Fisheries Bodies (RFBs)¹. Partners contribute with their information on status and trends through agreed

¹ Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), Commission for the Conservation of Southern Bluefin Tuna (CCSBT), Directorate-General for Maritime Affairs and Fisheries (DG

FIRMS format reports which are then structured on an inventory of over 1000 marine resources/stocks and about 200 fisheries that these organizations provide advice on / or manage.

Present and future benefits and opportunities for CECAF region and countries

Nowadays, FIRMS is offering its partners and member countries the following:

- support the need for easy access to high quality information for the development/enhancement of fisheries policies and management plans at national and regional levels by collating, formalizing and digitalizing, organizing, standardizing, managing and disseminating marine resource and fisheries information, including the disposal of FIRMS data services (e.g. map viewer, analytical tools, data dissemination capacity);
- contribute to regional needs, such as building foundation information layers (inventories, fact sheets) that act as catalyst to develop/enhance regional databases (e.g. the WECAFC-FIRMS collaboration);
- ensure national and regional visibility at global level guaranteeing a role in the global policy agenda; improving transparency and accuracy of information, while respecting ownership, confidentiality and security. Including the opportunity to access to national, regional and global programs and project opportunities.

On-going efforts aim at:

- broadening geographic and thematic coverage and timely contributions by engaging new partners, enhancing the participation of partners through facilitating/automatizing the information reporting to FIRMS, and by streamlining national contributions on fishing activities through the RFBs and capacity building programs;
- enhanced dissemination of all confirmed commercially relevant and related stocks and fisheries inventories by providing a global unique identifier to each of them applying a global standard, so that national, regional and global policy processes and their decision makers and other relevant stakeholders can make the best usage of it.

In addition, these include:

- supporting countries and regions' work on seafood traceability and certification systems;
- facilitate the effective management of fisheries subsidies reporting requirements (World Trade Organization);
- facilitate countries' contribution and reporting to global political agenda (SDG 14).

CECAF in FIRMS

MARE), FAO Fisheries and Aquaculture Department, General Fisheries Commission for the Mediterranean (GFCM), Inter-American Tropical Tuna Commission (IATTC), International Commission for the Conservation of Atlantic Tuna (ICCAT), International Council for the Exploration of the Sea (ICES), Indian Ocean Tuna Commission (IOTC), Northwest Atlantic Fisheries Organization (NAFO), North Atlantic Salmon Conservation Organization (NASCO), North-East Atlantic Fisheries Commission (NEAFC), Southeast Asian Fisheries Development Center (SEAFDEC), South East Atlantic Fisheries Organisation (SEAFO).

In 2003 CECAF, through its Scientific Sub-committee (SSC), agreed to contribute with regional CECAF marine resources assessments information to FIRMS as part of its regular process (endorsed at the 18th session of CECAF in 2006).

In 2007 SSC, during its 5th Session in Casablanca, requested national representatives to validate the draft CECAF fisheries inventory, in 2009, a [*CECAF-FIRMS Workshop on Resources and Fisheries inventories*](#) (Accra) produced a revised and consolidated version of the inventory and provided capacity building for follow-up activities. And in 2011, the fisheries inventory was validated by the SSC during its 6th Session (Accra 2011) where a reporting workflow was also agreed on.

Currently, the marine resources/stocks inventory is sourced from CECAF working group reports, and the fisheries information fed during the workshop is expected to be validated and further contributed/updated by countries. Through the collaboration with CECAF, experts and national representatives from the region enrich both inventories with information collected at regional and national level. And finally, disseminated using FAO/FIRMS website.

Assessment of CECAF-FIRMS reporting status

At present the CECAF resources and fisheries inventories include (see also Appendix 1):

- **286** marine resources status reports (of which **172** are published); and
- **289** fisheries status reports (of which **77** are published).

All fact sheets can be accessed through the FAO/FIRMS web site and the new Stocks and Fisheries Map Viewer <http://firms.fao.org/firms/stocks-fisheries-map-viewer>.

As described above, the marine resource/stocks inventory grew along years, and since CECAF SSC7 (Oct. 2015) the inventory has been updated with 69 new marine resources and 96 new reports have been published as fact sheets. In some cases the marine resources/stocks for which reports were provided changed in definition with time, making the inventory itself very dynamic. Thus while the currently disseminated inventory reflects the latest stocks/resources assessment structure agreed upon by the assessment working groups, historical changes can also be traced through FIRMS.

The work on fishery inventory was mostly carried out during 2009-2011 and national representatives were involved to develop the inventories. Validated inventories and fact sheets have been published for 6 countries: **Angola, Togo, Côte d'Ivoire, Gabon, Guinea and Spain**; and progressed to different levels of advancement for 9 other countries. No major changes took place after that.

Web trends

At the tenth FIRMS Steering Committee Meeting (FSC10) held in June 2017 in Copenhagen, Web traffic analysis, from the period 2007-2016, showed a relevant increase through time in the overall

number of page views and sessions. Although with differences, such increase of Web traffic brings more visibility to all partners.

Responsibilities, maintenance workflow and contribution to FIRMS governance

Responsibilities and maintenance of workflow with respect to some aspects of CECAF's contribution to FIRMS were discussed and laid out at the sixth session of the SSC in Accra, Ghana, in 2011 (see page p.9 of the report of this meeting). Main points are:

- Responsibilities: CECAF is responsible for the content of the marine resources inventory while countries are responsible for the content of the fisheries inventory. Reporting norms, standards and overall consistency for the region are set by the CECAF SSC under the general FIRMS umbrella.
- Maintenance: Countries can update the content of their fishery inventory on a routine basis. The CECAF SSC will keep under review aspects of corporate interest such as usage, rate of update, major modifications, distribution of responsibilities including among sub-regional bodies, etc.
- Governance: The Chairperson of the SSC is the FIRMS focal point for the CECAF region.

The current CECAF focal point for FIRMS (Mr. Kossi Sedzro) has contributed actively to the FIRMS global partnership discussions and has been able to participate in several FIRMS governance meetings thanks to available FAO extra-budgetary funding, including:

FIRMS Steering Committee

- FSC10 (Copenhagen, June 2017)
- FSC8 (Rome, February 2013)
- FSC7 (Rome, December 2011)

He also contributed to the following FIRMS Technical Working Group (TWG) and other meetings:

- TWG6 (Rome, February 2018)
- FCWC-FIRMS: Final workshop TCP/RAF/3512 “Strengthening routine fisheries data collection in west Africa” (Monrovia, November 2017)
- TWG5 (Rome, February 2016)
- TWG4.3 (Online, October 2014)
- TWG2 (Rome, April 2008)

Prospects: FIRMS on-going developments

Among others, a major outcome of FSC10² is the decision that FIRMS should take ownership of the Global Record of Stocks and Fisheries (GRSF). This expansion of the business model will be

² The tenth session of the Fisheries and Resources Monitoring System (FIRMS) Steering Committee (FSC10) was attended by eleven partners - seven members and four associate members: Commission for the Conservation of Antarctic Marine Living Resources [CCAMLR], Food and Agricultural organization of the United Nations [FAO], General Fisheries Commission for the Mediterranean [GFCM]; Inter-American Tropical Tuna Commission [IATTC]; International Council for the Exploration of the Sea [ICES]; Northwest Atlantic Fisheries Organization [NAFO],

refined during the forthcoming months for final presentation and discussion at the next FIRMS Steering Committee meeting in 2019.

About the Global Record of Stocks and Fisheries

GRSF was created as a Virtual Research Environment (VRE) during the BlueBRIDGE project, which ended on February 2018. Since then GRSF is running a test phase to validate records and to assign “global unique identifiers”.

GRSF is expected to offer: 1) increased dissemination and monitoring of stocks and fisheries information, including in support to the Sustainable Development Goal Indicator 14.4.1 “Proportion of fish stocks within biologically sustainable levels” of 2030 UN Agenda for Sustainable Development (A/RES/71/313); 2) support to traceability and certification needs including catch documentation schemes, ecolabelling schemes, food safety, and sustainable fisheries; 3) support through links to relevant stocks and fisheries records the information transparency requested in the context of WTO negotiations on prohibiting fisheries subsidies that affect fishery resources sustainability. Three database sources are currently contributing to the GRSF: the Fisheries and Resources Monitoring System - FIRMS (FAO of the UN), the RAM Legacy Stock Assessment Data Base (University of Washington), and the FishSource (program of the Program of the Sustainable Fisheries Partnership). As a result of this process and partnership work, the FIRMS-GRSF database is expected to dramatically increase in coverage.

Prospects: FIRMS new partnership opportunities

The FIRMS Secretariat is looking for new partners to increase the data coverage around the world and, the Secretariat also continue the promotion of FIRMS (together with all partners) through capacity building activities with selected RFBs upon availability of extra-budgetary funding resources. As of today the FIRMS partnership is under consideration by Fisheries Commission for the West-Central Gulf of Guinea (FCWC), Southern Indian Ocean Fisheries Agreement (SIOFA), South Pacific Regional Fisheries Management Organisation (SPRFMO), and Western and Central Pacific Fisheries Commission (WCPFC).

Regarding the FCWC, the FIRMS Secretariat had the opportunity to run a two days session of the final workshop TCP/RAF/3512 “Strengthening routine fisheries data collection in west Africa” (Monrovia, Nov. 2017) together with the CECAF-FIRMS focal point to improve the collaboration between FCWC and its Member Countries. The workshop objectives were: i) explore the benefits of a FCWC-FIRMS partnership, ii) discuss FIRMS Fisheries inventories of FCWC Member countries, and iii) raise awareness on how FAO and FIRMS can support SDG Indicator 14.4.1 (under the SDG Goal 14). By learning what FIRMS is and what it offers, the participants recognized the added value of the inventories and the new perspectives emerged. Positive feedback were provided during the meeting by the participants encouraging the FCWC Secretary to work on a FCWC-FIRMS Partnership arrangement.

South East Atlantic Fisheries Organisation [SEAFO]; Fishery Committee for the Eastern Central Atlantic [CECAF], Southwest Indian Ocean Fisheries Commission [SWIOFC], Regional Commission for Fisheries [RECOFI], and Western Central Atlantic Fishery Commission [WECAFC].

Additional interactions between the FCWC Secretariat and the FIRMS Secretariat led to a draft FCWC-FIRMS partnership arrangement which is only waiting for final agreement and signatures by the Parties.

The FIRMS Rules of Procedures for new partners expects that where reporting contributions between existing and new partner institutions might interact/overlap, the proposed contributions of the new partner should be reviewed by the concerned parties as part of their existing collaboration mechanisms, before sharing the new partner's application to all FIRMS partners for possible endorsement. The Partner contributions are detailed in Annex 2 of the FIRMS Partnership arrangement for each partner.

In the case of FCWC, the institutional "Context" which should be taken into account in developing the Annex 2 is as follows: *"The Committee of Fisheries for the West Central of the Gulf of Guinea (FCWC) is a sub-regional organization operating within the Eastern Central Atlantic region (FAO Area 34). FAO, as FIRMS partner, contribute to the partnership for the Eastern Central Atlantic region through the Fishery Committee for the Eastern Central Atlantic (CECAF), a FAO body under Article VI of the FAO Constitution. As per FIRMS agreement, CECAF with its Scientific Sub-Committee (SSC) has a primary responsibility for reporting on the status of Marine resources and a corporate responsibility for the overall consistency of the marine resources and fisheries inventory, as well as overview of strategic and policy aspects.*

In the FIRMS context, FCWC can strengthen the capacity to provide information on the status and trends of the fishery sector for the West Central of the Gulf of Guinea and the underlying member countries, by fulfilling a key role regarding the provision of updated quantitative and qualitative information on inventoried fisheries."

The Appendix 2 at the end of this document lays out the detailed arrangement on the nature of information and the conditions under which this information is made available under the FIRMS partnership arrangement.

Given the above, the CECAF SSC is kindly asked to provide technical feedback on FCWC-FIRMS partnership opportunity and to suggest any mechanism which would facilitate the collaboration among the concerned actors (CECAF, FCWC, and FIRMS). In particular, the SSC is suggested to comment on the envisaged added values by involving FCWC in FIRMS:

- Strengthen capacities
- Improve timeliness
- Data consistency of the fishery inventory
- Alignment with statistical information
- Coordination or alignment of CECAF-FCWC FIRMS national focal points

Actions requested from the Committee

The committee is kindly requested to review aspects of CECAF interest such as usage, update and timeliness, workflow, new opportunities and partners, and in particular provide feedback on:

- the usefulness of the FIRMS to CECAF and CECAF member countries;
- reflect on future options for CECAF and FIRMS collaboration and provide feedback on the suggested further development of the FIRMS framework in the CECAF context.
- the current fact sheets and the information they contain, and on how workflow and timeliness of uploading new information to FIRMS can be improved, also considering the opportunity of updating the fisheries reports as per past SSC recommendation;
- the FCWC-FIRMS partnership arrangement (See Appendix 1).

Resources

- [CECAF Marine Resource fact sheets](#)
- [CECAF Fishery fact sheets](#)
- [CECAF Publications](#)
- [FIRMS Stocks and Fisheries map viewer](#)

Appendix 1 - Assessment of CECAF-FIRMS reporting status

Marine Resource inventory and status reports

- 286 records in the inventory, 172 reports published as fact sheets.

The main sources of information used for any required update of the marine resources inventory, and production of fact sheets were:

- FAO. 2016. Fishery Committee for the Eastern Central Atlantic, Report of the seventh session of the Scientific Sub-Committee, Tenerife, Spain, 14–16 October 2015 / Comité des pêches pour l'Atlantique Centre-Est Rapport de la septième session du Sous-Comité scientifique. Tenerife, Espagne 14-16 octobre 2015. FAO Fisheries and Aquaculture Report / FAO Rapport sur les pêches et l'aquaculture No. 1128. Rome, Italy.
- FAO. 2016. Report of the FAO Working Group on the Assessment of Small Pelagic Fish off Northwest Africa. Casablanca, Morocco, 20–25 July 2015 / Rapport du Groupe de travail de la FAO sur l'évaluation des petits pélagiques au large de l'Afrique nord-occidentale. Casablanca, Maroc, 20-25 juillet 2015. FAO Fisheries and Aquaculture Report/FAO Rapport sur les pêches et l'aquaculture No. 1122. Rome, Italy/Italie.
- FAO. 2016. Report of the FAO/CECAF Working Group on the Assessment of Demersal Resources – Subgroup North. Fuengirola, Spain, 18–27 November 2013. / Rapport du Groupe de travail FAO/COPACE sur l'évaluation des ressources démersales – Sousgroupe Nord. Fuengirola, Espagne, 18-27 novembre 2013. CECAF/ECAF Series/COPACE/PACE Séries. No. 15/77. Rome, Italy/Italie.
- FAO. 2015. Report of the FAO/CECAF Working Group on the Assessment of Small Pelagic Fish – Subgroup South. Pointe Noire, Congo, 17–23 March 2014. Rapport du Groupe de travail FAO/COPACE sur l'évaluation des petits poissons pélagiques – Sous-groupe Sud. Pointe Noire, Congo, 17-23 mars 2014. CECAF/ECAF Series / COPACE/PACE Séries No. 15/75 Rome, FAO. 157 pp.
- FAO. 2015. Report of the FAO/CECAF Working Group on the Assessment of Demersal Resources – Subgroup South. Accra, Ghana, 15–24 November 2011 / Rapport du Groupe de travail FAO/COPACE sur l'évaluation des ressources démersales – Sous-groupe Sud. Accra, Ghana, 15-24 novembre 2011. CECAF/ECAF Series/COPACE/PACE Séries. No. 15/76. Rome, Italy/Italie.

Fishery inventory and status reports

- 289 records in the inventory, 77 reports published as fact sheets.

The main sources of information used the fisheries inventory, and production of fact sheets were:

- Validated inventories and fact sheets have been published for 6 countries: **Angola, Togo, Côte d'Ivoire, Gabon, Guinea and Spain**. Reporting year is mostly **2011**, updates are expected.

- Validated inventories are pending for publication for 3 countries: **Morocco, Benin and Congo**. Information was discussed and validated with data owners but green light for publication has not yet been given.
- Draft inventories are available for 6 countries:
 - **Democratic Republic of Congo, Senegal and Mauritania;**
 - In a preliminary stage for **Ghana, Nigeria and Liberia**.

Appendix 2- FIRMS Partnership Arrangement, Annex 2

Information to be contributed to FIRMS by the Committee of Fisheries for the West Central of the Gulf of Guinea (FCWC)

The Committee of Fisheries for the West Central of the Gulf of Guinea (FCWC) will contribute to FIRMS along the following lines:

Context

The Committee of Fisheries for the West Central of the Gulf of Guinea (FCWC) is a sub-regional organization operating within the Eastern Central Atlantic region (FAO Area 34). FAO, as FIRMS partner, contributes to the partnership for the Eastern Central Atlantic region through the Fishery Committee for the Eastern Central Atlantic (CECAF), a FAO body under Article VI of the FAO Constitution. As per FIRMS agreement, CECAF with its Scientific Sub-Committee (SSC) has a primary responsibility for reporting on the status of marine resources, and a corporate responsibility for the overall consistency of the marine resources and fisheries inventory, as well as overview of strategic and policy aspects. In the FIRMS context, FCWC can strengthen the capacity to provide information on the status and trends of the fishery sector for the West Central of the Gulf of Guinea and the underlying Member Countries, by fulfilling a key role regarding the provision of updated quantitative and qualitative information on inventoried fisheries.

1. Data and statistical information

FCWC with the overarching goal “to ensure the sustainable development of the fisheries resources in the FCWC Convention Area” and its strategic objective to “strengthen cooperative research and ensure that resource-related decisions are based on sound knowledge, scientific methodology and best information available” is responsible to “promote the development of standards for the collection, exchange and reporting of fisheries data”.

Reports on the status of fisheries and their management: FCWC is the focal point for the West Central Gulf of Guinea sub-region and coordinates the countries submission of fishery information. National inventories of fisheries including relevant fishing activities, production systems and fisheries management can be structured for uploading and maintained in FIRMS. References to bibliography used to structure and update the inventories will be provided. Fishery reports will be updated by Countries on a routine basis.

Data: Key data for fishing unit identification including species (target and bycatch), fishing area, vessel type, gear, flag state, and management authorities relevant to fisheries will be

reported by participating countries to the FCWC Secretariat. Available data from the FCWC regional statistical database can be extracted to feed FIRMS fisheries reports where appropriate, e.g. CPUE, landed value, gross value added, etc.. Data will be made available according to FIRMS fisheries inventory protocols and where possible also through automated procedures (e.g. dynamic data feed from FCWC Regional Database).

Socio-economic information: Any other relevant information on fishery sector for the FCWC region including socio-economic information on the fisheries.

Regulations and management: Information on fisheries management: policy framework, management authorities, regulations and legislation under FCWC mandate will be included in FIRMS, if available. Information and data on Fishery Management Units' will be provided when available.

2. **Metadata and information management**

Methods of collection and processing: The information contributed to FIRMS may result from countries submissions, reports and publications, and statistical yearbooks. For consistency and efficient streamlining, the FCWC-FIRMS fisheries inventory is aligned with the fishing units defined in the FCWC Regional Database (see Table 1). This inventory is very similar to the pre-existing CECAF inventory of fisheries and is to be considered as a possible update of such inventory. Where possible, efforts will be made towards automatically feeding the FCWC-FIRMS fisheries inventory with updated statistical indicators. Annual data calls will be launched each year [month to be proposed by FCWC] by FIRMS Secretariat in close consultation with the FCWC-FIRMS focal point

Ownership and responsibilities: Member Countries retain primary ownership (and control) for the content of the fisheries inventory and retain accordingly primary ownership of national inventories, in line with the protocol for fisheries inventories adopted by CECAF³. [...To be finalized in agreement with CECAF]

Further, FCWC will be responsible of all descriptions of itself including all text outlining its responsibilities and accomplishments wherever presented by web pages linked to or referenced by FIRMS, or web pages developed within FIRMS. This shall be accomplished by establishment of appropriate editorial and ownership security privileges within FIRMS. In cases where an item has joint ownership, FCWC and one of the FIRMS Partners, both entities shall provide clear indication of ownership of fact sheets.

Standards to be used in this Partnership Agreement: The information to be contributed by FCWC will conform, where possible, with the Information Management Policy established by the FIRMS Steering Committee, and with the regional conventions agreed upon for fisheries inventories by the CECAF_SSC.

Bibliographical sources: Links to source FCWC reports or other sources will be provided in the Fisheries fact sheets, while relevant bibliographic sources are contained in these reports, and links to source reports provided as far as possible.

³ Par. 52. Report of the sixth Session of the Scientific Sub-Committee Accra, Ghana, 7–9 September 2011
<http://www.fao.org/docrep/015/i2443b/i2443b.pdf>

3. **Data and information security**

All contributions by FCWC will be in the public domain.

4. **Collaborative institutions**

FCWC is the FIRMS signatory Partner and as such doesn't include any collaborative institutions. Nevertheless, FCWC works closely in collaboration with the regional organization Fishery Committee for the Eastern Central Atlantic (CECAF).

5. **Additional entitlements**

Beside the participation in FIRMS meetings (FSC and TWG), FCWC staff and FCWC participants will be entitled to participate in workshops or special courses organized by the FIRMS Secretariat (FAO).

When required, this Annex may be revised by mutual consent.

Table 1. List of fisheries reported by FCWC Member Countries

Source: FCWC-FIRMS inventory, 2017 (in progress)

FISHERY: “A Fishery is an activity leading to the harvesting of fish, within the boundaries of a defined area. The fishery concept fundamentally gathers indication of human fishing activity, including from economic, management, biological/environmental and technological viewpoints (FIRMS 2006, modified from FAO glossary of fisheries)”.

A statistical **fishing unit** is a particular type of fishing activity, conducted by a single flag country using a vessel and its major fishing gear.

Statistical Fishing units – validated by FCWC as fisheries for FIRMS	Country
Artisanal purse seine small pelagic fishery - coastal zone within 5nm	Bénin
Artisanal encircling gillnet demersal fish fishery - coastal zone within 5nm	
Artisanal encircling gillnet barracuda and shark fishery - coastal zone within 5nm	
Artisanal beach seine small pelagic fishery - coastal zone within 5nm	
Artisanal gillnet flyingfish fishery - coastal zone within 5nm	
Artisanal net small pelagic fishery - coastal zone within 5nm	
Bottom trawl demersal fish fishery - off 5nm	
Artisanal set gillnet demersal fish fishery - coastal zone within 5nm	
Artisanal handlines and pole and lines demersal fish fishery - coastal zone within 5nm (coral reef)	
Bottom trawl southern pink shrimp fishery - off 5nm	

<p>Industrial sardine fishery - Shelf area</p> <p>Artisanal purse seine fishery - Abidjan, west of Abidjan</p> <p>Artisanal gillnet fishery</p> <p>Artisanal beach seine fishery - west of Abidjan</p> <p>Bottom trawl fishery - Eastern littoral shelf area</p> <p>Lines demersal fishery</p> <p>Bottom trawl southern pink shrimp fishery</p> <p>Foreign pole and line tuna fishery</p> <p>Foreign purse seine tuna fishery</p> <p>Artisanal driftnets fishery</p>	Côte d'Ivoire
<p>Coastal pelagic fishery</p> <p>Industrial purse seine fishery (no industrial purse seiners operate)</p> <p>Semi-industrial purse seine fishery</p> <p>Artisanal purse seine fishery</p> <p>Artisanal set gillnet fishery (not encircling gil nets)</p> <p>Artisanal beach seine fishery</p> <p>Demersal fishery</p> <p>Demersal fish fishery</p> <p>Industrial trawl fishery</p> <p>Semi-industrial trawl fishery</p> <p>Artisanal hook and line fishery</p> <p>Artisanal bottom handlines and pole and lines fishery</p> <p>Artisanal set gillnet fishery</p> <p>Artisanal driftnet tuna and shark fishery</p> <p>Cephalopods fishery</p> <p>Industrial trawl cuttlefish fishery</p> <p>Crustaceans fishery</p> <p>Outrigger trawl fishery</p> <p>trawl pink shrimp fishery</p> <p>Tuna fishery</p> <p>Pole and line tuna fishery</p> <p>Purse seine tuna fishery</p>	Ghana
<p>Coastal pelagic fishery</p> <p>Artisanal small pelagic fishery</p> <p>Artisanal encircling gillnet fishery</p> <p>Artisanal pure seine fishery</p>	Liberia

Artisanal beach seine fishery Artisanal set gillnet fishery Artisanal hooks and lines fishery Artisanal gillnet fishery Industrial Fisheries Industrial Fin-Fish fishery Industrial shrimp fishery	
Coastal pelagic fishery Artisanal pelagic fish bonga shad and sardinella fishery Demersal fishery Demersal fish fishery Bottom Trawl forktail and scorpionfish fishery Coastal bottom trawl fishery Coastal artisanal fishery Crustaceans fishery Industrial freezer trawlers southern pink shrimp fishery Coastal semi-industrial freezer trawlers shrimp fishery Coastal Artisanal brown guinea shrimp fishery Estuaries artisanal prawn fishery Tuna fishery Offshore water tuna fishery	Nigeria
Artisanal purse seine small pelagic fishery - coastal zone within 3nm Artisanal encircling gillnet small pelagic fishery - coastal zone within 3nm Artisanal encircling gillnet barracuda and shark fishery - coastal zone within 3nm Artisanal beach seine fishery - coastal zone within 3nm Artisanal gillnet exocets and bigeye grunt fishery - coastal zone within 3nm Industrial trawl demersal fish fishery - EEZ off 8nm Swordfish, Shark and Sailfish longline fishery - Togolese waters Bottom trawl southern pink shrimp fishery - EEZ off 8nm Artisanal handlines and pole and lines demersal fish fishery - coastal zone within 3nm Artisanal set gillnet threadfin and drum fishery - coastal zone within 3nm	Togo

Table 2. Regional harmonization of Fishing Units

Source: Report of the final workshop TCP/RAF/3512 “Strengthening routine fisheries data collection in West Africa”. Cape hotel, Monrovia, Liberia, 20-24 November 2017.

FCWC Regional database	National database	Country
Beach seine	SP (Senne de Plage)	Benin
Beach seine	ghana SP	Côte d’Ivoire
Beach seine	Beach seine	Ghana
Beach seine	Senne plage	Togo
Dug out Gill net	monoxyle FM	Côte d’Ivoire
Dug out Hook and Line/longline	monoxyle PA	Côte d’Ivoire
Dug out Hook and Line/longline	Kru Hook and line	Liberia
Dug out Purse seines	monoxyle ST	Côte d’Ivoire
Ghana type Gill net	FMCF 2 (Soovi; Tounga; filet à requin; filet à langouste; filet à raie)	Benin
Ghana type Gill net	FMD (Filet à sardinelle; Filet à exocet)	Benin
Ghana type Gill net	ghana FM	Côte d’Ivoire
Ghana type Gill net	DRIFT GILLNET	Ghana
Ghana type Gill net	Fanti Gill nets	Liberia
Ghana type Gill net	Filet flottant	Togo
Ghana Type Hook and Line	LI (Ligne et Autres)	Benin
Ghana type Hook and Line/longline	ghana PA	Côte d’Ivoire
Ghana type Others	Ghana boat	Nigeria
Ghana type Purse seines	ST (Senne tournante)	Benin
Ghana type Purse seines	ghana ST	Côte d’Ivoire
Ghana type Purse seines	APW	Ghana
Ghana type Purse seines	Senne tournante	Togo
Ghana type Ring net	Fanti Ring nets	Liberia
Ghana type Ring net	Kru Ring nets	Liberia
Ghana type Set net	Fanti Set nets	Liberia
Ghana type Set net	Kru Set nets	Liberia
ghana Gill net	Filet maillant de surface	Togo
Ghana Hook and Line/longline	Ligne	Togo
GhanaType Gill net	Filet à requin	Togo
Planked canoe Hook and Line/longline	Hook and line	Ghana
Planked Gill net	FMCF 1 (Soovi; Tounga; filet à requin; filet à langouste; filet à raie)	Benin
Planked Gill net	Kru Gill nets	Liberia
Planked Gill net	Filet maillant de fond	Togo
Planked Hook and Line/longline	Kru Trap Line	Liberia
Planked Other	Planked Canoe	Nigeria
Planked Set net	SET NET	Ghana

