

WESTERN CENTRAL ATLANTIC FISHERY COMMISSION (WECAFC)

SIXTEENTH SESSION

Guadeloupe, 20-24 June 2016

Update on progress made under the WECAFC-FIRMS Partnership

Executive summary

WECAFC-FIRMS is a specific partnership endorsed by WECAFC for the collation and dissemination of WECAFC stocks and fisheries status reports under the Fisheries and Resources Monitoring System (FIRMS) partnership. The structured FIRMS database enables a strong Web application framework (WAP) presence to its partners, the latter important in today's internet era. WECAFC and other partners in the region have the opportunity to benefit from enhanced visibility and increased return on investment.

The WECAFC-FIRMS regional database project, funded by DG-MARE (EU), aims to strengthen reporting capacities among regional and national experts on the status of stocks and fisheries under regional Fishery Management plans. The process is demand driven (i.e., supplying data for supporting management plans) and should lead to developing a regional database for data sharing with the goal to support fisheries monitoring and stock assessments, and to identify data collection and capacity weaknesses and recommend support to national data collection and data management where necessary. One such example of national support to data collection and dissemination is the ongoing FAO Technical Cooperation Project (TCP) in Bahamas.

A WECAFC-FIRMS Data workshop was held in Barbados on 19-21 January 2016 and was attended by thirteen countries, two EU overseas territories, and four regional organizations. The workshop produced recommendations and identified best practices for moving forward the implementation of a regional database in support to fishery management and stock assessment. The workshop report and its executive summary can be accessed at [*URL to be provided*]

The WECAFC FIRMS regional pilot database action is still ongoing, with expectations over the coming months an effort to formulate project concept notes to strengthen selected national fisheries data collection and information systems, to harmonize logbooks and related data and information collection in the region, pilot development of a regional fisheries database, publish fisheries inventories relevant to the lobster, queen conch and flying fish Fishery Management Plans, and add to the FIRMS website a Spanish language component in order to disseminate important fish stock inventories

and fisheries information in Spanish. Extension of this activity to the OSPESCA sub-region has also been considered.

The compilation of the fishery inventories for the three focused species is expected to be completed by beginning of 2017 for several countries, and WECAFC-FIRMS factsheets have been published for some countries.

TORs have been formulated (see Appendix) with the objective to further the objectives of the FIRMS WECAFC database project throughout the WECAFC-CRFM-OSPESCA institutional framework. These TORs cut-across the existing Species working groups, and require a WECAFC-CRFM-OSPESCA transversal working group to build on existing Data/Statistics/ Methods working groups (CRFM, OSPESCA, ICCAT) or to be established in ad'hoc manner under the MoU.

Regarding statistical and monitoring objectives, FAO's Fisheries and Aquaculture Department is also engaged in various interactive and synergistic projects concerning the WECAFC region and implemented at various scales (national, regional and global):

- national level: the development of a Fisheries Management Information System (FisMIS) for The Bahamas through project TCP/BHA/3501 which aims at a comprehensive fisheries statistical monitoring system for the Bahamas.
- regional level, the CLME+ project and its statistical and monitoring objectives, where three demonstration projects are expected to contribute to the "Status of Marine Fisheries" section of the CLME+ Portal/Report. This is expected to be achieved through linkages with FIRMS and implementation of a regional database, by furthering the work initiated through the WECAFC-FIRMS project.
- At global level, the BlueBRIDGE project funded under the EU Horizon2020 framework (http://cordis.europa.eu/news/rcn/128416_en.html). BlueBRIDGE strengthens the capacities of the iMarine platform. WECAFC could benefit from iMarine/BlueBRIDGE through three components: the "Global record of stocks and fisheries" which will federate knowledge on the location and status/trends of stocks and fisheries across three major global sources (including FIRMS); the Virtual Research Environments (VRE) for Stock Assessment and Capacity Building, which will potentially offer e-services for the planned WECAFC Regional database in support to FMPs; data services on spatial planning to support impact assessment on MPAs on socio-economic and environmental performance indicators, implemented through collaboration with UNEP-Grid Arendal and Joint Research Center ISPRA (JRC-ISPRA)'s Biopama.

Actions requested from the Commission

- The Commission is requested to comment on relevant aspects of the WECAFC-FIRMS Partnership development and related projects described.
- The Commission, through its members and partners, is invited to support mobilization of national participation in the follow-up actions of the WECAFC-FIRMS Data workshop (Jan 2016) towards the realization of the regional database in support to fishery management. This includes provision of national statistics/data to the pilot Regional Database to properly inform required actions towards its smooth functioning.
- The Commission is invited to review and comment the proposed TORs in support to a Regional Database (see Appendix), for eventual endorsement and implementation as part of the WECAFC-CRFM-OSPESCA bodies / working groups .

- The Commission, is invited to comment on and eventually endorse the proposed WECAFC-CRFM-OSPESCA collaborative activities planned under the CLME+ and other regionally supported projects:
 - During the second part of 2016 / early 2017, a joint WECAFC-OSPESCA-FIRMS workshop for the design of the Regional Database in support to Shrimp and GroundFish, and Lobster FMPs.
 - By mid-2017, a joint WECAFC-OSPESCA-CRFM transversal statistical working group to address issues related to data sharing and harmonization as per the TORs in the appendix. It will develop recommendations for review by the species working groups and eventually for endorsement by WECAFC at its Commission meeting.

Further background information

FAO provides the secretariat for the FIRMS partnership. FIRMS has as direct goal to facilitate access to high-quality information on the status and trends of global marine fishery resources, fisheries and their management. The overarching aim of the FIRMS partnership is to provide decision-makers with sufficient and reliable information to develop effective fisheries policies in accordance with the Code of Conduct for Responsible Fisheries.

The partnership, steadily growing, now brings together 14 Institutions representing 19 (RFBs)¹, and disseminates through the FIRMS website status and trends reports structured on an inventory backbone of over 1,000 marine resource stocks and about 200 fisheries.

On-going efforts aim at 1) broadening geographic and thematic coverage through engagement of new partners; promoting the existence/potential of both stocks and fisheries inventories and reports to national agencies and other stakeholders for informing the best usage of FIRMS fact sheets; 2) addressing the needs expressed by users involved in reporting on the state of the Marine environment, and in marine seafood traceability and certification etc.; 3) facilitating information sharing, dissemination and reporting by FIRMS partners, and 4) timelier reporting of partner's contributions.. The latter includes a standard protocol for streamlining national contributions on fishing activities through the partner RFBs and their capacity building for developing regions (e.g. CECAF, SWIOFC, RECOFI, and WECAFC).

FIRMS can also play a catalytic role in the development of regional databases in support to the regional fishery management plans through enabling its partners to tap into the knowledge and experience from a well-established, cost-effective system. Capacity building facilities are also provided by FIRMS.

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 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 Organization (SEAFO).

At [WECAFC 14](#) (February 2012) the Commission reiterated the need for improving the fisheries data and information collection to reduce critical data gaps, which are undermining any significant effort to improve fishery management. Limitations in data capacities to support decision making also constitute one of major point of immaturity. In the process to determine whether WECAFC should become a Regional Fisheries Management Organization (RFMO) it has become apparent again that existing data limitations can lead to un-informed management of the resources and the fisheries.

This need for improved data and information was reiterated again during [WECAFC 15](#) (March 2014) and hence it was agreed to dedicate one of the four technical Focus Areas in the WECAFC Strategic Plan (SAP) for 2014-2020 to this subject with the support of the current Programme of Work including activity 2.4 “Improved fishery and aquaculture data collection, analysis and dissemination at regional and national level” in support of this subject.

In the same meeting, the WECAFC Commission endorsed the Fisheries and Resources Monitoring System (FIRMS) partnership following the partnership proposal and arrangement formulated during the [WECAFC-FIRMS Workshop on Marine Resources and Fisheries Inventories](#) (November 2013). The Commission also expressed the need for capacity building on the use of FIRMS and emphasized that the work should concentrate initially on those fisheries and stocks that are commercially most important to the membership.

The arrangements established through the FIRMS protocol foresaw the appointment of three focal points: the WECAFC-FIRMS focal point has been appointed in the person of Ms. Nancie Cummings (NOAA); a CRFM-FIRMS focal point has been appointed by CRFM in the person of Ms. June Masters; a similar arrangement is currently being experimented with SICA/OSPESCA. WECAFC is grateful to their respective institutes for their in-kind contribution to FIRMS activities in the region.

WECAFC-FIRMS project - Strengthening national data collection and regional data sharing through FIRMS to support priority regional fishery management plans in the WECAFC area

The EU - DG MARE funded project arose along the needs indicated by the WECAFC 14th Commission and the pilots selected for support by this project are the three priority regional fishery management plans, spiny lobster, flying fish, and Queen conch. In addition other information can contribute to the FIRMS inventories including billfishes, shrimp and ground fish of Guianas-Brazil shelf as part of the CLME Strategic Action Programme (SAP) and its CLME+. Finally, through the WECAFC-FIRMS partnership, the development of a regional database, focusing on data and capacity improvements, data sharing and dissemination will be driven.

The project is governed through a task force, which includes members of the WECAFC Secretariat, of the FIRMS Secretariat, and the FIRMS focal points for WECAFC and CRFM, as well as on an experimental basis a FIRMS focal point for SICA-OSPESCA.

The project is expected to deliver:

1. WECAFC inventories on stocks and fisheries in support of the three FMPs published in FIRMS (spiny lobster, flying fish, and Queen conch), including capacity building for national inventories in a few pilot countries;
2. Prototype of a Regional DataBase with a pilot implemented, including a draft data sharing policy document developed for review in WECAFC-SAG and other relevant sub-regional forums (CRFM, OSPESCA, ...), and a capacity building plan;
3. Plan for building capacity and strengthening of selected national data collection systems, including through appropriate working groups mandated with TORs to carry forward the consensus agreements on data collection, data sharing, data harmonization, IT requirements for a regional database;
4. Identification of a new working group in the region for furthering the objectives of the FIRMS WECAFC database project and collaboration with existing working groups; review of WG TORS and recommendations for revisions as needed.

The FIRMS-WECAFC data workshop, a major milestone in the project deliverables, has been convened over 3 days in January 2016 with the participation of thirteen countries, two EU overseas territories, and four regional organizations. The workshop produced recommendations and action plan as reported in the executive summary section. See also workshop report and its executive summary at *[URL to be provided]*.

The project results will allow its partners to make better-informed fisheries management decisions in support of the development of fisheries management plans at national and regional (WECAFC/CRFM/OSPESCA) level. The pilot regional database will be eventually available for use by the 34 members and its application will be promoted and serve as the foundation for other resource groups. The activities and results achieved through this project will be further expanded/ amplified through the CLME+ project, and other follow-up funding.

TCP Bahamas (TCP/BHA/3501) - development of a Fisheries Management Information System

Under output 2 of the TCP/BHA/3501 project, “An established and functioning Fisheries Management Information System (FisMIS) for The Bahamas”, two sets of complementary activities have been identified to lead to the implementation of the FisMIS: statistical activities and IT activities, with the aim “to get accurate fisheries statistics in a timely manner”.

Regarding statistical activities, an assessment mission in the Department of Marine Resources (DMR) has been carried out and a very detailed report produced with the baseline description and the proposal for a new Data Collection Framework (DCF). This new DCF proposes to strengthen the current statistical reporting which is based on administrative records (provided by exporting companies or processing plants for largely exported species like lobster) partially completed by motherships landing form collection. The proposed upgrade envisages a comprehensive system implementing a log book for large vessels and an extension to small scale and recreational fisheries through a sample based survey for selected islands.

Additionally, a review of the existing IT systems in DMR and a comprehensive need gathering were conducted during several missions by Fisheries Information System expert to build the foundation of the FisMIS. The FisMIS is dedicated to produce

statistics, but is also tasked to manage certificates and permits as some of them provide frame data to raise the said statistics.

The FisMIS is now operational with all its components: managing fishermen, companies and vessels registries including permits and certificates, data upload for purchase orders (required for lobsters certification scheme), data upload for the logbook landing forms, activity sheets and sample base survey (telephone survey and landing forms), statistics computation and reporting.

A pilot phase started in February 2016 in Abaco to allow DMR to validate the new data collection framework and testing the system in a routine use by staff. Required corrective actions will follow after which the final version will be available for a complete roll-out by DMR to all the Bahamas family islands.

CLME+ project - Statistical and monitoring activities

The WECAFC Secretary and the FAO Statistics and Information branch Chief (also FIRMS Secretary) attended the first meeting of the CLME+ project steering committee and project inception workshop convened in Cartagena, Colombia, in January 2016.

The project includes under component 3 a series of four Demonstration Projects that will support the progressive transition to an ecosystem approach for the:

- Caribbean spiny lobster fisheries (Responsibility OSPESCA - Output 3.1),
- the four-wing flyingfish fisheries (Responsibility CRFM - Output 3.2)
- the North Brazil Shelf shrimp and groundfish fisheries (Responsibility WECAFC - Output 3.3);
- a more holistic, ecosystem-based management approach for selected sites within the CLME and NBSLME (Responsibility UNEP-CEP - Output 3.4).

According to the project document, the first three demonstration projects are expected to contribute to the “Status of Marine Fisheries” section of the CLME+ Portal/Report, and this will be achieved through linkages with FIRMS and implementation of a regional database.

Collaboration scenarios on statistical activities were discussed between the two FAO officers and the CRFM and OSPESCA Secretaries, positioned within the broader collaboration context set-up with the WECAFC-CRFM-OSPESCA MoU. There was agreement in principle that statistical activities are a priority and that workshops would be jointly organized as applicable across the three Pilot projects where transversal statistical, data collection and data sharing activities are identified. A letter to both OSPESCA and CRFM will formalize a possible plan and both OSPESCA and CRFM will follow-up with their respective member countries. The general scenario was outlined:

- For the CRFM countries, agreements reached at the WECAFC-FIRMS workshop (see workshop report) should be formally endorsed through relevant institutional processes;
- OSPESCA expects progress on achieving a regional harmonized Vessel registry. Furthermore countries still need to be engaged in FIRMS under the lobster working group, and a regional database in support to this working group is expected to be developed. The capacity building priority should prioritize on two countries (El Salvador and Panama) with weaknesses in their statistical data collection system.
- The countries involved in the WECAFC sub-project “Shrimp and Groundfish of the Brazil-Guyana continental shelf” are Brazil, Guyana, Suriname, Trinidad and

Tobago, and French Guyana and probably Venezuela will be collaborating. Existing monitoring systems can be strengthened by integrating and connecting various components for industrial fisheries, and by improving statistical data collection systems regarding small scale fisheries. A regional data base (RDB) of catch-effort-socio-economic and biological data needs to be set-up to support the sub-regional FMP, and report the state of marine fisheries to the CLME+ portal through FIRMS. A general strategy was depicted as follows: support to the improvements of the existing fisheries information systems will proceed through the Rebyc-LAC in close connection with FAO project JPN/228 which is expected to deliver a software framework to Trinidad and Tobago. CLME+ will focus on the regional component with the development of the RDB including regional vessel registry as applicable, and FIRMS.

- During the early 2017, a joint WECAFC-OSPESCA-FIRMS workshop could be organized on the design of the Regional Database and the countries involved in their respective sub-projects.
- By mid-2017, a joint WECAFC-OSPESCA-CRFM transversal statistical working group could be organized with the task to address issues related to data sharing and harmonization as per the TORs agreed upon at the WECAFC-FIRMS data workshop. The workshop will be informed by the hands-on experience gained during the pilot implementation of the RDB in the various sub-projects. It will develop recommendations for review by the species working groups and eventually for endorsement by WECAFC at its Commission meeting.

BlueBRIDGE project (iMarine platform)

FAO's Fisheries and Aquaculture Department is engaged in the new BlueBRIDGE project (September 2015 to February 2018) funded under the EU Horizon2020 framework. BlueBRIDGE will strengthen the capacities of the iMarine collaborative scientific platform, a data infrastructure in support to Ecosystem Approach to Fisheries (EAF) (EAF) and conservation of living marine resources. BlueBRIDGE can benefit WECAFC and its regional partners from two perspectives:

FIRMS is specifically involved in the component "Global record of stocks and fisheries" (GRSF) which will federate knowledge on status/trends of stocks and fisheries across three major global sources of information: the Fisheries and Resources Monitoring System (FIRMS), RAM Legacy Stock Assessment Database and FishSource.

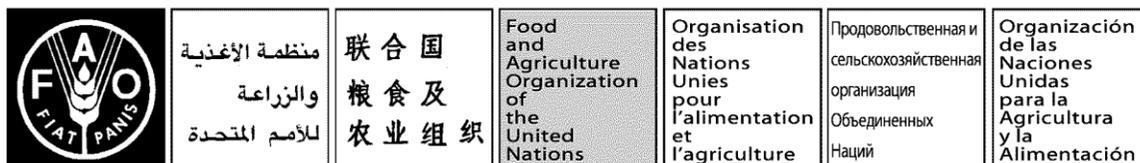
By delivering unique stocks and fisheries Identifiers across these sources, the GRFS will be in a position to deliver a set of e-services on a critical mass of information on stocks and fishery status, and is expected to be of major interest to a variety of researchers involved in traceability of fishery products, and to stakeholders involved in "regional or global state of stocks indicators". As such, the GRSF and its FIRMS leadership might be instrumental to WECAFC objectives such as contributing to the CLME+ State of the Marine Environment.

BlueBRIDGE will deliver Virtual Research Environments² (VREs) for Regional databases in support to stock assessment and fisheries management, as well as capacity building to support the uptake of such facilities by user. The WECAFC regional database objective could also benefit from these BlueBRIDGE services; WECAFC decision making on this topic can be guided through the outcome of the Pilot regional database currently developed under the joint EU WECAFC-FIRMS and BlueBRIDGE projects.

² Virtual Research Environments are cloud-based workspaces offering data services for a dedicated user community

Considering these potential benefits and upon invitation from the project consortium, the WECAFC Secretariat has appointed the WECAFC-FIRMS focal point (Ms. Nancie Cummings) as WECAFC representative in BlueBRIDGE's External Advisory Board. This will facilitate the identification of possible synergies and co-funding opportunities with projects of the WECAFC region. On March 2016, the WECAFC-FIRMS focal point attended the FIRMS-BlueBRIDGE Technical Working Group meeting in which detailed requirements for the GRSF were formulated and discussed.

More information on BlueBRIDGE at <http://www.bluebridge-vres.eu/>



Appendix: Proposed TORs for the WECAFC-CRFM-OSPESCA working groups in support to a Regional Database (RDB)

Working groups (expected results in the matrix cells)	Species working groups under CRFM, OSPESCA, CFMC	Ad'hoc WECAFC-CRFM-OSPESCA transversal working group (established in ad'hoc manner under the MoU, building on existing Data/Statistics/Methods working groups (CRFM, OSPESCA, ICCAT))	WECAFC, CRFM, OSPESCA Commissions, under the collaboration MoU
Objectives/ ToRs			
OBJECTIVE - Data collection at national level (provide recommendations to address data collection and sharing challenges in the WECAFC region)			
<ul style="list-style-type: none"> Identify issues (gaps, deficiencies), challenges and best practices in data collection in the region, and provide recommendations on how to address issues and challenges, identify and recommend best practices for the region including how to involve private interests in data collection (i.e., industry) 	Identify, recommend and keep under review primary data types needed for monitoring and evaluation, including data needs to characterize social and economic importance of resources	Data collection best practices disseminated	Progress acknowledged, capacity building project formulation supported, priorities and directions formulated
<ul style="list-style-type: none"> Develop standard data collection formats and related minimum guidelines for collection 	Formulate data needs to	Regional standard logbook and guidelines for Caribbean	

	inform FMPs; Formulate relevant formats, including frequency of, reporting, and summarizing	artisanal and industrial fisheries Other regional data collection standards, as requested (e.g., socio-economic data)	
OBJECTIVE - Data sharing and harmonization at regional level (provide recommendations to address open data sharing challenges at international level for the benefit of fisheries communities, research and management communities and to improve the ability to manage fisheries resources)			
<ul style="list-style-type: none"> Provide recommendations on data to be shared at regional level, 	by species, list of indicators (e.g., catch, cpue, mean length) and related time-space-gear and other dimensions resolution	List of data to be shared among WECAFC countries in a RDB, including regional standards and classifications	General sharing and harmonization policies reviewed and eventually endorsed, issues discussed, overall directions provided
<ul style="list-style-type: none"> Define practical modalities to exchange data 	Data update frequencies, responsibilities ...	Formats, metadata, policies and best practices	
<ul style="list-style-type: none"> Provide recommendations on data harmonization to allow data collation at regional level. 	Harmonized concepts and definitions, e.g. effort units, biological measures, conversion rates	List of relevant international Metadata formats, and guidelines for their use at regional/national level	Progress acknowledged, issues reviewed
<ul style="list-style-type: none"> Recommend standards and classifications to be used at regional level 	Relevant classifications to be used at regional level in support to FMPs, e.g. relevant geospatial units, ...	List of relevant international standard classifications, mapping opportunities with regional/national classifications	

<ul style="list-style-type: none"> Recommend mapping between national and regional classifications, recommend best practices for data mapping. 	Mappings validated	Procedures, Tools, best practices to create and maintain mapping between national classifications and regional ones Mappings available as data services	
OBJECTIVE - Countries data reporting to international bodies (i.e. CRFM, FAO, ICCAT, OSPESCA) (provide recommendations to streamline reporting from national, through to regional and international levels, including through collaborative arrangements)			
<ul style="list-style-type: none"> Address multiple reporting standards and format issues, sharing experiences and lessons learned Formulate recommendations and guidelines 		List of suitable formats (including classifications) for data sharing at regional and international level. Methods, tools and procedures for harmonization of national data to RFBs formats, including list of mapping rules. Mechanisms formulated to coordinate / streamline exchanges among regional fishery bodies and other intergovernmental institutions operating at global level.	Streamlining and coordination mechanisms among RFBs reviewed, commented and endorsed
OBJECTIVE – IT management and maintenance of the Regional DataBase (RDB) (provide recommendations for a cost efficient and sustainable management and maintenance of the Regional DataBase)			
<ul style="list-style-type: none"> Provides RDB specifications, priorities, governance, policy mechanisms 	RDB specifications from FMP business view point; priorities formulated	RDB specifications, governance and policy are drafted	Specifications, governance, policy validated

<ul style="list-style-type: none"> Formulate development phases and participation mechanisms project and 	Senior users identified	Development and implementation roadmap drafted / Deliverable validation;	Development projects reviewed / endorsed
<ul style="list-style-type: none"> Provides high level recommendations on technology and policy issues related to development, hosting and maintenance for the RDB 		Hosting and maintenance schemes proposed and validated;	High level strategies reviewed / endorsed
OBJECTIVE – Performance review of the RDB			
<ul style="list-style-type: none"> Conduct periodic review against a set of metrics 	Processes and decisions documented; Audit supported	Processes and decisions documented; Audit supported	Performance review ordered