

FIRMS Steering Committee Meeting

Tenth Session

Copenhagen, Denmark 21-24 June 2017

REPORT

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Executive Summary

The tenth session of the Fisheries and Resources Monitoring System (FIRMS) Steering Committee (FSC10) offered the opportunity to discuss several matters among eleven partners - seven members and four associate members that were represented - 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], 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]. The Committee established that the efforts carried out on timeliness of stock status reports were fruitful with a major part of the database being up-to-date, and agreed that the effort should now shift to expanding the coverage by gaining new Partner RFBs, an objective which will be facilitated by an amendment to the Partnership Arrangement. A major outcome of FSC10 is the decision that FIRMS should take ownership of the Global Record of Stocks and Fisheries currently developed under the BlueBRIDGE project and will make use of this enhanced tooling capacity to offer data services for the monitoring of national stocks monitored by countries under SDG14.4.1 'Proportion of fish stocks within biologically sustainable levels'.

This expansion of the business model will be refined during the forthcoming year for eventual presentation at COFI 33 as part of FAO's custodianship package for SDG14.4.1. During the next intersessional period the Secretariat will continue updates to FIRMS inventories, and seek for timely updates from Partners including through Data calls. Where possible, automated procedures for the fact sheets production workflow are preferred. Also, the Secretariat will continue the promotion of FIRMS (together with all partners) through capacity building activities with selected RFBs upon availability of extra-budgetary funding resources. FSC10 requested actions for improving the newly released FIRMS Stocks and Fisheries map viewer, for the display of the traffic light approach, and for the renewal of the FIRMS website. FSC10 is also expecting the FIRMS Technical Working Group members to work on the revision of some standards by carefully assessing the proposals made during the meeting and finalizing them.

ABBREVIATIONS AND ACRONYMS

| | |
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| ASFIS | List of Species for Fishery Statistics Purposes |
| BCC | Benguela Current Commission |
| CCAMLR | Commission for the Conservation of Antarctic Marine Living Resources |
| CCSBT | Commission for the Conservation of Southern Bluefin Tuna |
| CECAF | Fishery Committee for the Eastern Central Atlantic |
| CIAC | Cephalopod International Advisory Council |
| CNR | Consiglio Nazionale delle Ricerche |
| COFI | FAO Committee on Fisheries |
| CPPS | Permanent Commission for the South Pacific |
| CWP | Coordinating Working Party on Fishery Statistics |
| FAO | Food and Agriculture Organization of the United Nations |
| FCWC | Fishery Committee for the West Central Gulf of Guinea |
| FIRMS | Fisheries and Resources Monitoring System |
| FSC | FIRMS Steering Committee |
| GFCM | General Fisheries Commission for the Mediterranean |
| GRSF | Global Record of Stocks and Fisheries |
| IATTC | Inter-American Tropical Tuna Commission |
| ICCAT | International Commission for the Conservation of Atlantic Tunas |
| ICES | International Council for the Exploration of the Sea |
| IOTC | Indian Ocean Tuna Commission |
| MSC | Marine Stewardship Council |
| MoU | Memorandum of understanding |
| NAFO | Northwest Atlantic Fisheries Organization |
| NatFIRMS | National Fisheries and Resources Monitoring System |
| NEAFC | North East Atlantic Fisheries Commission |
| NPFC | North Pacific Fisheries Commission |
| OSPESCA | Central America Fisheries and Aquaculture Organization |
| PSC | Pacific Salmon Commission |
| RAM | RAM Legacy Stock Assessment Database |
| RECOFI | Regional Commission for Fisheries |

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| RFB | Regional Fishery Body |
| SDG | Sustainable Development Goal |
| SEAFDEC | Southeast Asian Fisheries Development Center |
| SIOFA | South Indian Ocean Fisheries Agreement |
| SEAFO | South East Atlantic Fisheries Organisation |
| SFP | Sustainable Fisheries Partnership |
| SPRFMO | South Pacific Regional Fisheries Organisation |
| SWIOFC | Southwest Indian Ocean Fisheries Commission |
| TWG | Technical Working Group |
| UUID | Universally Unique Identifier |
| WCPFC | Western and Central Pacific Fisheries Commission |
| WECAFC | Western Central Atlantic Fishery Commission |
| WIOFish | Western Indian Ocean Fisheries Database |
| WoRMS | World Register of Marine Species |
| VRE | Virtual Research Environment |

1. OPENING OF THE SESSION AND WELCOME (AGENDA ITEM 1)

1. The FSC10 was held at ICES Headquarters in Copenhagen, Denmark, 21-24 June 2017. The meeting was opened by Mr Marc Taconet, FIRMS Secretary, at 14.15 hours on the 21 June 2017. Ms Anna Osypchuk (ICES) and Ms Lara Salvany (ICES) welcomed the meeting participants. Mr Taconet thanked the participants for attending the meeting and ICES for hosting. He pointed out that the FIRMS Secretariat is very well supported at the moment. He reminded the meeting of some weaknesses that were highlighted during FSC9, such as the timeliness of content provided to FIRMS.
2. Ms Nancie Cummings (WECAFC), the Chairperson, thanked the ICES Secretariat for hosting the 10th FIRMS Steering Committee meeting (FSC10), the FIRMS Secretariat for organizing the meeting, and the partners and associate members for their ongoing contributions and commitment.
3. FIRMS partners present:
 - Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR);
 - Food and Agriculture 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);
 - South East Atlantic Fisheries Organization (SEAFO);

FIRMS associated member present:

- Fishery Committee for the Eastern Central Atlantic (CECAF);
- Regional Commission for Fisheries (RECOFI);
- Southwest Indian Ocean Fisheries Commission (SWIOFC);
- Western Central Atlantic Fishery Commission (WECAFC).

The list of FIRMS participants present (partners, associate members) can be found in Annex 2.

2. ADOPTION OF THE AGENDA (AGENDA ITEM 2)

4. The agenda was next reviewed (FSC10/2017/2). GFCM confirmed the delivery of a presentation on the on-going collaboration with FIRMS; and it was accommodated in the agenda as point 8b. The agenda was adopted with the proposed changes. The agenda can be found in Annex 1.

3. THE PARTNERSHIP - HOW FIRMS CAN MATCH PARTNERS OBJECTIVES (AGENDA ITEM 3)

5. With reference to FSC10/2017/4a document, Ms Cummings gave a presentation on “The WECAFC-FIRMS collaboration”. Fisheries data collection in the WECAFC region has been described as generally weak throughout the region contributing to the lack of management. Recently, through the WECAFC-FIRMS “Partnership” (WECAFC-14 2014) initiatives to strengthen the basic fisheries information have begun. Specific initiatives include developing FIRMS inventories for several important shared resource groups, defining minimum data requirements for a regional pilot data base (e.g., through developing inventories and fact sheets), developing a draft data collection framework, and developing consensus on data sharing policies for the region. The project's chief aims include: i) defining minimum data needs that feed management and stock status determinations initially prioritizing shared resources initially (flying fish, conch, lobster, recreational billfish, and shrimp and Groundfish including the development of logbooks for data collection of relevant catch, CPUE, biological data and socio-economic information, and ii) follow agreed principles relating to fisheries standards for collecting and reporting statistics.
6. FSC10 reviewed how FIRMS can support partners’ objectives, and discussed the example of the WECAFC-FIRMS partnership. This partnership is supporting the regional needs in strengthening data collection for fishery management and decision support system. WECAFC recently recognized the need for improving information on fisheries data and statistics, and became an associate member in FIRMS to develop these requirements.
7. FSC10 noted that this partnership was established by the FAO with direct involvement with the FIRMS Secretariat, to facilitate a variety of significant improvements in the region focusing on fisheries. This was a top-down approach using the FIRMS infrastructure to build regional capacity and address deficient information on status and trends of marine resources in the region. The partnership

also includes links to BlueBRIDGE projects (Blue Assessment and Blue Capacity work packages). Ms Cummings reported on recent developments in this partnership and this included activities relating to improvements in data, statistics, and assessment capacities conducted under Phase I (2015-2016) and Phase II (2017 to date). Ms Cummings also outlined future planned activities of the WECAFC-FIRMS partnership.

8. Mr Tooraj Valinassab (RECOFI) sought further information about BlueBRIDGE and the extent of stock assessments in the WECAFC region. Ms Cumming explained that BlueBRIDGE (<http://www.BlueBRIDGE-vres.eu/>) is part of the EU funded Horizon 2020 program, and the Blue Assessment work package is implementing stock assessment tools in Virtual Research Environments (VREs). WECAFC countries collect limited survey data, and there is currently no regional data collection. Countries have conducted some stock assessments; however there is no common data collection framework in the region. The BlueBRIDGE project is developing Cmsy, CPUE and length-based stock assessment models for potential application to WECAFC stocks.
9. FCS10 noted the following points:
 - One of the purposes of FIRMS is to disseminate information on the status and trends of resources and fisheries at the global level;
 - WECAFC, set up by FAO under Article VI, is applying the FIRMS 'top down' approach to develop the structure to manage and report on resources and fisheries, and to develop the underlying infrastructure, data collection framework and development of a regional database according to well established standards and agreed protocols;
 - FIRMS is providing support to WECAFC, and WECAFC's participation in FIRMS is helping FIRMS fill information gaps in the WECAFC region;
 - Completing the FIRMS inventories enabled WECAFC to create a data and statistics working group, with the final aim to collect data and conduct stock assessments;
 - The partnership is developing essential regional capacity, and this approach could also benefit other emerging organisations such as CRFM and OSPESCA is developing and disseminating data on stock status for global policy making; and
 - FIRMS's involvement in such partnerships requires some flexibility in FIRMS Secretariat activities.
10. Mr Hinton (IATTC) also noted that the overarching objective of FIRMS was to support FAO's objective to collect and disseminate information on resources and fisheries at the global scale, to support decision making. IATTC had developed the capacity to fulfill the FIRMS requirements and that approach works well. In return, FIRMS has developed software tools which are available to all partners, and some of this development may be driven by the partners. The established partners of FIRMS have demonstrated what may be achieved with the technical support of FIRMS.

11. Mr Sedzro (CECAF) sought information on how FIRMS could support the development of stock assessments and meet, for example, the needs of African countries through the NANSEN program.
12. FSC10 noted that the expertise to conduct stock assessment is not a competence of FIRMS. However, FIRMS develops and provides the infrastructure to support such assessments. In the case of WECAFC, FIRMS provided the catalyst for the development of regional expertise.
13. Mr Campanis (SEAFO) indicated that FIRMS is today mature enough for possible increasing of the coverage towards the collation of data at the national level. However, further expansion of FIRMS may require consideration of how to balance the volume of information and the quality of information.
14. FSC10 briefly reviewed some results from the online survey of the benefits derived by partners. This matter was further discussed in Agenda Item 8g.
15. FSC10 noted that the WECAFC-FIRMS partnership was a successful model for developing capacity in the WECAFC region. FSC10 agreed that such a model could be used to develop capacity in other regional organisation. However, FSC10 recognised that this represents a large volume of work which may stretch the resources of the Secretariat.

4. FIRMS MEMBERSHIP (AGENDA ITEM 4)

Progress on the development of FIRMS Partnership (Agenda item 4a)

16. Mr Taconet noted that the FIRMS partnership has not increased since FSC9. During the intersession some letters have been sent to dormant partners (SEAFDEC, NEAFC). No response was received from SEAFDEC, while NEAFC gave a positive response. A letter was sent to BCC, who expressed interest to join, as well as SPRFMO which acknowledged indicating that the invitation will be circulated among the contracting parties. Observers, such as SPC, have been indicating interest, but never finalized their actual application as a member, possibly because of obligation requested to the partners to attend meetings systematically. In the WECAFC area there is growing interest from CRFM as well as OSPESCA, who have assigned focal points to implement the WECAFC-FIRMS collaboration as associates to WECAFC. In SWIOFC there was a discussion on how to better involve WIOFish, a regional initiative collating fishery inventories across the country members of SWIOFC. A collaboration should be possibly formalized with WIOFish through SWIOFC.
17. Regarding the membership FSC10 noted that further discussion is planned in Agenda Item 8f on different options for organizations to contribute to FIRMS without having full partners responsibility (e.g., obligation to participate to meetings on own funding). That could potentially encourage some organizations to further participate. FSC10 also invited FIRMS partners to reach out to neighbouring organization to promote FIRMS.
18. Mr Taconet pointed out that the main efforts for FIRMS in this last intersessional period were not devoted towards the engagement of new partners, rather than to the

improvement of current inventories in terms of timely updates and to the development of the new application FIRMS Stocks and Fisheries map viewer as per FSC9 decisions.

Review of new prospective Partners (agenda item 4b)

19. Mr Valinassab proposed the involvement of Cephalopods International Advisory Council (CIAC) in FIRMS. The Chairperson welcomed the suggestion.
20. The membership of FIRMS was further discussed during consideration on the new Stocks and Fisheries map viewer (Agenda Item 8g) which highlighted gaps in the geographic coverage of FIRMS.

5. REVIEW OF ANNEX 2 OF THE PARTNERSHIP ARRANGEMENT (AGENDA ITEM 5)

Proposed information contributions of new Partners (Agenda item 5a)

21. There were no new contributions proposal during the intersessional period.

Proposed modifications by existing Partners (Agenda item 5b)

22. No modifications to Annex 2 of the FIRMS Partnership Arrangement were submitted during the intersessional period (such as any modifications in the type of information that is reported by the partners). However, Mr Valinassab anticipated the intention to revise the RECOFI inventory and to provide new information.

6. REVIEW OF FIRMS ACTIVITIES DURING THE INTERSESSION (AGENDA ITEM 6)

Report on intersessional activities (agenda item 6a)

23. With reference to FSC10/2017/2a document Mr Gentile delivered a presentation on "Secretariat report on Progress and Issues".
24. Seven partners provided a report of their activities: CCAMLR, CCSBT, ICCAT, ICES, NAFO, NASCO and SEAFO. The Secretariat report on FIRMS activities carried out during the intersession includes: marine resource and fishery modules; database content; fact sheet layout improvements; coverage maps; web trends; applications development; training; promotional activities; Secretariat resources in support of FIRMS; difficulties encountered; and planned activities for the next intersession. Some of these points were addressed in more detail, as reported below.
25. Time trends and breakdown by FAO major fishing area of inventory and fact sheets were presented. The total number of inventoried marine resource in the database was 1479, and the largest number of contributions from ICES, WECAFC and CECAF. There are now 738 fisheries inventoried, mostly from CECAF and WECAFC; however, many CECAF components although submitted have not yet been validated and published.

26. Fact sheet update turn-over by members since 2004 has fluctuated without a clear trend, achieving as for June 2017 a total of 1,113 marine resource fact sheets and 293 fishery fact sheets produced. Projections for 2017 include forthcoming updates for marine resources and fisheries from ICES, CECAF, NEAFC, and SEAFO which would bring the total number of marine resource fact sheets to 1,411 and fisheries to more than 300.
27. Mr Campanis asked what is the Secretariat's effort in updating the inventories and fact sheets. Mr Gentile pointed out that there are different workflows available to the partners. Some partners are completely independent for the submission of updates, and others that need different levels of assistance. Regarding the FAO bodies, the FIRMS Secretariat is doing most of the work. Mr Campanis suggested to capture how much effort is dedicated to update directly and how much effort is required to build capacity for the data owners to update themselves. It was noted that the burden of the updates should not fall entirely on the Secretariat. Mr Taconet clarified that for FAO Regional Fishery Bodies it is the FIRMS Secretariat (which is provided by FAO itself) to make the updates. Mr Ye suggested to count the hits to FIRMS and count the hits to RFBs websites, to assess the degree to which FIRMS increases visibility of RFBs and if FIRMS provides additional information to users. He also suggested to figure out other indicators so as to proof additional benefits to the partners.
28. The implementation of the minimum data requirement approach (endorsed by FSC9) to reduce the workload, while still focusing on key information on the status of the fishery resources, led to fast updates from three partners (i.e. CCAMLR, GFCM and IOTC). Mr Taconet pointed out that FAO colleagues representing the FAO bodies (e.g. CECAF, RECOFI, SWIOFC) should participate in the FIRMS TWG meetings so to be aware of the decisions and the protocols in place in FIRMS and facilitate the validation of their inventories in collaboration with the FIRMS Secretariat. Mr Gentile pointed out that inventories of CECAF fisheries at country level were not further developed during the intersession because of turnover in the FIRMS Secretariat.
29. Mr Valinassab highlighted that there is no well-designed program to report to FIRMS within RECOFI. He invited the FIRMS Secretariat to reach out to RECOFI to allocate proper effort to report to FIRMS regularly. Mr Taconet expressed agreement with this proposal and pointed out that recommendations to identify focal points at the next meeting of the WG on fisheries management had already been made.
30. Mr Ye highlighted that the complex political situation in RECOFI could make the systematic reporting to FIRMS very difficult. Mr Valinassab ensured that proper submissions to FIRMS from the northern region will be provided to FIRMS. The Chairperson welcomed the offer of additional submissions.
31. Beyond the regular workflow and dissemination activity by FIRMS partners and Secretariat, the following was accomplished during the intersession:
- Marine resources module: i) CCAMLR, GFCM, IOTC, WECAFC: enriched inventories and new fact sheets, ii) ICES, CECAF, RECOFI: enriched inventories, iii) SWIOFC: a FIRMS focal point was identified during the

SWIOFC SC7 meeting. CECAF and ICES fact sheets are in finalization and expected to be published soon.

- Fisheries module: i) CCAMLR, WECAFC, FAO: enriched inventory and new fact sheets, ii) NEAFC, SEAFO: the compilation of fishery management units is in progress.

32. Mr Gentile referred that in addition to the minimum data requirement approach, the utilization of web services for semi-automatic procedures (i.e. ICES) is also well promising in case of massive updates of information.
33. In terms of website improvements: i) publication of the Stocks and Fisheries map viewer, ii) the Marine Resources module was updated with the display of the state and trend traffic light icons in those collection of fact sheets for which partners gave explicitly their consensus, i.e. IATTC, ICCAT and NAFO (FSC9/D7.2, TGW 5, and TWG 5.1-5.3), iii) the FIRMS home page has been updated with a new Word map echoing the visual identity of the new FIRMS Stocks and Fisheries map viewer, and additional links to the viewer were also added, iv) in the context of the WECAFC-FIRMS collaboration, the FIRMS website has been updated, with all main pages being available in Spanish (in addition to English and French). The system is also already configured to support fact sheets in Spanish language once these will be produced.
34. In terms of web services: i) Marine Resource and Fishery fact sheets can be returned in HTML, or in XML formats, ii) State and Trend Summaries can be downloaded as Excel files for further analysis, iii) web-services are available enabling users, Partner's websites or systems to query and retrieve specific subsets of factsheets given an area or a species, and iv) geospatial web services are also available for embedding maps in partners' websites including a customizable version of the new Stocks and Fisheries map viewer.
35. Regarding the overall upgrade of the FIRMS website, the FAO Office for Corporate Communication (OCC) produced a mock-up in collaboration with the FIRMS Secretariat, see FSC10 meeting document 4e "Design proposals for the new FIRMS Website under FAO.org".
36. Regarding completing FCS8 and FCS9 decisions, the following are still pending: i) alternative layout for no longer monitored marine resources (Monitoring period), ii) the display of partners' logo in the fact sheets, and iii) the indicator for data reliability.
37. In terms of development of applications during the intersession: i) Word/Excel-to-XML converter tool was further configured for the "minimum data requirement" approach and extensively utilized to produce reference observations and fact sheets, ii) support in both modules the handling of time series data such as catch/landings or other indicators was incorporated.
38. As for the development of mapping applications: the recent work done on the FIGIS integrated mapping module produced positive side effects on FIRMS, specifically: i) faster map loading and display, and an improved support to mobile and tablet

devices, ii) fisheries/marine resources data layer are regularly updated through a semi-automated data processing flow, also available at FAO GeoNetwork, and iii) additional layers could be potentially exploited in the FIRMS Stocks & Fisheries map viewer.

39. Concerning training and capacity-building activities, the FIRMS Secretariat ensured a continuing remote technical support to partners in their information contributions to FIRMS, or in the development of their inventories or reporting templates. In addition, the following workshops were carried out: i) WECAFC-FIRMS Data Workshop on Marine Resources and Fisheries Inventories (Barbados, Christchurch January 2016) - supported by EU, and ii) South West Indian Ocean (SWIO) region: Data policy workshop (Rome, Italy September 2015) - supported by SmartFish project.
40. Regarding the allocation of resources to FIRMS activities, the analysis showed that while stepping into the new FAO Strategic Framework, the Regular Programme support to FIRMS has been strengthened and primarily to support information contributions, while extra support for FIRMS growth was maintained through a mix of Regular programme and extra-budgetary sources mobilized by the Secretariat. The total amount of funding remains globally stable compared with the previous intersessional period.
41. As for difficulties encountered during the intersessional activities, it was highlighted that there has been a substantial turnover of the FIRMS secretariat which has weakened the Secretariat capacity during the first part of the intersessional period. In addition, new FAO corporate policies on IT and communication entailed substantial delays for the deliverables.
42. The document and activities conducted during the intersession were discussed by the participants and well received.

FIRMS overall status (agenda item 6b)

43. With reference to document FIRMS FSC10/2017/Inf.8, Mr Gentile reported the web trends analysis carried out with Google Analytics. The overall trend showed steadily increasing usage during the monitored period 2008 - 2016.
44. The upward trend in website usage for 2015 and 2016, and the outlook for 2017 (based on 5 months data), shows an overall increase of the FIRMS usage, and reflects the success of the actions taken to repair the technical incidents of 2012 and 2014. Combining these data with the considerations on the average sessions it may be concluded that fact sheets trigger interest when users manage to access them.
45. As for the traffic sources it was pointed out that about 44% of users reach FIRMS through referral sites with 39% of visitors accessing FIRMS through search engines (mostly Google); and 17% of visits coming from direct traffic. Google search engine and FAO referral site represents the majority of the whole sources of traffic.

46. As for the Geographic location, North American and European countries are those with the highest level of visits. The majority of visits are made using English-based browsers.
47. Among the top landing pages, are the home page, search pages and several fact sheets (e.g., for fisheries: World global tuna fisheries, World deep-sea fisheries; for marine resources include: Tuna and tuna-like species global, Marine resources Mediterranean and Black Sea).
48. An analysis for the period 2014-2016 indicated a growth of mobiles and tablets vs. desktop, respectively about 9% and 3% of the total sessions.
49. According to browser searches by key word there is a different ranking of FIRMS pages within the Google search results. For well-known species names FIRMS is highly ranked only if the key word is accompanied by other keywords, i.e., the geographic location. On the contrary, less popular keywords place FIRMS among the first results.
50. Some considerations arising from the above given trends in website usage include: i) users show growing interest in authoritative sources of information on the state of resources, ii) the positive trends for 2014, 2015 and 2016 suggest positive outlook for 2017 with the FIRMS Stocks and Fisheries map viewer expected to further contribute, and iii) there remains the need of an improved compatibility of the FIRMS website for mobile devices in order to achieve higher rankings from Google.

7. REPORT OF e-TECHNICAL WORKING GROUP 5 (SUMMARY REPORT OF TWG 5 AND e-TWG 5.1, 5.2, 5.3. (AGENDA ITEM 7)

51. With reference to document FIRMS FSC10/2017/3, Mr Gentile reported on the activities of the FIRMS Technical Working Group. Four TWG meetings were held during the intersessional period, three e-meetings (TWG 5.1 July 2015, TWG 5.2 December 2015, TWG 5.3 October 2016), and TWG 5 which was held between the 29th of February and the 1st of March 2016 in FAO HQ Rome, Italy.
52. The following themes were presented and discussed during the four sessions: i) Future perspectives for the FIRMS partnership (TWG 5), ii) Inventories minimum data requirement (TWG 5), iii) Inventories minimum data requirement (TWG 5), iv) Traffic light approach for the FIRMS State & Trend standard descriptors (TWG 5, TWG 5.1-5.3), v) FIRMS Stocks & Fisheries map viewer (TWG 5, TWG 5.3), vi) BlueBridge project and Global record of Stocks and Fisheries (GRSF) (TWG 5), vii) Updating the FIRMS brochure, viii) Introducing the notion of "Assessment Unit" in the FIRMS data model (TWG 5.3), and ix) "SmartForms" (TWG 5.3).
53. The recommendations and the implementations made along those meetings were endorsed by FSC10.

8. REVIEW OF STRATEGIC ASPECTS - ENABLING MORE TIMELY INFORMATION, BROADENING GEOGRAPHIC/THEMATIC COVERAGE, TARGET AUDIENCE/COMMUNICATION AND PARTNERSHIPS (AGENDA ITEM 8)

A role of FIRMS in support of Sustainable Development Goal (SDG) 14.4.1 "Proportion of fish stocks within biologically sustainable levels." (Doc 2017/4d) (Agenda item 8a)

54. With reference to document FIRMS FSC10/2017/4d Mr Taconet delivered a presentation on the role of FIRMS within Sustainable Development Goals (SDG) 14.4.1 "Proportion of fish stocks within biologically sustainable levels". FAO is custodian for target SDG 14.4.1.
55. Goal SDG14 is to conserve and sustainably use the oceans, seas and marine resources for sustainable development. Target 14.4 states: *"By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics"*.
56. Countries are responsible for reporting on SDG indicators on a voluntary basis. However, UN agencies still have the role of custodian. FAO is custodian for 21 SDGs, providing technical advice to facilitate the process. FAO is to ensure that national data are comparable at regional and global levels, and that indicators are built on a consistent methodology incorporating agreed standards. FAO will calculate SDG indicators at regional level; national stocks are the stocks that would contribute to the national indicator. When countries are lacking capacity, FAO or regional organizations can assist.
57. FAO is developing a capacity building plan for its member countries to aid them in SDG reporting. There will be guidelines on the monitoring framework, specifying how countries should report. This plan includes a global expert workshop involving regional experts to peer review the methodology in place and provide training to the countries. The 33rd FAO Committee on Fisheries (COFI, July 2018) will provide a milestone for countries to decide on the overall reporting methodology and selection of categories of stocks. The role of RFBs could be to facilitate the capacity building process, ensure consistency between inventories under their ownership, and ensure that the methodology employed by member countries will be comparable.
58. If the standards based approach is selected for reporting on SDG indicators, it will promote transparency, traceability of the process, and comparability of indicators at global level. FIRMS can facilitate this process and can also provide information on the status of those national stocks that are assessed within the umbrella of an RFB, thus avoiding duplication of work.

59. NatFIRMS was referenced again previously having been considered at FSC6 (2010). The idea of involving national agencies, could be initiated and could be a separated entity.
60. The Global Record Stocks and Fisheries (GRSF) was also referenced as a mechanism to improve coverage on stocks integrating FIRMS information with other database sources focussing on national stocks (e.g., RAM, FishSource, Fishbase).
61. The following actions were requested by FSC10:
- a. Identify issues that might arise when disseminating national reports with regional reports;
 - b. Review of GRSF including current status and further development plans;
 - c. Provide guidance regarding the specific role of FIRMS in facilitating the SDG 14.4.1 process (including role for the Secretariat as well as for the Partners), with specific attention to i) the outreach aspects, ii) capacity building aspects, and iii) to the consistency in an inventory based approach in particular at the interface between regional and national stocks;
 - d. Advise on conditions and steps which should be followed from FIRMS and GRSF to effectively provide a monitoring framework for SDG 14.4.1; and
 - e. Formulate an overall position statement.
62. In particular, it was stressed that FIRMS might be proposed at COFI33 as the framework to store the stock by stock information used by countries to produce their SDG indicator. If this option were taken, FIRMS could be proposed as a standard based inventory to archive/warehouse the information used by the countries for SDG.
63. The discussion on the above points was postponed to be addressed at the conclusion of agenda item 8, after all the relative strategic items have been informed. (See par. 102 through 105)

Reporting on the status of Mediterranean and Black Sea stocks: the case of the GFCM (Agenda item 8b)

64. Mr Federico de Rossi (GFCM Secretariat) delivered a presentation on the status of Mediterranean and Black Sea stocks. Participants were informed on the GFCM mechanism used by the Scientific Advisory Committee on Fisheries (SAC) and the Working Group on the Black Sea (WGBS) to provide annual advice on the status of the main commercial stocks, currently focusing on priority species.
65. The new GFCM Data Collection Reference Framework (DCRF), first implemented in 2017, includes a dedicated tool to compile information required to perform (and replicate) stock assessment, and was established in support of the collection of information on the status of stocks. Particular emphasis was placed on the recently launched mid-term strategy (2017–2020) that aimed towards the sustainability of Mediterranean and Black Sea stocks, in support of the strategic objectives of the GFCM, as well as on the international commitments such as the SDGs and the FAO Strategic Objectives.

66. In the context of the services provided by FIRMS to GFCM, GFCM uses information from its Stock Assessment Forms (SAFs) to inform FIRMS factsheets. In this regards, it was underlined the importance of the ongoing discussion between FIRMS and GFCM Secretariats to ensure compatibility of information provided and overcome the existing differences in criteria used. Since 2016, the GFCM has published a biennial report on the Status of Mediterranean and Black Sea Fisheries (SoMFI) that includes an overview of the status of stocks in the region. In this regard, the meeting was informed about the actions initiated by the GFCM Secretariat and the FAO Fisheries Department in order to address discrepancies on the reporting on the state of Mediterranean and Black Sea stocks through SoMFI (regional) and SOFIA (Global), so as to make global assessment compatible with regional views. In particular, the FAO FI department and the GFCM secretariat are currently addressing the following issues: i) identification of priority stocks, ii) how to incorporate information or not on assessed stocks, iii) how to aggregate stocks towards a regional view; and iv) developing definitions on stock boundaries.
67. Mr Valinassab asked what kind of surveys are in place and if there is a monitoring survey conducted every year by GFCM in the region. Mr De Rossi replied that no current surveys are on-going. However in the context of GFCM strategy there is the objective for implementing surveys next year 2018 for demersal and acoustic survey involving north African countries aiming to have a standard methodology.
68. Mr Ye (FAO) asked whether the percentage of stocks overfished is calculated including all species under GFCM mandate or only the stocks assessed in the last year. Mr De Rossi replied that the stock assessments are conducted on priority species identified by sub-region, upon biological, economic, or relevant to countries criteria.
69. Mr Ramm (CCAMLR) pointed out that the work carried out towards the alignment of regional and global views on stock status could be extended to FIRMS. In fact, if FIRMS acts as a global source of information it is important that agreement on stock status is in place, also for the traffic light approach for which appropriate mapping is needed.
70. Mr Taconet added that FIRMS can indeed be instrumental to the process of alignment, implementing agreed solutions (e.g. FAO - GFCM).
71. In this regard, Ms Gorelli (FAO) presented an overview on how FIRMS can be functional to the alignment of stock status reporting between FAO SOFIA and GFCM SoMFI reports.
72. FIRMS, as a dissemination platform built upon standard based inventories, provides a framework to organize, store and eventually disseminate the collated inventories of stocks. In this context, FIRMS can play an important role in facilitating the identification of mismatches between regional and global views, help to identify discrepancies among different reporting scales. Adopting this standard based inventory approach would ensure transparency in the reporting process.

73. Furthermore, it was noted how FIRMS could play a similar role in the SDG 14.4.1 framework, providing the framework to organize the stock by stock information used by the countries to calculate the country-based indicator. In addition, FIRMS would be able to provide relevant information to the SDG indicator 14.4.1, such as national stocks that are assessed under the umbrella of an RFB (e.g. CECAF and SWIOFC stocks) and that are inventoried in FIRMS. This would facilitate the countries in their reporting duty.
74. Ms Gorelli further clarified that the priority is to identify which are the stocks that are eligible to contribute to the calculation of SDG 14.4.1. Then, the identified national stocks can contribute to the calculation of regional and global level indicators.
75. Mr Taconet concluded stating that the case study of the alignment between FAO and GFCM reports addresses the issue of consistency and transparency at different level of reporting. The inventory based approach adopted in FIRMS can be functional to this process and could be extended to the reporting at country level.

Global Record of Stocks and Fisheries (GRSF) – BlueBRIDGE project (Agenda item 8c)

76. Mr Gentile delivered a presentation on the Global Record of Stocks and Fisheries (GRSF). The GRSF activity is part of the BlueBRIDGE project funded under the EU H2020 Programme.
77. The GRSF aims at providing an innovative environment supporting the collaborative production and maintenance of a comprehensive and transparent inventory of stocks and fisheries records that aims to boost regional and global stocks and fisheries status and trend monitoring as well as responsible consumer practices. The three proposed database sources are: [Fisheries and Resource Monitoring System \(FIRMS\)](#), [the RAM Legacy Stock Assessment Database](#) and [FishSource](#) (program of the Sustainable Fisheries Partnership). The main technical challenge in the setup of the GRSF is the harmonization of the different existing standards (international, regional and national) from different data sources. In this regard the presentation focused on a proposed global standard for Unique Identifiers of stocks and fisheries which was developed to distinguish/aggregate stocks and fisheries records extracted from the three source databases. Two type of identifiers were conceived: Universally Unique Identifier (UUID) machine readable code for unique identification of GRSF records, and GRSF Semantic Identifier, an human readable code and label for the GRSF records metadata; a GRSF “Short Title” with specific naming convention further describes the stocks and fisheries.
78. Mr Taconet presented an overview of different governance and sustainability models. This included content and system governance, business model options for sustainability, and potential service providers for marketing of services to the seafood industry. These options included the formation of a GRSF Board constituted by representatives of the GRSF partners which are currently FIRMS, the University of

Washington (for RAM legacy stock assessment database) and the Sustainable Fisheries Partnership (for FishSource).

79. While a few members said that GRSF provided an exciting development in the context of SDG14.4.1 indicator, concerns were raised about the proposal including sustainability of technology choices, control over the process, sustainability and resources to face an increasing interaction with more actors, and possible compromises / lack of neutral position.
80. Regarding possible conflict of interests, the FIRMS Secretariat clarified that FAO has taken a strategic direction to increase its impact through Partnerships including public-private partnerships and that a Partnerships Department is dedicated to serve this objective with required level of scrutiny. Mr Taconet indicated that FAO has engaged in public-private partnership arrangement before, e.g., the FAO-ASFA initiative.
81. It was agreed that three dimensions needed to be dealt with distinctly:
- i. Infrastructure technology,
 - ii. Content and data sharing issue,
 - iii. Governance including standards.
82. FCS10 was reminded that the overarching objective of FIRMS is the provision of high quality information on marine resources and fisheries for all fishery resources. The objective of the GRSF (i.e., development of a comprehensive and transparent inventory of stocks and fisheries records that will boost regional and global stocks and fisheries status and trend monitoring as well as responsible consumer practices) is consistent with the overarching objective of FIRMS, and SDG 14. In addition, FSC has previously discussed NatFIRMS which would increase the geographic coverage of FIRMS by providing access to national databases. FSC10 considered an additional option to retain the GRSF as a product of FIRMS.
83. Clarifications addressing issues identified by the participants on each of these three dimensions were provided. The discussion then switched to assess how the GRSF can be used by FIRMS and be useful for FIRMS mission in the context of the SDG process, and what would be options of governance and business model. Details on these aspects are available in Annex 3.
84. In particular for the Governance model, the main questions to address are: i) who are the partners in the Board? ii) who makes final decisions? iii) is this completely contained within FIRMS? iv) who is determining the content which is shared and what are the criteria to be used in defining indicators (a subgroup of the governance board could be identified addressing content sharing and indicators)? v) would the FIRMS Secretariat be the repository of data?
85. Also this discussion was adjourned to be finalized at the conclusion of agenda item 8, after all the relative strategic items have been informed. (See par. 102 through 105)

Traffic light in support to SDG 14.4.1 (Agenda item 8d)

86. FSC10 reviewed the status of development and implementation of the State and Trend ‘traffic light’ icons approach, in accordance with FSC9-TWG5 recommendations. The developmental work was summarised by Mr Gentile, and is available in the [FIRMS Wiki](#). The icons are useful to convey a simple message to the general public with a visual indication of the state of marine resources. The red icon indicates “overfished” and the green icon “not overfished”. Icons are activated at the partner-level and the mapping to FIRMS terms may differ amongst partners. Icons, currently in use by IATTC, ICCAT, and NAFO, are displayed in the marine resource fact sheets and in the Stocks and Fisheries Map Viewer.
87. FSC10 agreed that partners’ mapping rules for state and trend should be displayed within a dedicated section of the FIRMS website, and that the relevant mapping rules should also be readily accessible from each fact sheet.
88. The matter concerning developing value added information products synthesizing the content of the FIRMS database was discussed. FSC10 deemed it premature to develop an algorithm that would combine the information on status and trend available in FIRMS by partner and rejected the Secretariat’s proposal. However, FSC10 agreed that a table of marine resources globally and by Partner informing on the total number of stocks inventoried, and for those informed with status reports with associated traffic light icons would be a beneficial addition on the website. The Secretariat will submit a proposal at the TWG.

Enabling more timely and comprehensive information (Agenda item 8e)

89. Mr Gentile delivered a presentation showing the web services developed in collaboration with ICES, which enable the automatic harvesting of ICES databases to populate FIRMS fact sheets.
A proposal for ICES mapping rules to FIRMS State and Trend standard descriptors was also submitted to ICES for final approval.
This activity exemplifies the continuous efforts made by the FIRMS Secretariat to provide different workflows to meet the partners’ needs and to reduce the workload so as to allow the timely submission. Other Partners expressed interest in such automated procedures.
90. Ms Osypchuk asked whether this semi-automatic process could be converted in a fully automatic process. Mr Gentile responded positively, specifying that efforts will be directed in this direction. However such intermediate step is also for quality control. Ms Osypchuk showed the ICES database and underlying services that will feed the FIRMS database.

Review of the FIRMS Partnership Arrangement and proposals for amendments (Doc. FIRMS FSC10/2017/4b) (Agenda item 8f)

91. With reference to document FIRMS FSC10/2017/4b Mr Taconet reviewed the current partnership arrangement and amendments were proposed (some of which will have to be reviewed by the legal office). The amendments are aimed at allowing participation of new bodies in FIRMS without the full obligations required to the partners at present (such as the obligation to participate to FSC meetings). Two alternative options were proposed:
- a. Option 1) to join the FIRMS partnership in quality of “FIRMS Associate Member” by accepting conditions similar to Article 3 “Partners Responsibilities” par 3.2.1 and 3.2.2 but excluding par. 3.2.3 (obligation to participate to FSC meetings);
 - b. Option 2) to join the FIRMS partnership in quality of “FIRMS Associate Member” by accepting conditions similar to Article 3 “Partners Responsibilities” par 3.2.1 and 3.2.2 and including par. 3.2.3 partially modified (i.e. including the obligation to attend at least one FSC meeting physically and other by teleconferencing as appropriate).
92. Mr Ye commented that, even if not obligated, Associated members should still be encouraged to participate to FSC meetings. Mr Campanis suggested that clear definitions for the different membership options should be produced. It was pointed out that, while teleconferencing could be an option for associated members to participate to FSC meetings, this is risky and a drift towards attending only online meetings should be avoided and be strongly discouraged. In addition, some countries could incur technical difficulties and limitations in this sense.
93. FSC10 agreed that the Secretariat will work with the Legal Office on amending the Partnership Arrangement by introducing the membership status of FIRMS Associate Members (or Associate partners), while investigating whether the FAO bodies would legally fall in this category. The finalized amendments will be shared with all Partners by mail with the request to vote whether Partners agree on the amendments.
94. The Secretariat will also work out with the Legal Office possible formulations for changes to the Rule of Procedures concerning the attendance by teleconferencing.

The new FIRMS data services and Website (Agenda item 8g)

95. With reference to document FIRMS FSC10/2017/4c the Chairperson gave a presentation summarizing the results of an online survey to request FIRMS partners to provide feedback on the relevance of FIRMS data services and how to improve the FIRMS website to partners. Eleven partners responded to the survey and the results provided important feedback on the current relevance of the website content, data services and analytical tools. Responders also provided suggestions for future enhancements to specific website tool and on improving the Partnership.
96. Respondents generally agreed that the FIRMS website provided multiple benefits to partners, including data service tools, dissemination capacity and analytical tools.

Results also indicated, inter alia, a desire to modernise the website, improve accessibility to information and improve speed of use, and also improve partners' workflow. Survey results have provided concrete data to use in future modifications to website content and interface functionality and also provide the Secretariat input on how to distribute resources.

97. FSC10 agreed that a similar survey should be conducted amongst users of FIRMS information and requested that the Secretariat develop an online survey for visitors of the FIRMS website.

98. FSC10 also reviewed the recently developed Stocks and Fisheries Map Viewer (<http://firms.fao.org/firms/stocks-fisheries-map-viewer>) and thanked the FIRMS Secretariat for this new feature. It was noted that the viewer can be embedded in partners' websites, and Partners were encouraged to make use of this service.

99. FSC10 agreed to the following refinements to the Stocks and Fisheries Map Viewer:

- a. The default geographic areas displayed in the viewer should be the regions of competence of the partners (similar to the default view in the VME database);
- b. This default view (i.e., regions of competence) could display the number of fact sheets in each region;
- c. Options for displaying other regions of interest (e.g., FAO areas) should be available via the legend panel;
- d. The rules for locating icons and labels on the map need to be improved;
- e. The 'south polar' projection would be improved by the incorporation of the shapefiles available from the CCAMLR online GIS (www.gis.ccamlr.org);
- f. The navigation among Stocks and Fisheries can be improved including by i) taking into account the 'continuum' approach in the selection of layers, and ii) by displaying GIS layers illustrating geographic interactions between stocks and related fisheries.

100. With reference to document FIRMS FSC10/2017/4e FSC10 also reviewed the design proposal for the new FIRMS website under FAO.org. The proposed new website would be hosted by FAO (fao.org), and this would provide increased exposure of the FIRMS content as well as as improved corporate support for content management.

101. FSC10 endorsed the design proposal, and encouraged the Secretariat to further develop this proposal for review and feedback from Partners during the intersessional period, also through TWG e-meetings. This development includes a FIRMS banner to complement the corporate FAO banner, and displaying all partners' logos on the home page.

Outcomes of the discussions held on agenda items 8a (on SDGs) and 8c (on GRSF)

102. During day 3 of the meeting, three **high level scenarios of Business/governance models** were presented to the meeting participants: i) the first where FIRMS takes full control of GRSF capacities and make available services to countries for SDG 14.4.1 monitoring support, ii) the second where the GRSF Board is being built by associating Partners including FIRMS and others such as University of Washington

and SFP with similar idea of services being delivered to countries for SDG 14.4.1 monitoring support, iii) a third (corresponding to the original NatFIRMS concept) where the GRSF Board is materialized by a COFI mandated body to support the reporting and monitoring process for SDG 14.4.1.

103. The general model which finally met the consensus of participants after an extended discussion derives from the first option. In this model presented in Annex 3 Figure 1, FIRMS takes ownership of GRSF, invites few additional actors to join, and provides data services to countries for SDG 14.4.1 monitoring support:

- a. FIRMS takes the ownership of GRSF capacity and in this position ensures the control over the standard setting role for an expanding business,
- b. FAO in its role of FIRMS Secretariat continues to ensure that the infrastructure technology is made available to satisfy the existing and expanding business. This proceeds through the FAO-CNR MoU on the iMarine platform,
- c. The expanding business first concerns the additional data services made available to countries for SDG 14.4.1 monitoring support:
 - i. As a standard setting body, FIRMS defines the standard-based questionnaires and submission mechanisms which countries will have to follow for SDG 14.4.1 monitoring support
 - ii. FAO member countries report back to FAO on SDG 14.4.1 while utilizing the FIRMS-GRSF monitoring data services. Countries (and RFBs) submitted information takes precedence over information that would be submitted in the FIRMS-GRSF by third parties such as RAM.
 - iii. At various levels of involvement (depending on their vested interest and the existing regional arrangements), the RFB FIRMS Partners fulfill the role of reviewing and validating the stock records (i.e. validating that the stocks submitted are actually single stocks) submitted by the countries within their area of competence, the final publishing approval of a new stock UUID being in the hands of the FIRMS Secretariat verifying compliance with the standards.
 - iv. In order to face this expanding business, the Partnership opens up to new Partners or integrate a status of technical contributor (e.g., University of Washington)
- d. The expanding business and data coverage also concerns the publishing of UUIDs for fishery fishing activities which will be used in particular for fishery status monitoring in data poor situations, and for seafood traceability schemes; here:
 - i. FIRMS as a standard setting body defines the standards and questionnaires
 - ii. Countries through RFB FIRMS Partners submit their fishery inventories (as per current practice)
 - iii. The Partnership opens up to new Partners (e.g. SFP) playing a mediator role between the industry, the private sector, and the science. Such new Partner(s) are reviewing and validating the UUIDs for fishery fishing activities; as well as communicating with the industry and the private sector and advising on services that would benefit seafood and industry users.

104. The Committee agreed upon this model by five positive votes, three others not being in a position to pronounce themselves.

105. With this direction, the Secretariat was tasked to continue working towards a fully-fledged proposal for FIRMS to govern the GRSF process by presenting and seeking feedback on this above model at various forums, including the SDG 14.4.1 Capacity Building workshop (end 2017), the final BlueBRIDGE EAB-TWG (with FIRMS partners invited to participate), with the goal to eventually present an elaborated proposal at an extraordinary session of FSC involving RFB Executive Secretaries which could take place back-to-back with COFI33 in July 2018.

9. FIRMS PROTOCOL AND STANDARDS (AGENDA ITEM 9)

Firms information management policy (IMP) - FSC9 version (Doc. FIRMS FSC10/2017/5) (Agenda item 9a)

106. With reference to document FIRMS FSC10/2017/5 Mr Gentile described the modifications applied to the FIRMS Information Management Policy (IMP), for FSC10 revision and approval. The main modifications concern Annex 2 of the IMP draft guidelines, particularly as relates to the FIRMS State & Trend Standard descriptors and traffic light approach. It was reminded that FSC9 made the decision to move towards the “traffic light” approach as an indicator of the stock ‘state and trend’ status. The concept of Traffic-light approach was described as follows:

- The FIRMS State and Trend descriptors are qualitative indicators based on stocks evaluation provided by the FIRMS Partners,
- The associated coloured icon aims to convey a simple message to the general public with a visual indication of the state of the marine resource,
- The red icon indicates “overfished” and the green icon “not overfished”.

107. Draft guidelines were developed during the intersessional period and finalized at the FIRMS TWG5. It was noted that testing of the traffic light approach is ongoing to evaluate the final utility of the proposed for partners in evaluating the approach for each partner’s situation.

108. The proposed “traffic light approach “ guidelines are:

- The red-green visual indicators should be considered as qualitative indication of the state of the resource.
- The traffic light icon is placed upfront in the fact sheet and on the right of the main descriptors.
- In addition a “i” facility beside the red-green icon is provided so users can click on it and get: i) a disclaimer, ii) a matrix containing mapping rules between FIRMS standard descriptors and coloured icons, and iii) a legend for the icons.

109. FSC10 noted that while two red-green visual indicators should be considered, the three FAO categories used for the SOFIA status (plus ‘unknown’) should be available as input categories. Both Underfished and Fully fished correspond to the

green colour, while Overfished correspond to the red colour. The IMP should be corrected accordingly and to clearly mention as header 'FAO Categories'. The Information Management Policy (IMP) will be finalized as the FSC10 version with the corrections agreed upon by FSC10.

110. Mr Sedzro informed that CECAF has adopted three categories (following the FAO SOFIA model): Non-fully exploited, Fully exploited, Overexploited. Mapping rules will be provided to the FIRMS Secretariat.

Proposal for updating FIRMS standards and protocols (Doc. FIRMS FSC10/2017/4f)
(Agenda item 9b)

111. With reference to document FIRMS FSC10/2017/4f Ms Gorelli summarized proposed changes to some of the FIRMS standards and protocols in the Marine Resources module, mainly regarding the State and Trend indicators and some FIRMS controlled terms and definitions. These proposals for modifications arose from the discussion held within the GRSF TWG2 which highlighted the need to update some of the existing FIRMS standards to make the dissemination framework better suited to accommodate the information focusing on stock status. In addition, these modifications are deemed appropriate to consider in light of the future potential role of FIRMS in supporting SDG 14.4.1

112. In particular, regarding the State and Trend indicators: the current framework establishes that the indicators of state and trend for marine resources provided by the Partners are mapped to the bi-dimensional FIRMS standard values of state and trend (based on abundance level and exploitation rate). For communication purpose, these are subsequently mapped to the FAO/SOFIA standard values with the ultimate need to characterize the stock as "Overfished/Fully fished/Not Overfished". However, this workflow is problematic for certain partners, because the FIRMS standard values are not applicable (e.g. GFCM). It was proposed to give the possibility to map the partner's values directly to the FAO/SOFIA standard values, by-passing the FIRMS standard values when these are not applicable. The proposal was accepted by the participants, with the clarification that the workflow would remain unchanged for partners who do not wish to adopt this alternative workflow.

113. Partner-specific mapping rules currently used to assign FIRMS or FAO/SOFIA standard values of state and trend do not ensure a consistent classification of stocks across the FIRMS database. However, it was concluded that partners should be the ones responsible of assigning the status to the stocks under their mandate.

114. Following TWG5 recommendation number 6 (Doc. FSC10/2017/3), catch and landing data series (when available) have been included in the FIRMS Marine Resources module (previously they were only included in the Fisheries module).

115. Regarding revisions to FIRMS standard descriptors and controlled terms, it was proposed to substitute the attribute "Considered as a single stock" with the two attributes "biological stock" and "assessment unit", thus clearly separating these concepts.

116. More suitable definition for “Management Unit” was proposed, aligning it with the current definition of “Management Unit” in the FIRMS fisheries module. The discussion showed that there was effectively the need of revision but more extended reviews are necessary.

117. A consolidation of the definitions of the controlled terms for “Jurisdictional distribution” were proposed, since these are particularly important in light of the role of FIRMS in support of SDG 14.4.1. The list of terms should better refer to existing international instruments and the definition abide to these.

118. The group concluded that a more extensive review of the proposed modifications to the FIRMS standard descriptors and relative controlled terms should be conducted during the next intersession by the Technical Working Group.

10. INTERSESSIONAL WORKPLAN (AGENDA ITEM 10)

119. Mr Gentile delivered a presentation on the proposed activities for the next intersession:

- Expanding FIRMS coverage and timeliness of reporting
- Renewal of FIRMS user interface
- Support SDG 14.4.1 requirements
- Global Record of Stocks and Fisheries (GRSF)
- FIRMS inventories
- FIRMS Promotion

120. Mr Sedzro asked if there is a workshop planned in the FCWC area and what would be the venue. Mr Taconet replied that the focus would be on fisheries inventories in the subregion, with the aim to monitor fisheries trend and the state of the art regarding SDG 14.4.1 in the sub-region.

121. The complete list of actions for the next intersessional period is provided in Annex 4.

11. PLANNING FOR THE NEXT SESSION OF FSC (FSC11) (AGENDA ITEM 11)

122. The option of calling for an extraordinary meeting with RFMO Executive Secretaries focussing exclusively on this particular agenda item was also considered. This could be organized in conjunction with the Regional Fishery Body Secretariats' Network (RSN) during COFI33 (July 2018).

123. Regarding the next regularly scheduled FSC meeting, it was proposed that it could take place in January/February 2019 either in China, Rome or Luxemburg, organized back to back with CWP.

12. ANY OTHER BUSINESS (AGENDA ITEM 12)

124. Mr Valinassab gave a presentation entitled “Joint-management on shared-resources in the RECOFI area”. The presentation included a description of the surveys conducted in the region since about 20 years. Bottom trawl surveys are carried out annually using a

stratified random sampling design. Estimates of CPUA and biomass are made using area swept technique and provided for management in the region. Management incorporates the results into developing and providing advice on resources. Management measures include a variety of regulations concerning closed areas, closed seasons, gear restrictions (mesh size). Mr Valinassab noted that additional data from other similar projects exist from the RECOFI region however that many resources would be needed to compile these data for potential use in informing FIRMS inventories and marine resource summaries.

125. Ms Cummings delivered a presentation entitled 'WECAFC Assessment VRE'. The presentation described the WECAFC - FIRMS initiative undertaken under the BlueBRIDGE project. The initiative aims to identify potential stock assessment models for use in the WECAFC region, identify stock assessment capacity, determine model suitability, and integrate assessment models into the BlueBRIDGE Virtual Research Environment (VRE).

13. ELECTION OF CHAIRPERSON AND VICE-CHAIRPERSON (AGENDA ITEM 13)

126. The Chairperson of the current meeting thanked the participants for their excellent contributions to the meeting, particularly the detailed attention afforded the many complicated matters brought before the committee.

127. The meeting was pleased to confirm the re-election of Ms Cummings (WECAFC) as the returning Chairperson and Ms Dayna Bell (NAFO) as returning vice-chair. The meeting participants thanked the chairperson and the Secretariat for the smooth and straightforward conduct of the meeting.

14. ADOPTION OF THE REPORT AND CLOSE OF SESSION (AGENDA ITEM 14)

128. The report was adopted on 24 June 2017 at 12.18 hours. The meeting was closed. The participants expressed their thanks to ICES for its hospitality, and to FAO and the FIRMS Secretariat for a well-resourced meeting.

Annex 1
Meeting agenda
MEETING PLACE: ICES HQs, Denmark
21–24 June 2017

Day 1, Wednesday 21-06-2017

Afternoon: 14:00 hours to 18:00 hours

1. Opening session and Welcome address

2. Adoption of agenda

3. The Partnership - How FIRMS can match Partners objectives

Seeking new suggestions and guidance from partners, on the continued development of the partnership and the future direction, including by providing feedback on topics of the meeting agenda.

a) Example - The WECAFC-FIRMS and CLME+ projects[1]

(Doc. FIRMS FSC10/2017/4a)

Supporting regional needs in strengthening data collection for management and Decision Support System.

4. FIRMS Membership

a) Progress on the development of FIRMS Partnership

GFCM, RECOFI, CECAF/[FCWC], WECAFC/[CRFM and OSPESCA], SWIOFC/[WIOFish]

b) Review of new perspective Partners

e.g. How BCC, SPRFMO could join FIRMS.

5. Review of Annex 2

a) Proposed information contributions of new Partner(s)

b) Proposed modifications by existing Partners

No Annex 2 modifications were submitted during the intersessional period.

6. Review of FIRMS activities during the intersession

(Doc. FIRMS FSC10/2017/2a)

a) Report on intersession activities

b) FIRMS overall status:

- Status of the FIRMS database
- FIRMS usage – Web trends
- FIRMS costs and organizational resources

7. Report of Technical Working Group 5

Summary report of TWG5 and e-TWG 5.1, 5.2, 5.3.

(Doc. FIRMS FSC10/2017/3 and related info documents)

Including TWG recommendations for final endorsement by FSC10.

Day 2, Thursday 22-06-2017

All day[2]: 11:00 hours to 18:00 hours

8. Review of strategic aspects - enabling more timely information, broadening geographic/thematic coverage, target audience/communication and partnerships

- a) A role for FIRMS in support to SDG 14.4.1 “Percentage of fish stocks within biologically sustainable levels”
(Doc. FIRMS FSC10/2017/4d)
Role of FIRMS and RFB Partners in fostering and enabling SDG 14.4.1 reporting.
- b) Reporting on the status of Mediterranean and Black Sea stocks: the case of the GFCM
- c) Global Record of Stocks and Fisheries (GRSF) – BlueBRIDGE project
A new iMarine tool developed under the BlueBRIDGE project to provide a more comprehensive stock status data coverage, support traceability, and strengthen SDG indicator reporting.
- d) Traffic light in support to SDG 14.4.1
State and Trend traffic light icons implemented as per FSC9-TWG5.
- e) Enabling more timely and comprehensive information
With reference to the intersessional reports review the impact of the minimum data requirements approach and new workflows, i.e. ICES automatic reporting; GFCM, CECAF minimum data requirement approach.
- f) Review of the FIRMS Partnership Arrangement and proposals for amendments
(Doc. FIRMS FSC10/2017/4b)
Assessing under which conditions would FIRMS Membership increase; which arrangements between FIRMS and GRSF; FIRMS and the long-term governance of the VME Database.
- g) The new FIRMS data services and Website
 - Results of the FIRMS survey on the Website and the new FIRMS Stocks and Fisheries map viewer
(Doc. FIRMS FSC10/2017/4c)
 - Review of new released features (i.e. FIRMS Stocks and Fisheries map viewer), proposals and roadmap
 - Design proposals for the new FIRMS Website under FAO.org
(FIRMS FSC10/2017/4e)

Day 3, Friday 23-06-2017

Half day: 9:00 hours to 13:00 hours

9. FIRMS protocol and standards

- a) FIRMS Information Management Policy (IMP) – FSC9 version
(Doc. FIRMS FSC10/2017/5)
Including draft guidelines on State and Trend traffic light approach as per FSC9-TWG5.
- b) Proposal for updating FIRMS standards and protocols
(FIRMS FSC10/2017/4f)

- Elaborate further the State and Trend indicators and traffic light approach, e.g.:
 - o SOFIA values
 - o Transparency/alignment needs across reference points
- Revising FIRMS controlled terms and definitions (e.g. define the “Assessment Unit” concept and evaluate its adoption)

10. Intersessional work plan

11. Planning for the next session of FSC (FSC11)

12. Any other business

13. Election of Chairperson and Vice-Chairperson

Day 4, Saturday 24-06-2017

Morning: 10:00 hours to 12:00 hours

14. Adoption of the Report and Close of Session

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- [1] **WECAFC**: Western Central Atlantic Fishery Commission; **CLME+**: Catalysing implementation of the Strategic Action Programme for the sustainable management of shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+ region).
- [2] 9.00 to 11.00 – CWP-IS meeting report adoption

Annex 2 List of participants

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Annex 3

Discussion details addressing issues identified on the GRSF proposal and options of governance and business model

It was clarified that three dimensions needed to be dealt with distinctly:

- Infrastructure technology,
- Content and data sharing issue,
- Governance including standards.

Regarding the infrastructure technology, it was clarified that BlueBRIDGE is the on-going project which further contributes to consolidate the iMarine platform which FAO/FI has been working with since 2008. The IT developments taking place through BlueBRIDGE which enable GRSF are part of a larger IT strategy in line with new FAO's IT policies to go to the cloud, and work with IT partners thus enabling FAO to reduce IT costs and concentrate on its Agriculture/fisheries business. As a matter of facts, the MoU between FAO and CNR-Italy (Italian national research council) on iMarine has been cleared by all concerned Departments including Partnerships, Legal, Publishing and IT. The IT capacities developed in the form of cloud based services benefit FAO in delivering enhanced services including to the benefit of FIRMS

Regarding content and data sharing aspects, clarifications were brought on the following issues:

- The considered Catch data are not the nominal catch statistics but the catch data considered valid in assessments. This is in line with previous decision from FSC9 regarding FIRMS minimum data requirements for stocks, and already implemented in the recent Partners stock status reports.
- The considered Catch data for the Stock status reports are not the nominal catch statistics but the catch data considered valid in assessments. This is in line with previous decision from FSC9 regarding FIRMS minimum data requirements for stocks, and already implemented in the recent Partners stock status reports.
- The catches considered in fishery reports are usually the nominal catches. This issue on content can be addressed through clear and distinct identifiers of the information being included in the global record and a subgroup of the governance board could work to identify rules for content inclusion
- For SFP/FishSource – the catches can be nominal statistics- as they are just for fisheries under FIPS and have not been rigorously assessed at this stage
- GRSF includes a standards' based logic to identify stocks which share overlapping areas and the degree of overlap, as indicator that can help decision making on whether the stock is single or distinct
- A multiplication of species names would be avoided by the adherence to the agreed upon standards, namely ASFIS (priority) and WoRMS (were no ASFIS code exists)
- Changes in Stocks identifiers are regularly observed, hence why acquiring a capacity to set-up unique identifiers would be valuable to distinguish among stocks identities
- Data sharing agreements should include authorization from Partners for republishing their submitted reports to FIRMS

Regarding the Governance, several concerns were expressed:

- FIRMS is presented at a too much low level and what is the voice of FIRMS should be clarified
- Suspected conflicts of interest with FAO as Secretariat being also in charge of nominal catch statistics
- In a public-private partnership arrangement, a risk that the information originating from public domain ends up being with private access with charges

It was also clarified that:

- In the GRSF development process, the standards setting decision making has remained with FAO (under the control of FIRMS partners invited to be part of the process) by strongly building on the FIRMS authoritative reference.

Critical and Immediate questions remain on:

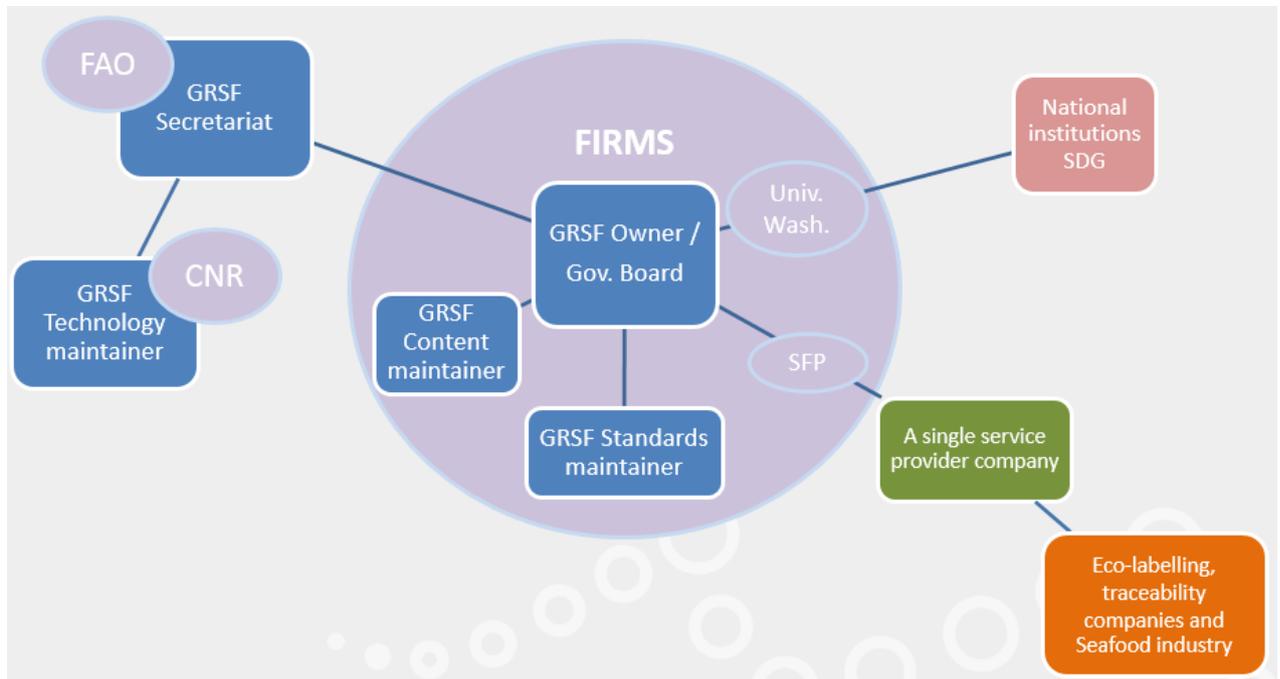
- Who will take the final decision on publishing the standards for the Unique Identifiers depends on the set-up for the Governing Board.
- FIRMS's unique authoritative position in developing standards for stocks and fisheries reporting would position it as the natural body for endorsing the standards, while CWP would be expected to stamp such standard from the CWP site.
- Data republishing was also raised as an issue.

How can GRSF be used by FIRMS:

- Stocks status information should remain exclusivity for public agencies to provide. Currently stocks information in GRSF mostly provided by FIRMS and RAM. RAM reproduces information provided by agencies publishing their stock assessment. SFP aims at giving up any role in providing stocks information.
- Fisheries / fishing activity information is provided partly by FIRMS, partly by SFP
- The unique identifiers are generated as a distinct information product when evidence of a single stock or fishery exists. FIRMS and FIRMS Partners could establish the protocols and play a decision making role for the approval of UIDs. Once published, the single identifier is both a unique and 'naked' resource and could be potentially used (as naked resource) by any public or private actor.
- o **From the SDG perspective**, this would grant FIRMS or FAO with a unique monitoring system opportunity since country actors could make use of the UID to link to their already published stock status report
- The information resources contained in GRSF which are provided by the contributors and used to generate the UID constitute a unique source of information which can fully or partially be made available to the public, and this decision would be made by the Governing Board. Similar rules could apply as those prevailing in the FIRMS context for the approval of status report for any single stock, along with the need to ensure the highest possible level of quality (protection of the most authoritative source). Upload facilities would enable countries not having any dissemination facility to upload their stock status report and have it disseminated. Download facilities for selected species, regions or countries would enable to offer a service to help countries generate a consistent and comparable SDG indicator.
- The level of control that FIRMS would have in the Governing Board is a critical aspect there

- Likewise the Governing Board would decide what is made available at a cost or at no cost.

Figure 1: FSC10 decision on the Governance model option for GRSF-SDG14.



Annex 4

Agreed Work plan for the intersession

- **Progress on the development of FIRMS Partnership (Agenda item 4a)**

The Secretariat will work towards expanding FIRMS coverage, in particular with the need to improve coverage in the Pacific Ocean area. The Secretariat will invite the following Regional Fishery Bodies to become Partners: IPHC, NPFC, CPPS, SIOFA, BCC, PSC, SPRFMO, WCPFC (FSC10/D4.1).

Mr Campanis will help in this process liaising with BCC and SIOFA (FSC10/D4.2).

The Secretariat will evaluate the eligibility of the Cephalopods International Advisory Council (CIAC) in FIRMS and report to Partners (FSC10/D4.3).

- **Proposed modifications by existing Partners (Agenda item 5b)**

Mr Valinassab anticipated the intention to revise the RECOFI inventory and to provide new information (FSC10/D5.1).

- **Review of FIRMS activities during the intersession (Agenda item 6)**

The Secretariat will continue updates to FIRMS inventories, and seek for timely updates from Partners including through Data calls. For FAO RFBs (CECAF, RECOFI, SWIOFC, WECAFC) and in order to improve cohesion and timeliness, concerned focal points are requested to work liaise closely with the respective RFB Secretariats and FIRMS Secretariat. The RFB Secretariat representatives will be invited to attend the TWG meetings (FSC10/D6.1).

The Secretariat will seek participation of more RFBs and will continue the promotion of FIRMS (together with all partners) through capacity building activities with selected RFBs upon availability of extra-budgetary funding resources, currently WECAFC, and FCWC have secured such EBF (FSC10/D6.2).

A workshop is planned in the FCWC area with a focus on fisheries inventories in the subregion, with the aim to monitor fisheries trends and the state of the art regarding SDG 14.4.1 in the involved countries. Mr Sedzro is expected to liaise with the FIRMS and FCWC Secretariats to prepare this workshop (FSC10/D6.3).

The Secretariat will provide metrics of its effort in updating the inventories and the fact sheets for each Partner (FSC10/D6.4).

Regarding completing FCS8 and FCS9 decisions, the following are still pending:

- i) alternative layout for no longer monitored marine resources (Monitoring period),
- ii) the display of partners' logo in the fact sheets, and
- iii) the indicator for data reliability.

- **A role of FIRMS in support of SDG 14.4.1 “Proportion of fish stocks within biologically sustainable levels.” (Doc 2017/4d) (Agenda item 8a)**

and

- **Global Record of Stocks and Fisheries (GRSF) – BlueBRIDGE project (Agenda item 8c)**

The Secretariat will continue towards the finalization and ultimate release of the Global Record of Stocks and Fisheries (FSC10/D8.1).

The FIRMS Partners will be involved in testing the logic of the unique identifier standards and of the validation workflow during the intersession (FSC10/D8.2).

The Secretariat was tasked to continue working towards a fully-fledged proposal for the FIRMS governance and business model by presenting and getting feedback on this above model at various forums, including the FAO SDG 14.4.1 Capacity Building workshop (end 2017) demonstrating the kind of support that FIRMS could offer in this regard, the final BlueBRIDGE EAB-TWG (with FIRMS partners invited to participate), with the goal to eventually table an elaborated proposal at an extraordinary session of FSC involving RFB Executive Secretaries which could take place back-to-back with COFI33 in July 2018 (FSC10/D8.3).

- **Traffic light in support to SDG 14.4.1 (Agenda item 8d)**

FSC10 agreed that partners' mapping rules for state and trends should be displayed within a dedicated section of the FIRMS website, and that the relevant mapping rules should also be readily accessible from each fact sheet (FSC10/D8.4)

FSC10 agreed that a table of marine resources Globally and by Partner informing on the total number of stocks inventoried, and for those informed with status reports with associated traffic light icons would be a beneficial addition on the website. The Secretariat will submit a proposal at the TWG (FSC10/D8.5).

- **Enabling more timely and comprehensive information (Agenda item 8e)**

Work will continue towards enabling the harvesting of data from ICES in a fully automatic process. The Secretariat will liaise with the Partners to identify if similar solutions can be applied elsewhere (e.g. CCAMLR, SEAFO) (FSC10/D8.6).

- **Review of the FIRMS Partnership Arrangement and proposals for amendments (Doc. FIRMS FSC10/2017/4b) (Agenda item 8f)**

The Secretariat will follow-up with the legal office to propose final amendment to the Partnership Arrangement and Rules of Procedures. It was suggested to investigate whether the FAO bodies would legally fall in the category of FIRMS Associated Members and thus finalize the amendments to the partnership agreement (FSC10/D8.7).

- **The new FIRMS data services and Website (Agenda item 8g)**

The Secretariat will conduct an online survey amongst external users of FIRMS information (FSC10/D8.8).

The Secretariat will work on refinements to the Stocks and Fisheries map viewer (FSC10/D8.9).

FSC10 endorsed the design proposal of the new FIRMS website, and encouraged the Secretariat to further develop this proposal for review and feedback from Partners through the TWG (FSC10/D8.10).

A renewal of the communicational material (e.g. brochure, poster) will be addressed together with the release of the new website (FSC10/D8.11).

- **FIRMS Protocol and standards (Agenda item 9)**

The Information Management Policy (IMP) will be finalized with the corrections agreed upon by FSC10 (FSC10/D9.1).

The group concluded that a more extensive review of the proposed modifications to the FIRMS standard descriptors and relative controlled terms be conducted during the next intersession by the Technical Working Group (FSC10/D9.2).

**Annex 5
FIRMS FSC10 group photograph**

