



<b>The Fisheries and Resource Monitoring System (FIRMS) Technical Working Group</b>
<b>Seventh Session</b>
<b>Global Record of Stocks and Fisheries (GRSF)</b>
<b>Online, 30 September 2021 – 1 October 2021</b>
<b>Report</b>
<b>Author: FIRMS Secretariat</b>

#### **Executive Summary**

The FIRMS seventh e-TWG was held virtually in two sessions, the first on the Tuna Atlas (22 February 2021, 25 and 26 February 2021), and the second on the GRSF (30 September 2021 and 1 October 2021).

The objectives of this e-TWG on the GRSF were to highlight to partners the work carried out so far on the GRSF and its developments during the intersession period, and for TWG members to provide feedback and recommendations to the FSC12.

The topics presented during the e-TWG are summarized in the two presentations referenced in Annex 5.

Following discussions held over the two days (Annex 3 and 4), the TWG formulated recommendations for further evaluation and possible endorsement at FSC12.

## **CONDUCT OF THE MEETING**

The Seventh Session of the FIRMS Technical Working Group (TWG) e-meeting, on the Global Record of Stocks and Fisheries (GRSF), was opened by its coordinator, Ms Nancie Cummings (NOAA – WECAFC-FIRMS regional focal point) at 14.00 hrs, Rome time (CET) on Thursday 30<sup>th</sup> September 2021.

She welcomed the representatives of the following FIRMS Partners: FCWC, GFCM, ICES, IOTC, SEAFDEC, SEAFO, SIOFA, WECAFC and of the FIRMS associated Partners: FORTH, SFP, also noting that UW could not attend but had prepared contributions to be delivered during the meeting (see Annex 1 List of Participants).

Ms. Cummings noted that the focus of this session was on the Global Record of Stocks and Fisheries (GRSF), recalling that the work on GRSF first began under the BlueBridge project in 2015, and that the GRSF was placed under the FIRMS governance at FSC11. The activities being undertaken under GRSF are vital to advancing the quantity, the quality and the sharing of information available on a variety of levels including fishing activities, production and management. She informed the participants that over the two half days of the virtual meeting, the group will learn from the GRSF partners/collaborators on the progress on these activities since FSC11. Which in turn will help formulate the recommendations to the FSC12.

The agenda (Annex 2) was presented and adopted without modification. The links to presentations delivered under each item can be found in Annex 5.

On day 1, the core GRSF group (FIRMS Secretariat, SFP, delegation by UW, and FORTH) delivered presentation on agenda items 3 to 6, with pause for questions and comments after each main chapter.

On day 2, the summary conclusions of the first day were presented. These were eventually adopted as laid out in Annex 3. The meeting then proceeded with Agenda item 7 with six topics proposed for discussion:

- o what can GRSF contribute to SDG 14.4.1 reporting / dissemination
- o what can GRSF contribute to Traceability
- o what can GRSF contribute to Partners' work
- o what user access policy for UUIDs / for Content
- o what role for Partners, according to their mandate
- o any role for actors outside FIRMS partners

Views on these questions were successively presented by UW, FAO assessment, SFP, FAO value chain, FAO information and knowledge management, followed by open discussion. The Partners were then invited to provide their views into three break-out rooms, on Stock status, on Traceability, and on IT and interoperability aspects; after which the groups reported in plenary. The adopted reports of the three break out groups are in Annex 4.

Finally, the meeting addressed the last agenda item 8 Conclusions and Recommendations and reviewed a first draft of the TWG recommendations.

Before closing, the group agreed that the main points of the report would be shared as a draft for review by the participants, before the final report be consolidated and finalized. This took place between the 5 and 7 October. Ms. Cummings, coordinator and chair of the TWG, thanked all participants for their contribution during the meeting, and congratulated the core group for the work undertaken and inputs provided to the meeting.

## **RECOMMENDATIONS FOR FSC12**

The TWG outlined GRSF topics which required further consideration by FSC12 including:

1. Note that classifications of FIRMS stock as Biological, Assessment or Management Units are on-going and will require inputs or validations from FIRMS partners.
2. Recognition of the importance of the timely submission of updated stock status and fishery reports.
3. Recommendation to incorporate FishStat in GRSF and further investigate how FishStat - GRSF relationships can improve global stock status analysis.
4. Recommendation to continue working on the integration of SDG 14.4.1 data into the GRSF.
5. Recommendation to develop approaches and standards for increased geospatial resolution.
6. Recommendation to review the proposed Traceability Unit standard in conjunction with the planned revision of the SDG questionnaire.
7. Recommendation that GRSF data providers consider how to best complement each other in order to optimize data collection efforts of the Partnership.
8. Recommendation to improve and simplify communication and to develop guidelines on GRSF data requirements and the streamlining flow to SOFIA. Such could take into account the levels of knowledge on stocks (including data poor situations) to improve guidance to partners on data priorities and to optimize the efficiency of reporting:

- a. The fields CPUE, Effort and Length Frequencies to be considered for addition in GRSF considering their particular interest if available in data poor situations.
- b. The 10 GRSF data fields to be regrouped into five main categories (Stock status, Abundance, Fishing pressure, Catch/Landings) including a new category for Length data FIRMS Partners (and system) can work towards adapting their status reports to meet GRSF data requirements against these 5 main categories.

Time Dependent Indicators	Description
Abundance (quantitative/qualitative descriptor, time series)	Biomass time series/reference points, <b>CPUEs</b> , FIRMS standard abundance level
Fishing Pressure (quantitative/qualitative descriptor)	Fishing mortality time series/reference points, <b>Effort</b> , FIRMS standard exploitation rate
Stock Status Categories (qualitative descriptor, narrative)	FAO categories, FIRMS standard descriptors, State and trends, scientific advice
Catches and Landings	Time series
<b>Length Frequencies</b>	Time series

9. Recommendation that FIRMS partners:
  - a. Work towards adapting their data reporting on stocks towards such revised GRSF data requirements/guidelines.
  - b. Present their ideas for the use of GRSF.
  - c. Reach out to countries on the use of UUIDs, including for SDG14.4.1 purposes.
  - d. Provide any contribution to the increased geographic resolution.
10. Recommendation that FIRMS Partners and collaborative Partners present their intended GRSF Content/data use to FIRMS SC for review and approval.
11. In terms of reaching out:
  - a. Recommendation to well clarify the concept of “Traceability unit” for further discussions with stakeholders.
  - b. Recommendation to reach out to external collaborators such as MSC who if using UUIDs can bring more knowledge on stock status including in data limited situations.
  - c. Encourage the implementation of pilot field projects by FIRMS Partners for testing the use of GRSF UUIDs for traceability purpose along the value chain, so to inform on stakeholders and countries feedback on the matter.
12. Recommendation that tailored training approaches be developed on GRSF including one-to-one meetings or workshops to better communicate on possible GRSF benefits according to the capacities of various partners.

## ANNEX 1 - ANNOTATED AGENDA

<b>FIRMS Technical Working Group e-Meeting</b>
<b>Seventh session, The Global Record of Stocks and Fisheries (GRSF)</b>
<b>Online, 30 October 2021 – 1 September 2021</b>
<b>ANNOTATED AGENDA AND TIMETABLE</b>
<b>Author: FIRMS Secretariat</b>

**Meeting place: Online, Zoom platform**

Day 1 30-09-2021

### **GRSF – REPORT ON ACTIVITIES AND STATUS OF DEVELOPMENT** 2:00 pm to 5:00 pm CEST

(To be fine-tuned according to partners' intended participation)

*The FIRMS Secretariat and the GRSF core team report on the directions agreed upon by FIRMS SC11, including activities, status of development and results achieved so far.*

*Main objectives of the GRSF are to provide unique identifiers for a more comprehensive stock status data coverage which can help to achieve FIRMS goal: “facilitate the monitoring of the status and trends of all fishery resources”, FSC11 endorsed placing the GRSF under its Governance umbrella. (See FSC11 report <http://www.fao.org/3/ca5247en/ca5247en.pdf> and FSC10 report at <http://www.fao.org/3/a-bs239e.pdf>).*

- 1. Opening session, Welcome address, and Adoption of agenda**
- 2. Introduction to GRSF**
- 3. Report on the technical work** (FIRMS Secretariat, FORTH, SFP, UW)

*This includes the consolidation of the information system, the development of Services, and a short demo.*

- 4. Pilot validation of UUIDs and release of GRSF VRE - experimented validation & publication method**
  - a. for Stocks (UW)
  - b. for Fisheries (SFP)
  - c. feedback by FIRMS partners

*With the GRSF pilot release in November 2019, an initial set of UUIDs were generated and reported to the FIRMS Partners. The validation methodology will be presented. Since then, several new records were added in the GRSF. The Secretariat is expecting to add the UUIDs to all FIRMS records published in the FIRMS website. In that occasion, all stock records will be*

*enriched with the new descriptors Biological Stock, Assessment Unit, and Management Unit. The Secretariat will ask Partners to validate the end result.*

**5. Report on testing of UUIDs (FIRMS Secretariat, ICES, SFP, UW)**

*Diverse typology of testing might be reported - the GRSF console; the APIs, the integration of UUIDs in partners DBs; examples of web use of UUID.*

**6. Report on the GRSF database:**

- o Database coverage – vs sources – geographic – vs species - vs GRSF list of time dependant data (Ref. FSC11)
- o Validated content vs Draft content – what remains to be done (SFP, UW)
- o Prospects from the integration of new data source from national SDG14.4.1 questionnaires
  - insights of data coverage
  - proposed upload/validation workflow
- o Required improvements on standards
  - geographic resolution of records
  - definitions - Traceability units (SFP)

**Day 2 01-10-2021**

**GRSF – WHAT’S NEXT**

2:00 pm to 5:00 pm CEST

(To be fine-tuned according to partners’ intended participation)

**6. Report on the GRSF database (continued)**

**7. Data use and Partners’ perspectives on the GRSF**

*The Secretariat will introduce the topics. Participants are invited to provide their views on data use and perspectives on the GRSF either through presentations or as part of an open discussion. The proposed topics for discussion are:*

- o what can GRSF contribute to SDG 14.4.1 reporting / dissemination
- o what can GRSF contribute to Traceability
- o what can GRSF contribute to Partners’ work
- o what user access policy for UUIDs / for Content
- o what role for Partners, according to their mandate
- o any role for actors outside FIRMS partners

**8. Conclusions and Recommendations for FIRMS FSC12**

**9. Closure of the meeting**

## ANNEX 2 - LIST OF PARTICIPANTS

<b>Name</b>	<b>Organization</b>
Anton Ellenbroek	FAO
Anne-Elise Nieblas	FAO
Arturo Munoz Alberto	FAO
Aureliano Gentile	FAO
Bracken van Niekerk	FAO
Emmanuel Blondel	FAO
Marc Taconet	FAO
Milos Vojar	FAO
Nada Bougouss	FAO
Nancie Cummings	FAO
Rishi Sharma	FAO
Yimin Ye	FAO
Abena Asante	FCWC
Nadje Séraphin Dedi	FCWC
Yannis Marketakis	FORTH
Elisabetta Betulla Morello	GFCM
Roberto Emma	GFCM
Neil Holdsworth	ICES
Dan Fu	IOTC
Nualanong Tongdee	SEAFDEC
Saivason Klinsukhon	SEAFDEC
Sukchai Arnupapboon	SEAFDEC
Worawit Wanchana	SEAFDEC
Elizabeth Voges	SEAFO
Braddock Spear	SFP
Merul Patel	SFP
Patricia Amorim	SFP
Susana Segurado	SFP
Pierre Peries	SIOFA

## ANNEX 3 - SUMMARY DAY 1

The TWG was presented the status of the GRSF system and database, with contributions testifying:

- A robust and well-functioning system periodically refreshed, offering a variety of access and dissemination features, ranging from a simple Map viewer for the general public, through to competency queries for pre-defined extractions, and web-based services (APIs) for advanced analyses.
- A closely-controlled and monitored validation mechanism for Stock Identifiers which aims at ensuring the quality and uniqueness of records, compliance with agreed standards or conventions.
- The GRSF infrastructure and the UUIDs offer interoperability for data exchanges and mutual enrichments with other databases (federation of systems).
- With over 1500 stocks approved to date, and over 1600 still pending approval, GRSF may be considered a central repository to access the World's unique list of stocks and stock status data and information.

Stocks in GRSF have operational-level granularity. Geographic coverage, presently:

- The oceans and seas around Europe, Africa, North and South America, Australia and New Zealand are well covered.
- South Asia, South-East Asia, and the Pacific are not as well covered.

Content and temporal coverage of the various indicators supporting stock status and monitoring, presently:

- Time series of 25 years constitutes a strong feature of GRSF.
- Recent data within the last 5 years presents a weaker reality of GRSF.

The UN SDG14.4.1 national questionnaires represent an enhanced resource, which can significantly increase GRSF Geographic / Stocks / and Stocks status coverage through:

- Applying UUIDs for SDG14.4.1 sourced stocks enhance Quality Assurance contributing to stability of national reference stocks list, and to reduce the validation burden.
- SDG 14.4.1 Data dissemination policy: only UUIDs and key identity information will be published, while content/time dependent data remains confidential for use by FAO unless otherwise agreed to by countries.

Likewise for Stocks, a controlled process prevails for the generation of a very significant "store" of over 12,000 Fishing units.

In terms of steps that the TWG considered for further enhancement of GRSF:

- Considering the respective strengths and weaknesses of GRSF and FishStat regarding coverage, granularity and timeliness, the TWG identified benefits of combining FishStat and GRSF records for global stock status analysis;
- Regarding the GRSF in support of Traceability, the need for a refined and unambiguous concept of "Traceability unit" (TU) was presented to the TWG, with "fishing area" broken down between "Assessment area" and "Management area". The TWG supports further elaboration of this new concept, noting:
  - A workflow generating TUs can build on the existing GRSF data model (Assessment Units and Fishing units), while validation of TUs (including the new Management area field) will be performed by traceability business partners.
  - A technical recommendation was made to review the new TU concept in conjunction with the forthcoming revision of the SDG questionnaire.

- GRSF faces the lack of globally accepted geographic standards for the stocks identified at national or sub-national levels, in particular concerning countries with extensive EEZs or with more advanced management strategies.
- The Stocks pending approval, the integration of national stocks from SDG questionnaires, and the proposed traceability units, will greatly benefit from developing approaches and standards for managing increased resolution of geospatial data.



## **ANNEX 4 - BREAKOUT ROOM DISCUSSIONS DAY 2**

### **Break out group: GRSF IT services and interoperability aspects**

- The GRSF returns stocks and fisheries identifiers to data providers once records are validated, the data providers remain the owner of its stocks & fisheries list.
- A test endpoint is desirable to initiate testing submission and receipt of stock information.
- GFCM is already considering the use of both unique identifiers and semantic IDs to improve stock assessment data management, hence there is a solid ground to streamline interoperability with the GRSF. In this connection, the GFCM Secretariat will explore the standards developed so far in the remit of the GRSF APIs.
- The GFCM advises the preparation of guidelines documenting good practices for the implementation of data flows from RFMOs to the FIRMS/GRSF and ultimately to SOFIA (e.g., required metadata, stocks descriptors and indicators). These should include both technical and general provisions (i.e., to ensure proper elaboration of inbound data and ensure timely inclusion in SOFIA).
- Additional APIs would be needed: i) for retailers to identify the GRSF UUID for a fishery they are sourcing from (e.g., by entering the information available and get most relevant fishery records), ii) return all gears (names, codes) including those not available in the ISSCFG, iii) return list of management units.
- Procedures (e.g., notifications, alerts, etc.) are needed to highlight overlapping stocks and to allow relevant stakeholders to sort out the matter for proper definitions of their stocks.
- This breakout room is also interested in the possible connections between FishStat and GRSF.

### **Break out group: Stock status and monitoring**

- Regarding the connection between the GRSF and FishStat, there is a need to identify reporting gaps on either FishStat or GRSF, and improve the GRSF towards complementarity with the addition and validation of new records. There are overlapping fields in the GRSF and FishStat, but they are not entirely the same.
- A more detailed analysis on what the three data sources (FIRMS, FishSource, RAM) cover and how they complement FishStat would be useful and more convincing.
- The GRSF Knowledge Base (KB) is based on stocks and the FAO statistics are based on species by country and FAO area. In many cases several stocks for a single species are assigned to a single FAO fishing area which explains why the number of stocks is bigger in GRSF than that of species. At the level of 1:1 mapping between FishStat and GRSF, it would be good to investigate what percentage of catch is covered by the GRSF in respect to FishStat to determine how to map finer-scale stocks in GRSF to larger-scale species-by-area content in FishStat and thus how to assign UUIDs to FishStat records.

Relative to the role of partners in helping countries achieve and improve upon SDG

14.4.1 reporting:

- GFCM:
  - noted that countries report on assessments at the Geographical Sub-Area (GSA) level and in the case of shared stocks on joint GSAs: in the latter case reporting of assessment outcomes of one country may overlap with their neighbors' reporting.
  - noted that they are improving the way they are reporting the stock assessments, and that they are interested in how to integrate the UUIDs in their reporting structure. Their reporting will include Excel files with the metadata and time series of the outcomes of stock assessment. This new reporting scheme will be addressed in the upcoming annual session and, if endorsed, should take effect from December. GFCM is attempting to transition to providing advice on stock status based on year n-1, i.e., the reference year (last year of data) being the same as the reporting year – this is effective for all Black Sea priority stocks and some Mediterranean priority stocks. In this way there is a one-year time lag between assessments and decisions. Future reporting on GFCM will be shorter than previously, potentially enhancing the timeliness of GRSF records for GFCM stocks.
  
- SEAFDEC:
  - reminded the group of the data-poor situation of more than half of its partners, and of the mandate and role of SEAFDEC to perform stock assessment of key species, e.g., the neritic tuna, kawakawa and longtail tuna in Indian Ocean and Pacific.
  - SEAFDEC is also contributing towards capacity development for species identification - e.g., CITES listed sharks, and supporting an improved data collection system.
  - noted that their partner countries are far behind in the technology and the GRSF system is not immediately useful for them, as records of the stock status in this region are few.
  - suggested that SEAFDEC and FIRMS build a collaboration towards long-term improvements in data collection as a starting point towards improving reporting in the region.
  - suggested creating an online questionnaire to assess how SEAFDEC can work with FAO/FIRMS to report the stock status of some species by some “champion” countries whose national data collection have improved recently.
  
- SEAFO:
  - noted that submitting CPUE and other effort data would have to go through commission and contracting parties prior to making this information available. The group noted that CPUE and effort data are useful in GRSF for data-poor situations. The Secretariat noted that CPUE would be connected to the stock at the fishing unit level.
  - The group noted that reporting on length frequencies to GRSF would be useful, though potentially complicated to report.
  - GFCM noted that their new reporting scheme will include effort information, when available.

- Overall, the group noted the contrasting capacities to participate for the different members. It was noted that for SEAFDEC, the group should consider the best ways to mobilize capacities and resources in order to bring more data and information on the South-Asian stocks.

### **Break out group: Traceability**

- The value of the GRSF and how it can contribute towards traceability is noted, but there needs to be caution in the communication of this approach, particularly where there remain cases of mis-understanding, or lack thereof, of the notion/concept of traceability by supply chain actors, particularly with regards full chain traceability;
- Broadening the notion/concept to the management unit may raise further concerns.
- The lack of standards has been the major obstacle in the proposed application of the GRSF to include a traceability module, but the hope is to address some of these standards through the project proposal submitted by SFP.
- In general, the GRSF can get producers to understand how to use the UUIDs as a tool. Traceability systems are used within the supply chain directly, from producers to suppliers. The UUIDs and associated tools can give greater visibility to producers as to where their product is being sold.
- Regarding user access, providing free access to the IDs initially will be important to encourage their use.
- From FAO's standpoint and the perspectives on the traceability aspects, further work needs to be undertaken for informing member countries and stakeholders on the GRSF proposal. While GRSF continues its pilot testing and while in this context FAO needs to further define and refine its linkages to GRSF and its data assets (i.e., beyond what FAO has already done from a value chain perspective), the GRSF partners are encouraged to collaborate and progress on the pilot testing including with field projects and in their outreach activities with their stakeholders.
- Further defining and explaining the concept of the traceability unit will be important in further discussions with stakeholders.

## **ANNEX 5 – PRESENTATIONS DELIVERED DURING THE MEETING**

- **The Global Record of Stocks and Fisheries (FIRMS)**  
[https://www.fao.org/fileadmin/user\\_upload/faoweb/FI\\_Meetings/FIRMS/TWG7/FIRMS\\_e-TWG-GRSF\\_Sept30-Oct1-2021.pdf](https://www.fao.org/fileadmin/user_upload/faoweb/FI_Meetings/FIRMS/TWG7/FIRMS_e-TWG-GRSF_Sept30-Oct1-2021.pdf)
- **Taking the GRSF traceability units to the seafood industry (SFP)**  
[https://www.fao.org/fileadmin/user\\_upload/faoweb/FI\\_Meetings/FIRMS/TWG7/GRSF-TraceabilityUnit-Day2\\_FIRMS-TWG-01Oct2021.pdf](https://www.fao.org/fileadmin/user_upload/faoweb/FI_Meetings/FIRMS/TWG7/GRSF-TraceabilityUnit-Day2_FIRMS-TWG-01Oct2021.pdf)