

FIRMS Protocols and Standards

FIRMS Steering Committee
10th SESSION

Copenhagen, Denmark, 20-24 June 2017

Relative to doc. FSC10/2017/4f



Presentation Outline

State and Trend standard indicators

- Adoption of FAO/SOFIA standard values
- Transparency and alignment across the FIRMS database

Revising FIRMS controlled terms and definitions

- Catch/landing time series
- Classification of Marine Resources
- Jurisdictional distributions of Marine Resources

Actions by FSC10

State and Trend standard indicators - Adoption of FAO/SOFIA values

FIRMS standard descriptors of Abundance level

- Pre-exploitation biomass or high abundance
- Intermediate abundance
- Low abundance
- Depleted
- Uncertain/Not assessed
- Not provided

FIRMS standard descriptors of Exploitation rate

- No or low fishing mortality
- Moderate fishing mortality
- High fishing mortality
- Uncertain/Not assessed
- Not provided

The FIRMS standard descriptors are mapped to FAO/SOFIA values “**Overfished**”/”**Fully fished**”/”**Underfished**” (a) or “**Overfished**”/”**Not overfished**” (b) according to the following rules:

a)

High fishing mortality	<i>Fully fished</i>	<i>Overfished</i>	<i>Overfished</i>	<i>Overfished</i>
Moderate fishing mortality	<i>Underfished</i>	<i>Fully fished</i>	<i>Overfished</i>	<i>Overfished</i>
No or low fishing mortality	<i>Underfished</i>	<i>Underfished</i>	<i>Fully fished</i>	<i>Overfished</i>
Uncertain / Not assessed	Pre-exploitation biomass or high abundance	Intermediate abundance	Low abundance	Depleted

b)

High fishing mortality	<i>Not Overfished</i>	<i>Overfished</i>	<i>Overfished</i>	<i>Overfished</i>
Moderate fishing mortality	<i>Not Overfished</i>	<i>Not Overfished</i>	<i>Overfished</i>	<i>Overfished</i>
No or low fishing mortality	<i>Not Overfished</i>	<i>Not Overfished</i>	<i>Not Overfished</i>	<i>Overfished</i>
Uncertain / Not assessed	Pre-exploitation biomass or high abundance	Intermediate abundance	Low abundance	Depleted

State and Trend standard indicators - Adoption of FAO/SOFIA values

Current workflow

Partner state and trend indicators

Partner specific mapping rules

FIRMS bi-dimensional state and trend indicators

Agreed mapping rules

ISSUES:

- In some cases FIRMS state and trend indicators not applicable
- Mapping to FAO/SOFIA mono-dimensional indicators only works if both FIRMS indicators of abundance level and exploitation rate are present

FAO/SOFIA mono-dimensional standard values

Details at:

http://figisapps.fao.org/FIGISwiki/index.php/FIRMS_Fishery_Resources_Standard_descriptors_for_State_and_trend

State and Trend standard indicators - Adoption of FAO/SOFIA values

PROPOSAL 1 (adoption of FAO/SOFIA standard indicators for state and trend):

For the above reasons, we propose the adoption of FAO/SOFIA standard values in the FIRMS framework, giving the option to map the Partner's values directly to the FAO/SOFIA values. In this regard, a pilot experiment has been conducted with GFCM.

State and Trend standard indicators - Alignment

The implementation of partner-specific mapping rules does not ensure a consistent use of the FIRMS standard values of state and trend across the FIRMS database, since different partners adopt different reference points and thresholds to assign a status to a marine resource:

Witch flounder - Southern Grand Bank (NAFO) (FIRMS factsheet - http://firms.fao.org/firms/resource/10321/en)			
NAFO Quantitative indicator	NAFO Qualitative indicator	Mapping to FIRMS standard values	Mapping to FAO/SOFIA standard values
$B/B_{msy} = 0.81$	Intermediate stock size	Intermediate abundance	Fully fished/Not overfished
$F/F_{msy} \ll 1$	None-Low Fishing Mortality	No or low fishing mortality	

Sardine - Southern Alboran Sea (GFCM) (FIRMS factsheet - http://firms.fao.org/firms/resource/13635/en)			
GFCM Quantitative indicator	GFCM Qualitative indicator	Mapping to FIRMS standard values	Mapping to FAO/SOFIA standard values
$B/B_{msy} = 0.91$	Overexploited	Not applicable	Overfished
$F/F_{msy} = 0.78$	Low fishing mortality	No or low fishing mortality	

State and Trend standard indicators - Alignment

QUESTION 1 (establishing a standardized framework for the use of state and trend indicators):

With the above considerations and keeping in mind the role of FIRMS, is there a need to establish a standardized framework of reference points/thresholds for the consistent utilization of the FIRMS (or FAO/SOFIA) standard values for state and trend across the whole FIRMS database? Alternatively, we would maintain the current approach of applying partner-specific mapping rules to assign the FIRMS (or FAO/SOFIA) standard values for state and trend, thus reflecting the expert and local evaluations made by the Partners. Note that in all cases the Partner's values would be displayed in the FIRMS fact sheets next to the FIRMS (or FAO/SOFIA) ones.

State and Trend standard indicators – Transparency

PROPOSAL 2 (transparency):

*Whatever approach we decide to follow, for the sake of transparency the full methodology used to assign the standard values of state and trend (including partner-specific mapping rules or standard evaluation framework) should be made readily available to the FIRMS users. In particular, **there should be a section of the FIRMS website where all the mapping rules are displayed. In addition, the relevant mapping rules should be readily accessible from each fact sheet.***

FIRMS Controlled terms and definitions – Catch/landings data series

Following TWG5 recommendation number 6 (http://www.fao.org/fi/static-media/MeetingDocuments/FIRMS/FIRMS_FSC10/3e.pdf), catch and landing data series (when available) have been included in the FIRMS Marine Resources module (previously they were included in the Fisheries module).

This has been implemented in the latest inventory updates for CCAMLR, GFCM, IOTC, CECAF

FIRMS Controlled terms and definitions - Classification of Marine Resources

Current Data Model:

- *Considered as a single stock* = Yes/No
- *Management Unit* = Yes/No

ISSUES:

- The term *Considered as a single stock* can be misleading
- Current definition of *Management Unit* is a “loose” one: those marine resources that are the object of at least some management measures. In the Fisheries modules attribute *Management Unit* has a stricter meaning: those fisheries which are the object of a Fisheries Management Plan (FMP).

FIRMS Controlled terms and definitions - Classification of Marine Resources

PROPOSAL 3 (*classification of marine resources*): We propose to clearly separate the concepts of biological stock and assessment unit, and to adopt a stricter definition of Management Unit as follows:

Attribute	Definition	Values
Biological stock	A subset of a species having the same growth and mortality parameters, inhabiting a particular geographic area and showing negligible mixing with adjacent subsets of the same species (adapted from Sparre and Venema, 1998).	Yes/No/ Unknown
Assessment Unit	The subset of one (or more) species that is the object of a given stock assessment. The assessment unit can coincide with the biological stock (ideally) or not. In some cases the biological stock boundaries are not known and assessment units are established on the basis of practical/political convenience. Being the focus of some assessment, the marine resources considered assessment units implicitly inform on the very likely existence of at least some management measures.	Yes/No
Management Unit	A fishery or a portion of a fishery identified in a Fishery Management Plan (FMP) ¹ relevant to the FMP's management objectives. The choice of an FMU depends on the focus of the FMP's objectives, and may be organized around biological, geographic, economic, technical, social, or ecological perspectives (FAO Term Portal)	Yes/No

FIRMS Controlled terms and definitions - Jurisdictional Distribution

PROPOSAL 4 (jurisdictional distribution): *Considering the importance of the Jurisdictional Distribution for the identification of the marine resources relevant to SDG 14.4.1, we propose a consolidation of the definitions for this attribute and relative controlled terms as follows:*

Attribute	Definition	Controlled terms	Definition
Jurisdictional distribution	Typology of marine resources in regard to their spatial distribution and how it relates to marine jurisdictions	National	Resources distributed within the EEZ of one country
		Shared between nations	Resources whose distribution overlaps and falls within the EEZs of two or more countries
		Highly migratory	Resources capable of migrating relatively long distances, which are likely to occur both within EEZs and high seas
		High seas purely	Resources that are not found in the EEZs
		Straddling between high seas and EEZ	Resources whose distributions overlaps the EEZ and adjacent areas beyond national jurisdiction

Actions to be taken by FSC10

1. Approve/modify:

- **Proposals 1** (on the adoption of FAO/SOFIA standard values in the FIRMS framework)
- **Proposal 2** (on transparency)
- **Proposal 3** (on the classification of marine resources - biological stock/Assessment Unit/Management Unit)
- **Proposal 4** (on the consolidation of definitions for Jurisdictional distribution)

2. Provide advice on:

- **Question 1** (establishing a standardized framework of reference points/threshold for the use of state and trend indicators)