

REGIONAL COMMISSION FOR FISHERIES

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Tenth meeting of the Working Group on Fisheries Management

Doha, State of Qatar, 6 - 8 December 2016

Update of RECOFI marine resources and fisheries inventory in FIRMS

Summary

RECOFI started its collaboration with FIRMS in 2009 with a dedicated workshop to formalize an inventory of marine resources/stocks and fisheries for the RECOFI area at both the national and regional levels, and for its eventual publication through the Fishery Resources Monitoring System (FIRMS [<http://firms.fao.org/>]). This report provides an overview of the current status of available RECOFI fisheries status reports and the number of records in the marine resources and fisheries inventories in FIRMS. Now it would be the time for a new round of updates for the RECOFI area particularly in the context of the SDG indicator 14.4.1: “proportion of fish stocks within biologically sustainable levels”. In terms of data ownership and acknowledgements, this document recalls the FIRMS partnership arrangement and reaffirms the full control RECOFI has on the information submitted and disseminated. A strengthened collaboration with FIRMS can contribute to a better data sharing in the region and return on investments through several benefits, including through the stocks and fisheries map viewer which is expected to give high visibility to the data providers.

The WGFM is kindly invited to provide any feedback on the exposed matters and, in particular, recommendations on the following: i) Feedback on the usefulness to RECOFI and its members of the FIRMS products (e.g. fact sheets, maps viewer, see also Annex 2) and beyond, expression of any other specific regional requirement or expectation to their benefit; ii) Fisheries inventory: confirm or modify the list of national focal points, decide the update of the inventory of fisheries, and encourage its extension to more countries (see paragraphs 6 to 9, 11, and Annex 1); iii) Marine resources inventory: nominate a FIRMS-RECOFI regional focal point, to be tasked to coordinate the development of an initial RECOFI inventory of marine resources which will be reviewed by WGFM11 for publishing through FIRMS (paragraphs 10 and 11). This action will contribute to SDG 14.4.1 (paragraphs 23 to 25). And in light of the eventual decision to move-on with a Marine resource inventory, WGFM is requested to provide: iv) a position of principle towards adopting a FAO harmonized reporting format in order to streamline the reporting workflow (paragraphs 14-16, 23-25 and Annex 3). Further details can be worked out during the intersession through the regional focal point; v) a position of principle on the application of the Traffic-light approach in RECOFI stock status reports towards publishing of this feature for RECOFI fact sheets (paragraph 19-20 and Annex 4).

Background

1. FAO is leading the FIRMS (Fisheries and Resources Monitoring System) partnership which aims to facilitate access to a wide range of high-quality information on the status and trends of global marine fishery resources, fisheries and their management. The overall goal of the FIRMS partnership is to provide decision-makers with necessary information to develop effective fisheries policies in accordance with the Code of Conduct for Responsible Fisheries.
2. The partnership, steadily growing, now brings together 14 Institutions representing 19 Regional Fisheries Bodies (RFBs)¹. Through the FIRMS website the partnership members contribute their information on status and trends through agreed FIRMS format “state and trends” reports structured on an inventory backbone of over 1000 marine resources and about 300 fisheries that these organizations provide advice on / or manage.
3. On-going efforts aim at: broadening geographic and thematic coverage through engagement of new partners; promoting the existence/potential of both stocks and fisheries inventories and reports so that national agencies and other actors can make the best usage of FIRMS fact sheets; addressing the needs expressed by users involved in reporting on the state of Marine environment, and in marine seafood traceability and certification etc.; and facilitating information reporting by FIRMS partners. The latter includes a standard protocol for streamlining national contribution on fishing activities through the partner RFBs and their capacity building for developing regions (e.g. CECAF, SWIOFC, RECOFI, WECAFC).
4. FIRMS enable its partners and data providers to tap into the knowledge and experience from a well-established, cost-effective system for sharing information on the monitoring of fisheries resources status and fisheries activities.
5. FIRMS can also play a catalytic role in the development of regional databases in support to the regional fishery management plans, as is currently the case in the WECAFC area. Capacity building facilities are also provided by FIRMS.

Assessment of RECOFI-FIRMS reporting status

6. The marine resources and fisheries inventories are expected to be used as the backbone for regular reporting of status and trends of stocks and fisheries under the RECOFI mandate.
7. The RECOFI marine resources and fisheries inventory stored in FIRMS reflects the work done during the FIRMS-RECOFI workshop held in Cairo on July 2009 (Report: <http://www.fao.org/docrep/015/i2353e/i2353e00.htm>) and the follow up with fishery experts of Bahrain, Iran, Oman and Qatar. Limited results were achieved with Saudi Arabia, United Arab Emirates, Iraq and Kuwait.

¹ Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), Commission for the Conservation of Southern Bluefin Tuna (CCSBT), Directorate-General for Maritime Affairs and Fisheries (DG MARE), FAO Fisheries and Aquaculture Department, General Fisheries Commission for the Mediterranean (GFCM), Inter-American Tropical Tuna Commission (IATTC), International Commission for the Conservation of Atlantic Tuna (ICCAT), International Council for the Exploration of the Sea (ICES), Indian Ocean Tuna Commission (IOTC), Northwest Atlantic Fisheries Organization (NAFO), North Atlantic Salmon Conservation Organization (NASCO), North-East Atlantic Fisheries Commission (NEAFC), Southeast Asian Fisheries Development Center (SEAFDEC), South East Atlantic Fisheries Organisation (SEAFO).

8. 68 RECOFI Fishery fact sheets were eventually published with the endorsement of the Commission (7th Session May 2013) and further clearance of the WGFM (7th Session November 2013). The fact sheets, with reporting year = 2012, were produced by Bahrain (11), Iran (15), Oman (28) and Qatar (14).

9. At that time, national focal points were identified to complete the work or for any updates. Countries were also invited by the Commission to follow-up. See Annex 1 for the list of national focal points.

10. An inventory for marine resources was also drafted, rather limited to national resources of Iran (92 resources) and Qatar (104 resources). A true regional inventory of RECOFI marine resources was postponed until WGFM be in a position to structure such inventory. Considering the WGFM meeting document “RECOFI/X/2016/2 - Country reports: Current work on RECOFI priority species” http://www.fao.org/fi/static-media/MeetingDocuments/RECOFI/RECOFI_2016_10th/2e.pdf, it now appears that there would be relevant information to report on state and trend for several resources/stocks in the RECOFI area.

11. For RECOFI consideration:

- the inventory of fisheries should be updated and extended to more countries;
- the inventory of Marine resources could proceed in light of the work done by the countries on priority species; the Committee could provide some guiding criteria for initiating such inventory e.g. start with stocks known to be shared regionally (e.g. Narrow-barred Spanish mackerel) and those having established national assessment units such as for shrimp. This work could be reviewed by WGFM11 for publishing in FIRMS.

Prospects: FIRMS on-going developments and possible implications to RECOFI

12. The ninth FIRMS Steering Committee meeting (FSC9, February 2015, Namibia) stated that FIRMS is now a mature framework which RFBs and their member countries are encouraged to use for their own benefits.

13. In order to encourage investment in FIRMS reporting by its members, FSC9 agreed upon new developments which are expected to boost the usage of FIRMS worldwide, hence procure Returns On Investment to its members. These new developments include:

- **Towards mechanisms ensuring reporting timeliness**

14. FIRMS is committed to reduce reporting burden while increasing the impact of reports contributed. This strategy will proceed as follows: enabling a global objective of stocks status monitoring through a Minimum data requirements approach combined with indexing a-la-google of source documents; supporting regional strategies as requested by FIRMS partners and the associated reporting requirements.

From an implementation view point, the current FIRMS fact sheets production workflow includes an Excel based facility to collate information upon a FIRMS standard template for an easy storing of data and transformation in web products (e.g. fact sheets, viewers, interfaces for data analysis). See Annex 3 for the FIRMS Marine Resource template for the submission of minimum data requirement.

15. For Global Stocks status: the Minimum data requirements approach will strive to facilitate reporting to FIRMS by mainstreaming this reporting flow with Partner’s established reporting procedures.

16. For RECOFI consideration: as part of this effort, the FAO RFBs are encouraged to consider adopting a harmonized reporting format in order to streamline the reporting workflow. RECOFI should consider how their reporting format on the status of stocks can be mapped/aligned-with/feed-into the FIRMS reporting format as materialized primarily through Excel based FIRMS reporting format (see Annex 2).

- **FIRMS maps viewer, and other on-line services**

17. The FIRMS user interface and navigation requires re-engineering. FSC9 decided to proceed with the development of an interactive mapping application capable to display stocks and fisheries and other relevant layers in a given region, upon user requests. The new interface will be enabled to dynamically show maps and selected contents on status of fishery resources extracted from the FIRMS database. The development of the new interface and navigation tool has been completed and will be soon published (See Annex 2 with screenshots).

Among other services, FIRMS offers embedding facilities to display fact sheets in other websites (e.g. RFB or national websites).

18. For RECOFI consideration: It is suggested that RECOFI embeds the SWIO regional view of the FIRMS maps viewer in its website.

- **Dashboard of stock status indicators for the region – traffic light approach.**

19. In order to better communicate the state of marine resources, the last steering committee (FSC9, February 2015) suggested to move towards the “traffic light approach” where possible and depending on agreement of partners. The red-green visual indicators could contribute to easily communicate qualitative indications of the overall state of the resource. These will build on the standard FIRMS state and trend descriptors displayed in FIRMS marine resource fact sheets. Development of this functionality is in a finalization phase under the guidance of the FIRMS Technical Working Group (TWG). See examples in Annex 3.

20. For RECOFI consideration: validating the implementation of the traffic light approach is requested by each FIRMS partner before publishing its marine resources fact sheets with this feature.

- **Global Record for stocks and fisheries: towards use of FIRMS stocks and fisheries references for traceability purpose**

21. Actors involved in traceability of fishery products show a potential of becoming major users of stocks and fishery reports. This will occur provided a critical mass of such information can be made available. Towards such objective, FIRMS is currently engaged in the development of the “Global Record of Stocks and Fisheries” (GRSF) which will federate knowledge on status/trends of stocks and fisheries across various global sources, and as such is expected to offer key services to stakeholders involved in “regional/global state of stocks indicators”, as well as public and private actors involved in ecolabelling, traceability and sustainable fisheries. This project is supported by the EU funded BlueBridge. A first release of the prototype is expected by the end of the year.

22. For RECOFI consideration: provision of updated data on RECOFI fisheries will contribute to this global objective to support traceability.

Minimum data requirements in support of Sustainable Development Goal (SDG) 14.4.1

23. The FAO Fisheries and Aquaculture department has been requested to provide support of the implementation of the UN Sustainable Development Goals (<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>), particularly SDG 14 “Conserve and sustainably use the oceans, seas and marine resources”.

24. In this context, FIRMS is expected to be functional for the indicator SDG 14.4.1: *Proportion of fish stocks within biologically sustainable levels*. It is also in this context that a Minimum Data Requirements approach was envisaged to facilitate the data submission workflow from the partners to FIRMS by minimizing the amount of information required. The minimum data requirements for stocks include information on the identification of single marine resources/stocks (i.e. species name, area(s) of distribution) plus the indicators of Stock State and total catch (or landings). This core information can be further complemented with methodology used for stock assessment, scientific advice and any other biological and ecological insight.

25. For RECOFI consideration: FAO will develop a training curriculum on SDG 14.4.1 in 2017 and RECOFI and/or its Members might indicate their interest to be part of the Global workshop aimed at training regional trainers.

Ownership and reference

26. As per FIRMS partnership arrangements, the partners remain the owners of the information disseminated through the FIRMS website. A clear ownership statement is provided within each fact sheet, also contributing to the visibility of the body. RECOFI has full control on the information disseminated, and publication of fact sheets is made upon RECOFI clearance. Transparency and paternity of information contained within the fact sheets is ensured with references to the sources of information used.

Benefits for RECOFI deriving from a collaboration with FIRMS

27. Recent discussions among FIRMS partners (FIRMS FSC9 Feb. 2015, FIRMS TWG5 Feb. 2016) highlighted several benefits for the partners, beyond their commitment on data provision under the partnership arrangement:

- Visibility at global level;
- Possible triggering of donors’ interest when the effective accessibility and reutilization of information and data is deemed strategic;
- Clear involvement and contribution to political agenda (SDG 14.4.1);
- Provision of FIRMS data services to RECOFI (e.g. map viewer, analytical tools, data dissemination capacity); and
- Provision of capacity building.

28. In regions where developing countries have limited availability of fishery data and low capacity in assessment and management, FIRMS supports the integration of fishery data and information among countries so that they can be used more efficiently to support management and policy making decisions in the region as well as for general public awareness.

A current example of how countries can benefit from their collaboration with FIRMS occurs under the EU funded WECAFC-FIRMS project in the Caribbean. Here, FIRMS is contributing to the creation of a Regional Database functional to support Fisheries Management Plans for selected priority species, including a stock assessment component. Consensus was obtained among

WECAFC member countries on need for minimum data requirements for stock assessment towards a Data Collection Framework (DCF). Through inventories of both fisheries and stocks, FIRMS provided the backbone for data sharing and collation, thus contributing to capacity building and countries' statistical capacities.

Requested actions by the Scientific Committee

29. The WGFM is invited to review the above aspects of RECOFI interest and provide feedback, and/or make decisions or provide recommendations on the following aspects:

- Feedback on the usefulness to RECOFI and its members of the FIRMS products (e.g. fact sheets, maps viewer, see also Annex 2) and beyond, expression of any other specific regional requirement or expectation to their benefit;
- Fisheries inventory: confirm or modify the list of national focal points, decide the update of the inventory of fisheries, and encourage its extension to more countries (see paragraphs 6 to 9, 11, and Annex 1);
- Marine resources inventory: nominate a FIRMS-RECOFI regional focal point, to be tasked to coordinate the development of an initial RECOFI inventory of marine resources which will be reviewed by WGFM11 for publishing through FIRMS (paragraphs 10 and 11). This action will contribute to SDG 14.4.1 (paragraphs 23 to 25).

And in light of the eventual decision to move-on with a Marine resource inventory, WGFM is requested to provide:

- A position of principle towards adopting a FAO harmonized reporting format in order to streamline the reporting workflow (paragraphs 14-16, 23-25 and Annex 3). Further details can be worked out during the intersession through the regional focal point;
- A position of principle on the application of the Traffic-light approach in RECOFI stock status reports towards publishing of this feature for RECOFI fact sheets (paragraph 19-20 and Annex 4).

Resources

- [RECOFI Fishery fact sheets](#)
- RECOFI-FIRMS marine resources and fisheries inventory: http://www.fao.org/fi/static-media/MeetingDocuments/RECOFI/RECOFI_2016_10th/default.htm
- [RECOFI Publications](#)

Annex 1 – List of RECOFI national focal points

AL-RADHI Abdul Karim Habib

Chairperson for WG-FM and RECOFI-FIRMS Workshop.
Bahrain

NOORIDAFRAZI Reza

Iran (Islamic Rep of)

VALINASSAB Tooraj

Iran (Islamic Rep of)

ALAZMI Marzouq

Kuwait

JUMAA Basem

Iraq

AL JABRI Yaqoob Salem

Oman

Al Siyabi

Oman

AL-SHAIKH Khalid Ali Omar

Oman

AL-MOHANADY Jassem Saleh

Qatar

AL-BINALI Abdul Rahman

Qatar

AL SHAIA Khaled

Saudi Arabia

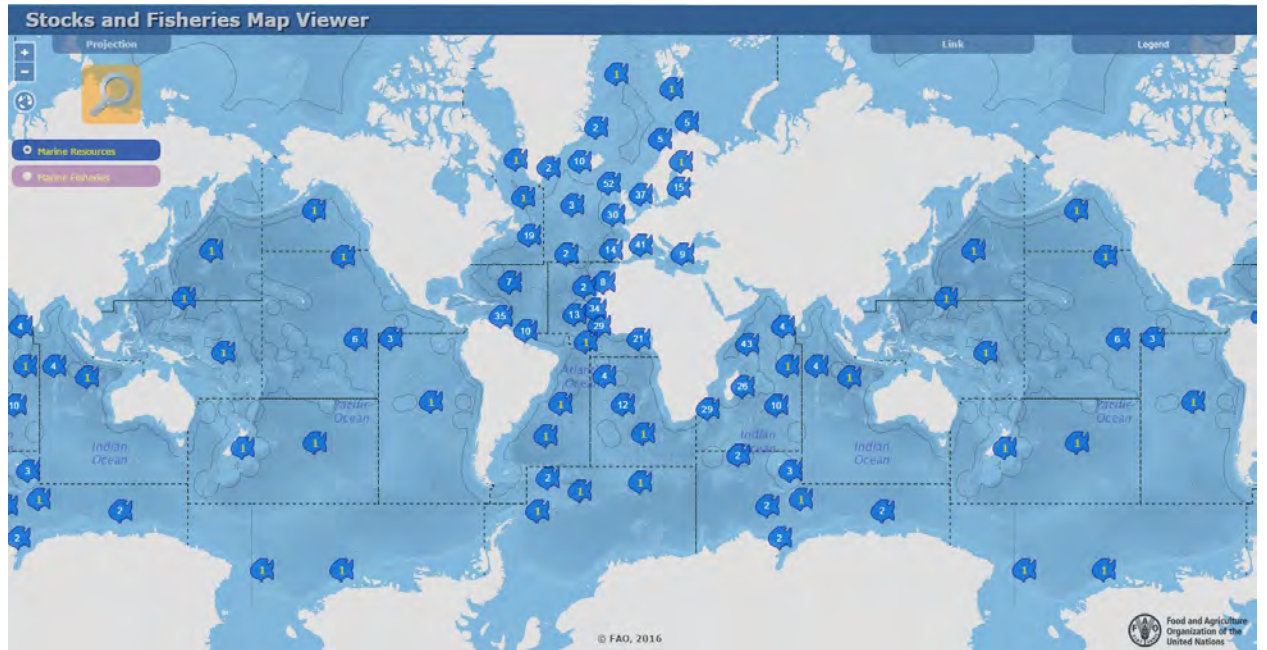
AL SHAHAB Abdelaziz

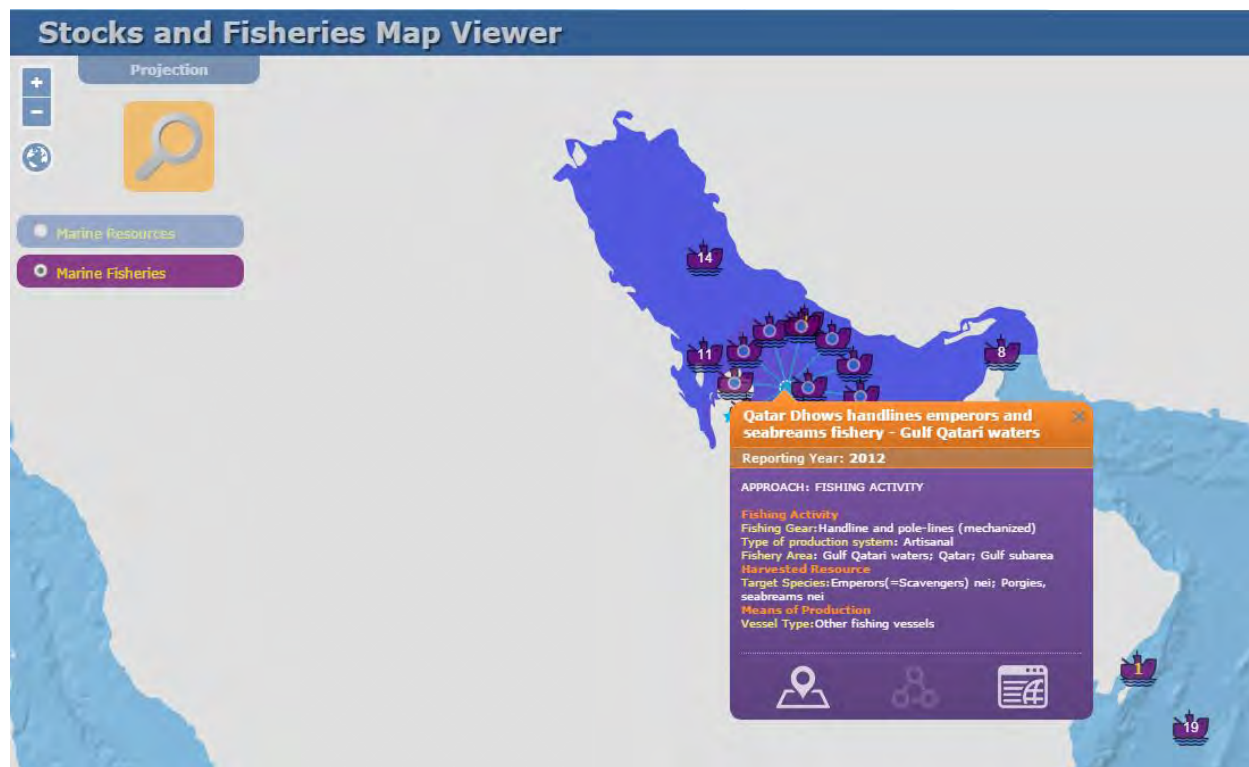
Saudi Arabia

KRIMLY Waleed

Saudi Arabia

Annex 2 – Screen shots for the Stocks and Fisheries Map Viewer





Annex 3 – FIRMS Marine Resource template (Excel format)

The template includes three components:

- Inventory of marine resources: fields required for the once-off identity card of fish stocks;
- Minimum reporting requirements: fields (underlined with a red cell) required for regular reporting in the context of global state of stocks monitoring; and
- Additional fields are optionally available to satisfy specific regional reporting requirements.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	MARINE RESOURCE REFERENCE			MARINE RESOURCE TITLE		RESOURCE STRUCTURE		MANAGEMENT		AREA OF DISTRIBUTION								SPECIES										
2	FIRMS ID	Inventory identifier	Parent marine resource	FIRMS Standard Title	Local title		Considered a stock	Description	Management unit	Description	Primary Georeferencing System			Other Georeferencing System			Spatial scale	Jurisdictional distribution	Order	Family	Genus and species	Marine habitat						
3					Title	Language					Georeferencing System Name	Area Codes in this system	Area Name	Georeferencing System Name	Area Codes in this system	Area Name						Geoform	Depth zone	Horizontal distribution	Vertical distribution	Bottom type	Climatic zone	Marine habitat description
4																												
5																												
6																												

	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW
	EXPLOITATION				ASSESSMENT METHODS											STATE OF MARINE RESOURCE					
	Exploiting fishery	Catches or landings	Quantity	Description	Assessment overview	Assessment data	Empirical Assessment			Assessment Models			Level of uncertainty	Overall assessment Results	Scientific advice	Exploitation rate	Exploitation Rate Free Value	Abundance Level	Abundance level free value	FAO State	Description
							Type of Empirical Assessment	Based on	Description	Types of Model	Title of Models	Description									

	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK
	REFERENCES								OWNERSHIP			Notes	Fact Sheet Language	
	Bibliography	Link to Bibliography	Source	Links to Source	Reference year	Reporting year	Start/End Monitoring Year	Ancestor Monitored Resource	Descendant Monitored Resource	Inventoried by	Collection identifier			Cover page identifier

Annex 4 – Examples of traffic light icons









State & Trend Descriptors			
	Partner	FIRMS	
Exploitation rate	High Fishing Mortality	High fishing mortality	 [?]
Abundance level	Intermediate Stock Size	Intermediate abundance	

State & Trend Descriptors			
	Partner	FIRMS	
Exploitation rate	Moderate (Below Fmsy)	Moderate fishing mortality	 [?]
Abundance level	Low abundance	Low abundance	
FAO			
Exploitation state	Overexploited		

State & Trend Descriptors			
	Partner	FIRMS	
Exploitation rate	F2013/F0.1 = 0.4		 [?]
Abundance level	SSB2013/SSBF0.1: Medium recruitment (1950-2006) =1.10 / Low recruitment (1970s)=1.60 / High recruitment (1990s)=0.67		
		Moderate fishing mortality	
		Intermediate abundance	

State & Trend Descriptors		
	FIRMS	
Exploitation rate	No or low fishing mortality	 [?]
Abundance level	Uncertain/Not assessed	

Disclaimer: The FIRMS State and Trend Descriptors are qualitative indicators based on the stock status evaluation provided by the FIRMS Partners. The coloured icon aims to indicate the overall state of the marine resource in regard to the exploitation rate and abundance level matrix.

Exploitation Rate (FIRMS)	Abundance Level (FIRMS)			
	Pre-exploitation biomass or high abundance	Intermediate abundance	Low abundance	Depleted
High fishing mortality				
Moderate fishing mortality				
No or low fishing mortality	