

<b>FIRMS Steering Committee Meeting</b>
<b>Tenth Session</b>
<b>Copenhagen, Denmark 21-24 June 2017</b>
<b>REVIEW OF THE FIRMS ACTIVITIES DURING THE INTERSESSIONAL PERIOD (February 2015 – May 2017)</b>
<b>Secretariat Report on Progress and Issues</b>
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<b>Management Summary</b>

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## **1. Developments on Marine Resource and Fishery inventories and related FIRMS fact sheets**

Beyond the regular workflow and dissemination activity by FIRMS partners and Secretariat, main aspects regarding the inventories and the fact sheets are described in the following sections.

### **1.1 Marine Resource inventories**

- CCAMLR: The inventory was updated, including the addition of a new marine resource. Related fact sheets were produced and published.
- GFCM: The inventory was enriched with 9 new marine resources. Related fact sheets were published in addition to the update of the fact sheets already released.
- ICES: 44 new marine resources were identified through the “Standard graphs Web Service APIs” provided by ICES (<http://standardgraphs.ices.dk/webservices.aspx>). The production of fact sheets is in progress.
- IOTC: The full inventory was updated and the related fact sheets were produced and published.

FAO and its Article VI RFBs:

- CECAF: The inventory was updated and 69 new marine resources were added. The production of fact sheets is in progress.
- WECAFC: Updated 7 marine resources and published 5 fact sheets.
- RECOFI (Article XIV): 40 new marine resources were added to the inventory based on the focus species identified in the RECOFI Working Group on Fisheries Management Reports (WGFM-9 and WGFM-10).
- SWIOFC: a FIRMS focal point was identified during the SWIOFC SC7 meeting (Moroni, Dec. 2016), for assisting in the updating of the SWIOFC inventory and related fact sheets.

Further details of FIRMS partners’ activities (CCAMLR, CCSBT, ICCAT, ICES, NAFO, NASCO, SEAFO) are available under the document section FIRMS FSC10/2017/2.

### **1.2 Fishery inventories**

- CCAMLR: The inventory was updated, including the addition of a new fishery. Related fact sheets were produced and published.
- SEAFO: compilation of fishery management units are in progress.

FAO and its Article 6 RFBs:

- WECAFC: 12 new fisheries were included in the inventory. A total of 20 fisheries were published along the WECAFC-FIRMS collaboration.
- FAO: the inventory was updated with the addition of 38 new fisheries from the “Worldwide review of bottom fisheries in the high seas” (FAO, 2009. Technical Paper 522, Rev.1). Related fact sheets were published.

### **1.3 Indicators on FIRMS Marine Resource and Fishery fact sheets**

The following tables and graphs show the total number of units inventoried (1479 marine resources and 738 fisheries) and the trends regarding the production of fact sheets per partners vs. reporting years.

The FIRMS web site is currently disseminating fact sheets as follows: 878 current records (i.e. primary observations: 624 marine resources and 254 fisheries) and 533 historical records (i.e. secondary observations: 489 marine resources and 44 fisheries)<sup>1</sup>.

**Table 1:** FIRMS Marine Resources and Fisheries inventoried units<sup>2</sup>, Reference Observations<sup>3</sup> (RO) and number of fact sheets<sup>4</sup>. (Updated 14<sup>th</sup> June 2017)

Partner	Inventoried units	Reference Observations		Fact Sheets by Reporting Year										
		Resources	Fisheries	≤ 2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 2017
CCAMLR	19	19				2		1		15				19
	19		19			7			18					19
CCSBT	1	1												1
FAO	60	22		4					18					
	41		41				41							
CECAF	286	286		94	17	8	7			6				
	289		198						77		4			
RECOFI	143													
	68		68							68				
SWIOFC	137	137						117						
WECAFC	269	243		44		1	2	1				1		
	262		34											20
GFCM	135	80		21	5	10	9	1	24	1		5	31	
IATTC	23	37												8
	16		1											1
ICCAT	29	29		1	1	2	6	1	4	3	4	5	3	6
ICES	332	284		147	52	3	171			83				
IOTC	15	15		4			3							15
NAFO	18	18		27	7	8	9	11	12	4	11	8	7	3
	5		5				1	2	3	4	5	2	1	
NASCO	7		1								1			1
NEAFC	11		11				8							1
SEAFDEC	14		14	8										
SEAFO	12	12					12					5	2	
	6		1							1				
Total	2217	1183	393	350	82	41	269	134	156	185	25	26	44	94
		1576		1406										

<sup>1</sup> These figures include three BNP (FAO Big Number Project) and 2 DG Mare case studies fact sheets not included in the following summary tables and graphs.

<sup>2</sup> For each Partner, the first row represents the number of Marine Resources and the second row the number of Fisheries; the "inventoried units" are the total number listed in Excel sources (excluding headers and groups). When source inventoried units are validated, one "inventory record" is created in the FIRMS database for each inventories unit.

<sup>3</sup> Reference Observations are "inventoried units" loaded in the FIRMS system against the "inventory records", with all the stable/long lived descriptive metadata

<sup>4</sup> Fact Sheets are inventoried units for which state and trend reports or other qualitative and quantitative information have been loaded in the system. The most recent fact sheet for a given inventoried unit is the primary observation, while older fact sheets have a status of secondary observation, which according to partners' policy remain or not in the public domain.

## Notes

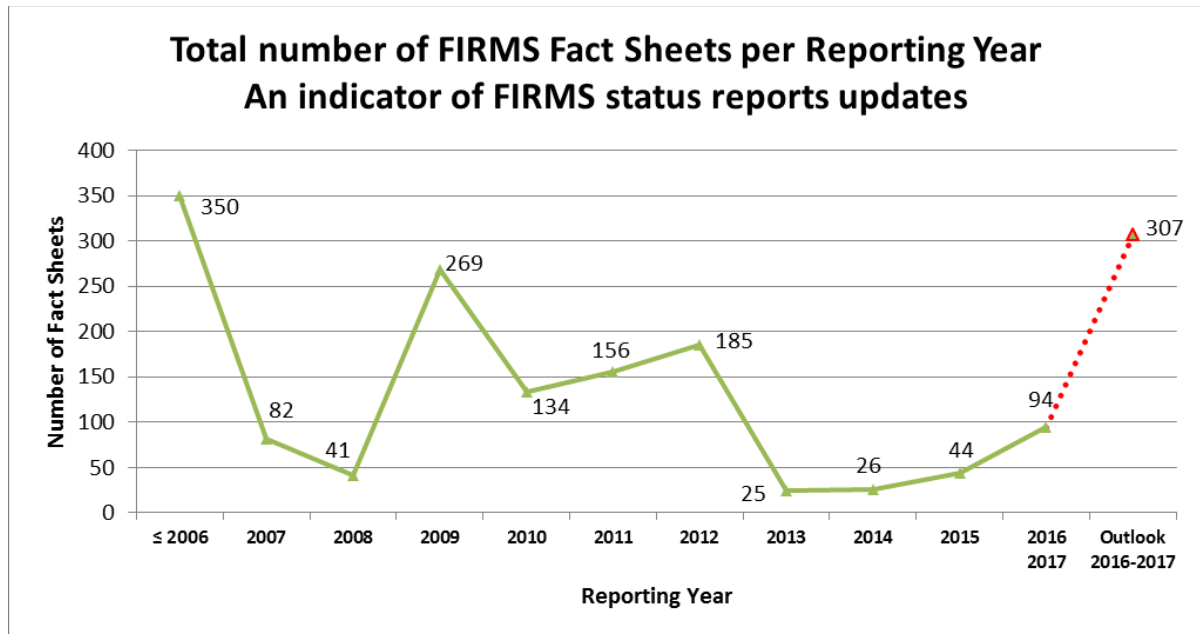
- IATTC and CCSBT: as per these partners' policies, historical observations are hidden, only the latest reports are available in internet.
- SEAFO provided updates for five marine resources not yet loaded in the database at the time of the compilation of this report.
- CECAF SWIOFC, and WECAFC: Numbers of reference observations and related fact sheets are changing due to the current inventories' validation and loading process as well as new interactions with new bodies' representatives.
- Figures for BNP (FAO Big Number Project) (3 fisheries), DG Mare (2 fisheries), and BOBLME project (1 marine resource and 4 fisheries) are not reported due to their nature of case study or because of their initial status (BOBLME).
- Several other fact sheets are in progress as described in Table 3 presenting an outlook for 2017 based on the current work of some Partners in collaboration with the FIRMS Secretariat.

**Table 2:** Fact sheets update turn-over expressed in percentage as ratio of number of fact sheets on total number of Reference Observation (RefObs). (Updated 14<sup>th</sup> June 2017)

Partner	Inventoried units	Reference Observations		%Fact sheets/RefObs										
		Resources	Fisheries	≤ 2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
CCAMLR	19	19				11		5		79				100
	19	0	19			37			95					100
CCSBT	1	1												100
FAO	60	22		18					82					
	41		41				100							
CECAF	286	286		33	6	3	2			2				
	289		198						39		2			
RECOFI	143													
	68		68							100				
SWIOFC	137	137						85						
WECAFC	269	243		18			1							
	262		34											59
GFCM	135	80		26	6	13	11	1	30	1		6	39	
IATTC	23	37												22
	16		1											100
ICCAT	29	29		3	3	7	21	3	14	10	14	17	10	21
ICES	332	284		52	18	1	60			29				
IOTC	15	15		27			20							100
NAFO	18	18		150	39	44	50	61	67	22	61	44	39	17
	5		5				20	40	60	80	100	40	20	
NASCO	7		1								100			100
NEAFC	11		11				73							9
SEAFDEC	14		14	57										
SEAFO	12	12					100					42	17	
	6		1							100				

**Table 3:** Outlook of 2017 updates based on the current work of the Partners developing new fact sheets in collaboration with the FIRMS Secretariat.

Partner	Marine Resource fact sheet	Fishery fact sheets
ICES	~187	
CECAF	99	
NEAFC		8
SEAFO	~12	1
Total	298	9



**Figure 1:** Total number of fact sheets per Reporting Year. The “Outlook 2016 - 2017” is based on current activities for the forthcoming release of fact sheets from the following partners: ICES (~187) + CECAF (99) + SEAFO (~13) + NEAFC (8)

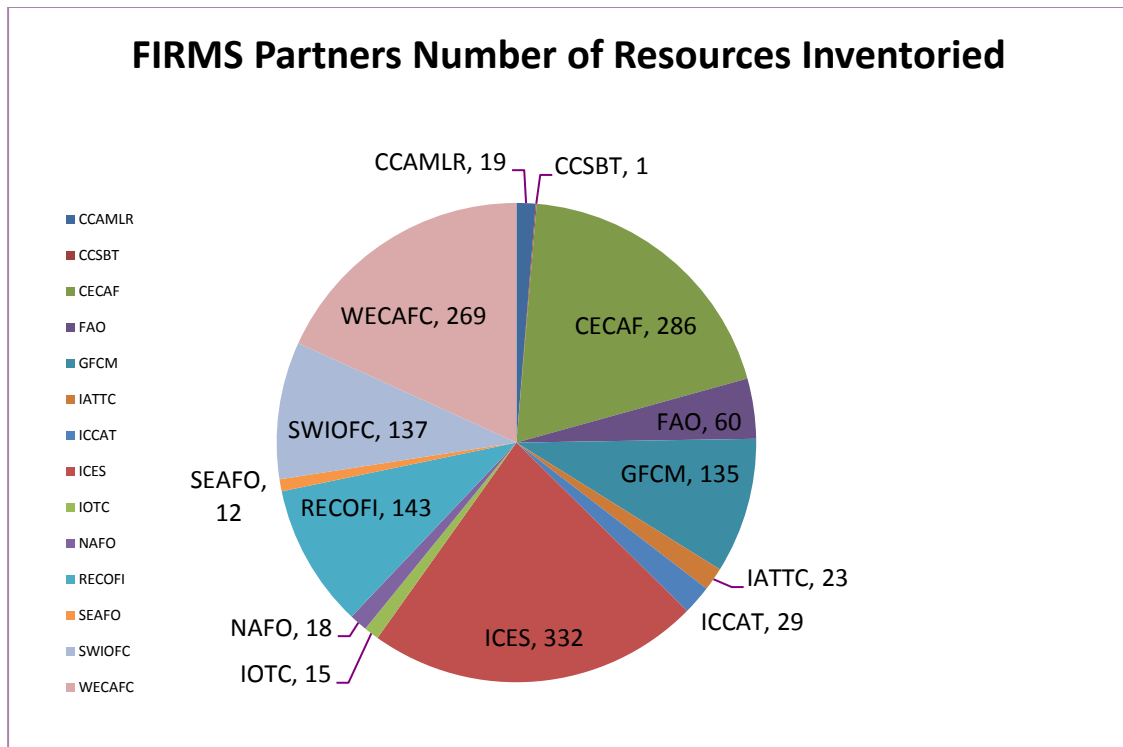


Figure 2: FIRMS Partners Number of Resources Inventoried

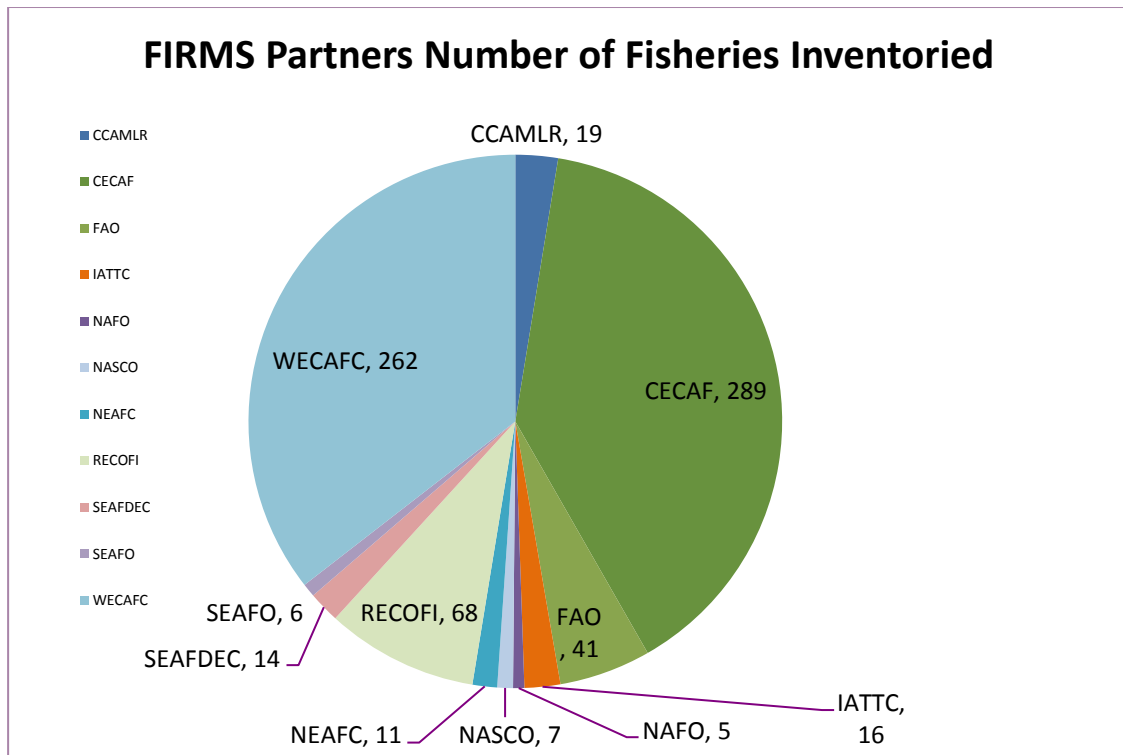
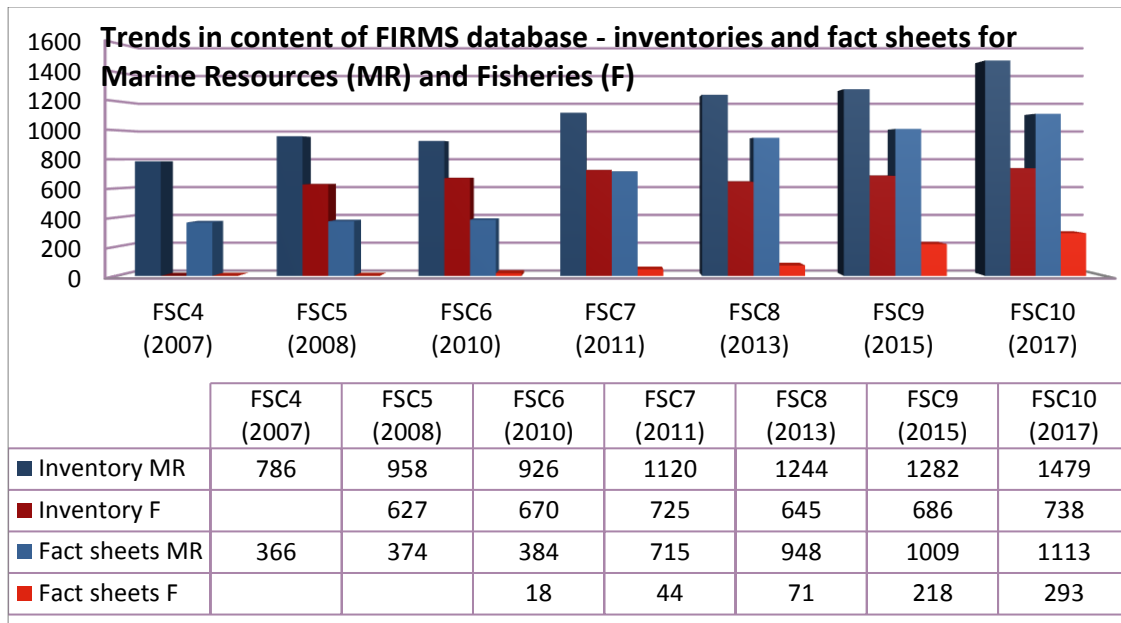


Figure 3: FIRMS Partners Number of Fisheries Inventoried



**Figure 4:** Trends in content of FIRMS database – inventories and fact sheets for Marine Resources (MR) and Fisheries (F)

Figure 4 depicts the growing trend across FSCs of inventoried Marine resources and fisheries, and fact sheets published (i.e. status and trends reports) for these inventories. Since the FIRMS launch, the total effort to produce status and trends reports can be calculated as the total number of primary (i.e. “current”) and secondary (i.e. “past”) observations for both Marine Resource (1113 observations) and Fisheries (293 observations).

## 2. Development of Applications

Scope: the FIRMS website is currently articulating the following modules:

- FIRMS fact sheets: Marine Resource, Fishery
- FIRMS web site pages: Topic, Organization
- Web application:
  - Workflow Management System (WMS), including Content Management System (CMS) and Word/Excel-to-XML converter tools;
  - Dynamic mapping component including the new Stocks and Fisheries map viewer;
  - Web services.

### 2.1 FIRMS fact sheets

#### Marine Resource module

This module has been 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 (FSC9/D7.2, TGW 5, and TWG 5.1-5.3).

Regarding FSC8/FSC9 decisions, It is still pending the alternative layout for no longer monitored marine resources (Monitoring period), and the display of partners’ logo in the fact sheets.

### **Fishery module**

This module has been updated with few improvements of the overall layout. Like the marine resource module the alternative layout for closed fisheries (Fishery life cycle) and the display of partners' logo in the fact sheets have not been implemented yet. The new text fields for Indicator of data reliability - Fishery importance are supported but not fully implemented nor utilized yet.

### **2.2 FIRMS web site pages**

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.

Regarding the overall upgrade of the FIRMS website, the 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".

### **2.3 FIRMS in Spanish language**

In the context of the WECAFC-FIRMS collaboration the FIRMS website has been updated to support the Spanish language. All main pages of the website have been translated 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.

### **2.4 Web applications**

#### **Workflow Management System (WMS)**

The expression WMS covers the on-line Content Management System (CMS) and the conversion tools used to streamline at Partner and Secretariat level the compilation of documents from their native format (Word or Excel) into the XML format for the web dissemination.

The following improvements took place during the intersessional period:

- The Excel/Word-to-XML converter tool was further configured for the "minimum data requirement" approach and massively utilized to produce and publish reference observations and fact sheets; and
- The Excel transformation has been further improved for both fact sheets modules to handle time series data such as catch/landings or other indicators.

#### **Dynamic mapping component**

The FIRMS "Stocks and Fisheries Map viewer" was published in the FIRMS website (<http://firms.fao.org/firms/stocks-fisheries-map-viewer>). With this new interface, users are able to access information on marine resources and fisheries through a global map, browsing icons by area. Stock status and fishing activities information, as well as links to source fact sheets, are provided in pop-ups. In addition, a free text search tool enables quick access to FIRMS data with export facilities. The viewer can be also embedded in partners' websites with focus on selected areas of competence.

This new web product has been developed in the context of the on-going renewal of the FIRMS website which is expected to better serve users by facilitating the perusal of stocks and fisheries inventories of the FIRMS partners.

## **FIRMS data coverage maps**

No changes were made in the data coverage maps published in the FIRMS website.

### **3. Status of FIRMS website**

This section is a concluding statement on the status of the FIRMS website, which highlights what is done and working well, what is not completed, and what should be started. It should be pointed out that several decisions from FSC9 have been implemented regarding the new user interface for stocks and fisheries while the renewal of the website is in progress considering the possible migration under FAO.org offering new features and layouts. (See full status of implementation of FSC9 recommendations in Annex 1)

#### **3.1 Database content**

During the intersessional period, some new Marine Resource inventory records have been stored in the FIRMS data base and the related fact sheets have been produced and disseminated.

FIRMS is presently disseminating state and trends information on 613 Marine Resources through 1113 published fact sheets (624 primary and 489 secondary observations).

Concerning the Fishery module, FIRMS is presently disseminating information through 298 fact sheets (254 primary and 44 secondary observations).

It should be noted that some partners' policies lead them to unpublished fact sheets in order to avoid the dissemination of historical, or (when the history consists of only one report) of outdated information. For this reason the overall number of published fact sheets can show a fluctuating trend over the years. One of the most obvious consequence of such policies is the loss of any information related to those marine resources or fisheries at FIRMS public site level. However this information still resides in the FIRMS database with an unpublished status.

#### **3.2 Website shell**

The FIRMS website shell now offers a new World map in the FIRMS home page and links to the Stocks and Fisheries map viewer.

#### **3.3 Marine Resource and Fishery dissemination modules**

The Traffic light approach was activated for the published fact sheets of selected partners (i.e. IATTC, ICCAT, and NAFO). Here, a traffic light icon complements the state and trend description of the marine resources, providing a visual indication: red for overfished and green for not overfished. More information can be found at [http://figisapps.fao.org/FIGISwiki/index.php/FIRMS\\_Fishery\\_Resources\\_Standard\\_descriptors\\_for\\_State\\_and\\_trend](http://figisapps.fao.org/FIGISwiki/index.php/FIRMS_Fishery_Resources_Standard_descriptors_for_State_and_trend) and under the Annex 2 - Firms Draft Guidelines of the Information Management Policy (IMP) document.

In addition of what was obtained by FIRMS FSC9, further improvements are regularly implemented at layout level any time the need emerges from new data submissions.

### 3.4 Mapping module

The mapping module is integrated within FIGIS. Thus the recent work done on other FIGIS thematic web-mapping interfaces gave positive side effects on FIRMS.

Specifically:

- More technical improvements resulted in faster map loading and display, and a better support for mobile and tablet devices;
- The FIRMS fisheries/marine resources data layer displayed in the map viewer are regularly updated through a semi-automated data processing flow, and available for retrieval through the FAO GeoNetwork (<http://www.fao.org/geonetwork>); and
- Additional layers could be potentially exploited in the FIRMS Stocks & Fisheries map viewer by existing FIGIS mapping capabilities.

An ongoing discussion is with CCAMLR regarding their classification system for areas. Codes, labels and shapefiles could be added within FIRMS as part of the RFB standard geographic systems. Similar to ICCAT or IATTC such layers would be displayed in the CCAMLR-FIRMS fact sheets.

### 3.5 Services offered by the FIGIS infrastructure to the Partners

Following services are regularly available:

- Marine Resource or Fishery fact sheets can be returned in HTML, or in XML format. The later enables a partner to reformat it for another purpose (e.g. as PDF to include as part of a paper report, or as HTML as part of a partner website);
- State and Trend Summaries can be downloaded as Excel files for further analysis
- Web-services are available enabling Partner's websites or systems to query and retrieve specific subsets of factsheets given an area or a species.
- Two new web services were developed to retrieve selected information from the Marine Resource and Fishery module with focus on state and trend indicators and on key components of fisheries (target species, fishing gear type etc.).
- Geospatial web services are also available for embedding maps in partners' websites including a customizable version of the new Stocks and Fisheries map viewer.

### 3.6 Web trends statistics

The detailed and illustrated analysis of web trends statistics during years 2007-2016 is available in document FIRMS FSC10/2017/Inf.8<sup>5</sup>. Here follows some conclusions based on the above mentioned document. The analysis conducted is based on the web trends provided by Google Analytics and refers to the period January 2007 - December 2016.

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<sup>5</sup> Doc. FIRMS FSC10/2017/Inf.8 is accessible at [http://www.fao.org/fi/static-media/MeetingDocuments/FIRMS/FIRMS\\_FSC10/inf8e.pdf](http://www.fao.org/fi/static-media/MeetingDocuments/FIRMS/FIRMS_FSC10/inf8e.pdf)

The overall number of page views and sessions mainly increased through time. The upward trends of 2015 and 2016, and the outlook for 2017 (based on a simple extrapolation from the first five months January to May 2017), show an overall increase of the FIRMS usage, and also reflect the success of the actions taken to repair the technical incidents which caused reduced crawling and indexing activity in 2012 and 2014 (as described in the previous web trends report FSC8-FSC9).

The analysis on traffic sources show that 44% of access to FIRMS is through referral sites, while about 39% is through search engines (mostly Google) and the remaining 17% is due to direct traffic.

The bounce rate is about 50% for the home page and for the search interfaces; it is more variable for fact sheets with higher and lower values.

The average session duration (the average length of a session) 00:02:41 but with greater peaks in selected pages. Such average length increased in comparison with the previous analysis (2007-2014, reported in FSC9) when the average session duration was 00:01:44.

These numbers suggest that the fact sheets (authoritative sources of information on status of fishery resources) trigger interest when users manage to access them.

In terms of device categories, 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.

An initial assessment on key words shown 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 key words place FIRMS among the first results.

The following results are based on cumulated web trends across the whole 2007-2016 period. These coarse scale results can be interpreted only as global and smoothed over a 9 years period.

Mostly North America followed by Europe is the region with the highest level of visits followed by several Asian countries. 70% of the visits are made by English-based browsers. Most of countries worldwide (except some landlocked countries) have accessed FIRMS.

Similar to previous analysis, among the top viewed pages, there are the home page, the search page interfaces and several fact sheets. Among the fact sheets, the most consulted ones are:

- the tuna fact sheets which are the most visited both for the Marine Resource and Fishery domains;
- the higher level global or regional syntheses, sourced from the FAO regional review;
- several Fishery fact sheets, particularly the ones containing management information.

The recent trends confirm a growing interest in the Fishery module concurrently with the release of new fact sheets.

These figures bring to the following considerations:

- users are interested by an authoritative source of information on the state of resources;

- the positive trends for 2014, 2015 and 2016 give positive outlook for 2017 and the FIRMS Stocks and Fisheries map viewer is expected to further contribute;
- in spite of the observed growth of mobile and tablets vs. desktop, these figures are not aligned yet along the overall trend of mobile usages vs. desktop (about 50% or even more), this suggests the need of an improved compatibility of FIRMS website for mobile devices so as to be better ranked by Google.
- the preliminary assessment on key words suggests that more efforts should be allocated for the search engine optimization;
- it was also observed how FAO domain pages were often ranked higher than FIRMS. The possible migration of FIRMS under FAO.org should result in an increase of the overall web trends.
- although global /regional syntheses respond to users' interest the developed thematic pages did not grow as expected;
- the referral traffic is still confirmed as an important source of accessing FIRMS and the addition of specific links, not only the home page but also the fact sheets, from partners websites would bring additional traffic and consequently the visibility to partners' reports;
- the high referral traffic is also due to the web site cross-referencing, e.g. the addition of relevant FIRMS fact sheets (i.e. country related ones) to the FACP fact sheets contribute to raise awareness of FIRMS as authoritative source of information; FishBase is also contributing as important source of referral traffic);
- generally a need to proceed with a strong communication plan agreed upon and supported by all FIRMS partners.

#### **4. FIRMS Technical Working Group (TWG) meetings**

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 29 February and 1 March 2016 in FAO HQ Rome, Italy. The meeting document FIRMS FSC10/2017/3 "Summary of TWG5 recommendations" summarizes the themes and the main recommendations which were presented and discussed during the four sessions.

Meeting Reports for the four meetings are available in documents Inf.7a, Inf.7b, Inf.7c and Inf.7d.

#### **5. Training or skills development**

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. Recent focussed assistance includes liaising with CCAMLR, CECAF, GFCM, IATTC, ICCAT, IOTC, NAFO, NASCO and NEAFC for the submission of new reports and/or due to change of the focal point.

South West Indian Ocean (SWIO) region: a Strategic Data policy workshop was organized in Rome, Italy on the 21<sup>st</sup> and 22<sup>nd</sup> of September 2015, supported by the SmartFish project. Originally targeting the South West Indian Ocean (SWIO) Region, it expanded to a global scope with the SWIO Region as an example. This workshop was organized following the development<sup>6</sup> of the Chimaera portal<sup>7</sup> which provides seamless access to information and data residing in existing international and regional systems (FIRMS, WIOFish and StatBase). Upon this result and for bringing

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<sup>6</sup> An output of Result 1 of SmartFish project, component 1M3 aiming to "*improve knowledge and information in support to fisheries management processes*"

<sup>7</sup> <http://chimaera.d4science.org> ; Chimaera is exploiting the iMarine web semantics components and hosting solutions.

this system in a production stage, the need for agreeing on strategic data policies was perceived which this workshop addressed.

A dedicated WECAFC–FIRMS Data Workshop was run on Marine Resources and Fisheries Inventories (Barbados, Christchurch, 19 - 21 January 2016) with focus on CRFM countries and three priority species of the region: Queen Conch, Spiny lobster and Flying fish.

The list of past training sessions is available in FIRMS website – members’ area at <http://firms.fao.org/firms/training/en> (login required).

## **6. Promotional and outreach activities**

The promotional and outreach effort proceeded according to FSC8/FSC9 recommendations to work towards increasing the number of partners and promoting FIRMS through partner’s websites.

In this context, the following activities were carried out across eight meetings:

- FIRMS Secretary attended the ninth RECOFI Commission meeting, Kuwait, May 2017;
- FIRMS Secretariat presented FIRMS and the new developments at the following Scientific Committee meetings: CECAF (SC7, Tenerife October 2015), GFCM (SAC18, Cyprus March 2016), SWIOFC (SC7, Comoros December 2016), and RECOFI (WGFM10, Qatar December 2016);
- FIRMS chairperson presented FIRMS at the WECAFC sixteenth Commission meeting (Guadeloupe, June 2016);
- Following the inclusion of FIRMS in the formulation of the “Strengthening routine fisheries data collection in West Africa” project (TCP/RAF/FCWC) in support to FCWC, activities are in progress for a possible capacity building workshop;
- The WECAFC-FIRMS collaboration is on-going after the WECAFC-FIRMS Data workshop, within a second EU project and the CLME+ project.
- The FIRMS pilot work initiated in the context of BOBLME will be most likely continued in the next BOBLME project phase (starting in 2018)
- FIRMS is contributing in the EU H2020 BlueBRIDGE project with the aim to enable, as backbone of a Global Record of stocks and fishery identifiers, the systematic generation of global/regional summary indicators on the status of fishery resources, and to facilitate traceability and certification of fishery products. FIRMS is earmarked as an important capacity building activity aiming at developing inventories and status and trends reporting for three major regional fishery management plans, and at contributing to a Decision Support System on the state of environment and ecosystems in the Western Caribbean Region.
- Letters of invitations were sent to “dormant” partners and to new potential partners. Specifically: BCC, NEAFC, SEAFDEC, SPRFMO.

The following table summarizes training-promotional activities conducted during the intersessional period.

**Table 4:** Promotional and direct outreach interventions of FIRMS Secretariat

Organization / place of meeting	Description	Date
Data policy workshop, Rome	To address data sharing policy issues with focus on SWIO region, including towards an agreement for the long term maintenance of the Chimaera portal	September 2015
CECAF SC7, Tenerife	To present the status of information available in FIRMS concerning the CECAF region, to re-engage CECAF experts, and to present the current FIRMS developments (Stock & Fisheries map viewer, state and trend traffic light approach, minimum data requirement for streamlined workflow, global record of stocks and fisheries).	October 2015
WECAFC-FIRMS Data Workshop, Barbados	FIRMS Secretariat organized an ad hoc workshop to validate existing inventories in WECAFC context and formalizing a workflow including also CRFM and OSPESCA contribution.	January 2016
GFCM SAC18, Cyprus	To present the status of information available in FIRMS concerning the GFCM region, and to re-engage GFCM and its experts in actively contributing to FIRMS timely reports on state of Marine resources and fisheries.	March 2016
WECAFC 16 <sup>th</sup> Commission, Guadeloupe	FIRMS chair presented the progress achieved by the WECAFC-FIRMS project. The Commission endorsed the establishment of the WECAFC Statistics and data Working Group.	June 2016
SWIOFC SC7, Comoros	To present the status of information available in FIRMS concerning the SWIO region, and to re-engage SWIOFC and its experts in actively contributing to FIRMS timely reports on state of marine resources and fisheries.	December 2016
RECOFI WGFM10, Qatar	To present the status of information available in FIRMS concerning the RECOFI region, and to develop FIRMS Marine Resources for the RECOFI region focusing on the Spanish mackerel and shrimps as priority species.	December 2016
RECOFI commission meeting, Kuwait	to support the Statistics and data agenda including support to the RECOFI Catch and Effort minimum requirements regional database, and RECOFI in FIRMS	May 2017

## 7. Secretariat Resources in support to FIRMS

As in the previous report, the overall effort spent by the FIRMS Secretariat on various aspects of FIRMS activities has been monitored during the 28 months of the intersession (February 2015 – May 2017), and the corresponding cost is compiled by major activity in table 5. References to the previous intersessional periods are provided in table 6.

The total time (along the 28 months) invested amounts to 3.61 man-years for an equivalent of \$300 281. Normalised to a 1 year period, we obtain 1.54 man-year effort for an equivalent of \$128 692, a slightly higher level than the previous intersessional period 2014-2015 (1.48 man-years for an equivalent of \$ 116 667).

Comparison to the older intersessional periods tells that this slight increase remains in the lower average in general: 2.02 man-years for an equivalent of \$150 247 for 2011-2013, 1.81 man-years for an equivalent of \$121.000 for 2010-2011, 2 man-years for an equivalent of \$135.000 for 2009, 1.25 man-year for an equivalent of \$136.000 during years 2007-08, and 4.4 man-years for an equivalent of \$440,000 during year 2006 (launch of FIRMS).

The distribution of costs by main type of activities is as follows:

- 61% of the effort (against 75% in 2014-2015, 61% in 2011-2013, 67% in 2010-2011, 58% in 2009, 30% in 2007/8 and 44% in 2006) for information contributions (i.e. FAO inputs or assistance to Partners inputs including through training, and regular maintenance of FIRMS infrastructure);
- 33% of the effort (against 17% in 2013-2015, 33% in 2011-2013, 27% in 2010-2011, 34% in 2009, 44% in 2007/8 and 73% in 2006) was dedicated to software design and development: essentially development of the new FIRMS Stocks and Fisheries map viewer, maintenance of the software, improvement of the Word/Excel-to-XML converter tool for minimum data requirement, and few improvements and interface level and;
- 6% of the effort (against 8% in 2014-2015, 7% in 2011-2013, 6% in 2010-2011, 8% in 2009, 23% in 2007/8 and 13% in 2006) to management and marketing.

It should also be noted the in-kind contribution of NOAA with the part-time assignment of Ms. Nancie Cummings as FIRMS Chairperson and her very active contribution to the regional WECAFC-FIRMS project.

In addition:

- A budget of \$33 500 (\$14.000 normalised to a one year period) has been allocated by FAO's RP for the attendance of the secretariat and in support to participants at FSC10 meeting, and for the participation of the secretariat at the various FAO RFB statutory meetings (GFCM, CECAF, SWIOFC, RECOFI)
- EU provided extra-budgetary support through various projects for a total amount of \$ 70.000 (\$ 30.000 normalized to a one year period): EU/SmartFish supported participants travel at the Data sharing policy workshop (Rome, Sept. 2015); EU/WECAFC supported FIRMS secretariat and participants travel at WECAFC-FIRMS Data workshop (Barbados, Jan. 2016) and at GCFI meeting (Oct. 2016); EU/BlueBRIDGE supported participants travel at joint FIRMS-TWG5 BB-EAB1 (Rome, March 2016) and at BB-EAB2 (Rome, March 2017) in particular for the Global Record of Stocks and Fisheries (GRSF).

This "extra" support to FIRMS growth which amounts to \$ 103.500 (ie \$ 44.000 normalised to a one year period) confirms a growing effort for outreach and training during the recent years (\$ 41.000 for FSC8/9, \$ 20.000 for FSC7/8, \$31.000 for FSC6/7 intersession, \$40.000 for FSC5/6, normalised to a one year period).

This analysis shows 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.

**Table 5:** Effort in [man x days] spent on FIRMS by major activity during period 02/2015 – 05/2017 (28 months).

Application requirements and Software development (days)						Information contributions (days)			(days)	(days)
	Web site upgrade and technical support	Marine Resource module	Fishery module	Dynamic mapping tool – thematic pages – FIRMS data coverage	Word/Excel-To-XML	Training / Assistance to Partners (including inventories & meetings)	Direct Data update (FAO)	Routine maintenance website and Wiki	Management and marketing	Total
<b>M. Taconet</b>				2		10			40	52
<b>A. Gentile</b>	24	6	6		9	110	15	22		192
<b>G. Gorelli</b>	15				10	30	110	5		170
<b>S. Savore</b>						10	7			17
<b>T.Cantarelli</b>						9	50			59
<b>R. Vilela</b>						70	20	10		100
<b>M. Balestra</b>				60	15					75
<b>E. Blondel</b>				66				1		67
<b>T. Berger</b>		4	5							9
<b>K. Viparhi</b>	2									2
<b>N. Matovu</b>	10									10
<b>E. Van Ingen</b>	32									32
<b>B. Monjaras</b>									10	10
<b>TOTAL effort</b>	83	10	11	128	34	239	202	38	50	795
<b>% time/activity</b>	10	1	1	16	4	30	25	5	6	100
<b>Total HR \$US</b>	\$42,561	\$6,033	\$6,682	\$32,943	\$11,432	\$98,253	\$45,491	\$15,901	\$40,984	\$300,281

The overall (human resources and travels) yearly budget level of \$ 173.142 during the FSC9/10 intersessional period (\$158.000 during the FSC8/9 intersessional period, \$170.000 during the FSC7/8, \$156.000 during FSC6/7, \$175.000 during FSC5/6) confirms a cruise level budget reported since FSC5, while positioning FSC9/10 in the higher average levels. Under the new Programmatic framework implemented at FAO, the amount of FAO Regular Programme resources which has been allocated to maintain FIRMS was consolidated which confirms an internal recognition that FIRMS is among the “global goods”. The Secretariat is continuing its effort to mobilize extra-budgetary funding when regional interest is expressed for FIRMS. In the forthcoming period, the WECAFC-FIRMS activities involving FIRMS will continue in particular with the starting GEF/CLME+ project; extra-budgetary funded projects are secured in 2017 in support to the CECAF region (FCWC), and FIRMS activities are planned under the Bay of Bengal LME phase II project (start in 2018). The EU/BlueBRIDGE support to Global Record of Stocks and Fisheries (GRSF) will continue until early 2018 as part of

the BlueBRIDGE formulated project, and follow-up projects will be sought by the Secretariat. The inputs of RFB partners to EBF-raising or opportunities are welcomed.

**Table 6:** Historical trends of total effort and costs.

	Software development	Training/Assistance – Data update	Management and Maintenance	
<b>TOTAL effort February 2015 – May 2017 (28 months)</b>	266 d.	441d.	88 d.	795 d.
<b>TOTAL \$US</b>				\$300,281
<b>TOTAL effort February 2013 - January 2015 (24 months)</b>	112 d.	463 d.	69 d.	644 d.
<b>TOTAL \$US</b>				\$233,336
<b>TOTAL effort December 2011- January 2013 (14 months)</b>	169 d.	291 d.	58 d.	533 d.
<b>TOTAL \$US</b>				\$175,288
<b>TOTAL effort 2010-11 (22 months)</b>	179 d.	400 d.	70 d.	649 d.
<b>TOTAL \$US 2010-11</b>				\$211,118
<b>TOTAL effort 2009 (21 months)</b>	231 d.	375 d.	73 d.	646 d.
<b>TOTAL \$US 2009</b>				\$205,000
<b>TOTAL effort 2007/8</b>	159 d.	108 d.	83 d.	360 d.
<b>TOTAL \$US 2007/8</b>				\$180,000
<b>TOTAL effort 2006</b>	668 d.	182 d.	98 d.	948 d.
<b>TOTAL \$US 2006</b>				\$440,000

## 8. Difficulties encountered during the inter-sessional period

Financial resources: Within “cruise speed inputs” limits reported in the above Resources chapter, there were no real budgetary constraints on both Regular Programme allotments and Project funding support. Normal maintenance of the FIRMS programme has remained a priority area for the Fisheries and Aquaculture Department and has become part of the FAO Strategic Objective 2 “Sustainable use of natural resources”.

During the forthcoming intersession, the Regular Programme will continue to support content updates and dedicate some resources to support the renewal of the FIRMS user interface which already started with the development and release of the new Stocks and Fisheries map viewer. The EBF resources in support to regional uptake of FIRMS in BOBLME, WECAFC, and FCWC are promising in terms of FIRMS coverage expansion, but additional EBF resources and/or partnerships will be necessary to support GRSF and SDGs.

Human resources: There has been a substantial turn-over within the team members which has weakened during the first part of the intersessional period the Secretariat capacity. In particular Elena Balestri a 10 years long colleague (information manager) left the team as well as Erik Van Ingen (software developer). This was however compensated by a strong resurging capacity during the second part of this intersession after the appointment of Giulia Gorelli, and Stefania Savoré (both information managers) which allowed to strengthen a timelier assistance to partners.

Software maintenance/development: Other difficulties experienced by the Secretariat concern the software maintenance and development in FAO, where technical Departments such as FI are confronted to a new IT policy which is centralizing developments and support capacities. Likewise, the new FAO web-publishing policy required lengthy negotiations before the FIRMS Maps viewer (a new web product) could be released. Both policy context have entailed substantial delays for the finalization of the FIRMS maps viewer.

Scheduling: Although still observed for certain partners, the difficulties of scheduling nature reported by the Secretariat at FSC9 were less acute, and a good rate of updates to inventories was obtained. This is also a good result of the minimum data requirement approach which made possible a faster workflow and a lighter workload while focusing on key information of the marine resource and fishery modules. The semi-automatic procedure put in place with ICES is also well promising in case of massive updates of information when supported by webservices.

Nevertheless many of the activities planned at FSC9 can be reported as being implemented or in progress to FSC10 (see Annex 1).

## **9. Potential activities during the coming intersessional period.**

Besides the normal assistance to Partners and the maintenance of FIRMS website, this section presents Secretariat's view point on the developments which should logically follow from the progress made during this intersession. These developments should be prioritized and the accomplishment of some of them will depend upon the capacity to mobilize additional project resources.

These developments can be articulated around four main areas:

- Expanding FIRMS coverage and timeliness of reporting;
- Renewal of FIRMS website;
- Updating the data model and FIRMS standards;
- Publish the FIRMS inventories which are still in Excel format;
- Contribute to the further development and maintenance of the Global Record of Stocks and Fisheries (GRSF);
- Support SDG 14.4.1 requirements;
- Promotion of FIRMS.

For some of these activities, FSC10 might decide to convoke a Technical Working Group (e.g. through e-Meetings). FSC10 will establish priority areas of development.

### **9.1 Expanding FIRMS coverage and timeliness of reporting**

#### Expanding FIRMS geographic data coverage thanks to new Partners:

In those areas where the FIRMS coverage is weak or absent, RFBs are invited to interact with the FIRMS Secretariat in order to expand the FIRMS data coverage, through development and validation of inventories and generation of reports (fact sheets) on status and trends. Such activity can build on the capacity building experience matured through the work done with CECAF, RECOFI, NASCO, WECAFC, SWIOFC (i.e. linkage with WioFish fisheries inventory through the Chimaera portal)

The South Pacific Ocean represents a necessary area for expansion of data coverage.

Specific effort should be made to convince the following RFBs to join FIRMS:

Tuna bodies: Western and Central Pacific Fisheries Commission (WCPFC) [and The Pacific Community (SPC)] is the only Tuna body not yet member of FIRMS. Tuna bodies member of FIRMS should invite WCPFC to join.

Deep Sea bodies: South Pacific Regional Fisheries Management Organisation (SPRFMO), South Indian Ocean Fisheries Agreement (SIOFA) and North Pacific Fisheries Commission (NPFC) should be invited to join.

Other bodies: the Pacific Salmon Commission (PSC) expressed an interest to join during the last RSN 2016 meeting; the Permanent Commission for the South Pacific (CPPS) had formerly expressed their interest.

GRSF developments and related partnerships will also contribute to expanding the data coverage.

#### Improving reporting timeliness:

Since FSC9, some partners (CCAMLR, GFCM, ICES and IOTC) have expressed the need of streamlining the process of data contribution for reducing the workload, and improving the reporting timeliness. Progress is being made both by the Secretariat and these partners to explore new technologies and adopt new strategies (i.e. webservices, minimum data requirement approach). So far some of the adopted solutions are well promising and the Secretariat will further adapt the capacities of FIRMS to enable such streamlining.

Other areas of development will depend upon the intentions of the existing partners and the newly appointed observer organizations.

## **9.2 Renewal of the FIRMS user interface**

Following the significant achievement of FSC9/FSC10 of the FIRMS Stocks and Fisheries map viewer, objective for FSC11 would be an improvement of this new application and the release of the new FIRMS website.

So far FIRMS managed to consolidate a big amount of data organized in the two original stocks and fisheries modules in a stable and well-structured way and accessed through specific search interfaces.

The next step would be the renewal of the website as FSC8 and FSC9 stressed the need to respond to target audience expectations with improved user interfaces.

## **9.3 Towards the release of the Global Record of Stocks and Fisheries (GRSF)**

In about one year time (March 2018) the EU BlueBRIDGE project will conclude, and the GRSF will be released in its final project version. FIRMS representatives were involved in two TWG meetings and in various other occasions (e.g. FIRMS eTWG meetings) for discussing the detailed requirements of the GRSF. Standards were compiled for the fields of the GRSF record and for the assignment of global unique identifiers; logic were identified to assess the conditions for sharing and federating stocks and fisheries records among various sources, and to define the services which

the global record should provide. After the release of the GRSF, its maintenance and extension will be the new challenges for which FIRMS partners are invited to propose viable business models.

#### **9.4 Promotion of FIRMS**

Depending on the outcome of FSC10 discussions, different strategies will be adopted for FIRMS promotion.

Priorities agreed in the past sessions were the following:

- to seek participation of more RFBs;
- to adopt a communication plan shared by FIRMS Partners;
- to promote links to the FIRMS website from national agencies websites;
- to increase the dissemination of FIRMS fact sheets from Partners' website;
- to communicate broadly on FIRMS synoptic views on status and trends;
- to communicate on FIRMS progress at Partners' meetings;
- to report on FIRMS progress at COFI and to organize a side event for raising awareness of the ongoing activities.

FIRMS partners are expected to promote FIRMS in their regional context, good examples arise from WECAFC.

Promoting the role of FIRMS in SDG14.4.1 would also be a good opportunity for FIRMS visibility.

FIRMS could benefit from a strengthened communication capacity at FAO including through social media coverage.

**Annex 1 - Status of implementation of FSC9 recommendations – June 2017**

	Done
	In progress
	Not yet tackled

	Decisions	Status of implementation
<b>FIRMS membership (Agenda item 3) - Review of new prospective Partners (Agenda Item 3b)</b>	Send letters to inactive partners to encourage participation (FSC9/D3.1)	
	Open up the partnership to LME projects and organizations in order to broaden coverage (FSC9/D3.2)	
	Send letters to prospective partners to clarify their intentions (FSC9/D3.3)	
<b>Review of Annex 2 (Agenda item 4) - Proposed modifications by existing Partners (Agenda item 4b)</b>	The FIRMS Secretariat should examine how to enable linkages between the VME DataBase and FIRMS fact sheets. (FSC9/D5.1)	
	Further discussions concerning possible inclusion of VME governance within the scope of FIRMS will take place at the VME meeting 2–4 March 2015. (FSC9/D5.2)	
	The deep-seas RFMOs at FIRMS and participating in the VME meeting agreed to recommend that the planned inventory of deep-seas fisheries should be implemented, taking into account inclusion in FIRMS. (FSC9/D5.3)	

<p><b>REPORT OF E-TECHNICAL WORKING GROUP 4 (SUMMARY REPORT OF E-TWG 4, DOC. FIRMS FSC9/2015/3 AND RELATED INFO DOCUMENTS INF. 7.A, B, C, D) (AGENDA ITEM 7)</b></p>	<p>Displaying state and trend standard descriptors (TWG 4.1) – FSC9 agreed that a table showing the standard descriptors would be displayed, using both the contributor’s descriptions and FIRMS descriptions where available, and, where not, only the FIRMS descriptions. (approved as FSC9/D7.1)</p>	
	<p>During this meeting, it was agreed to move towards the “traffic light approach” where possible. NAFO will lead this work and it will be referred to an intersessional TWG (to be held in late June) for further elaboration. (approved as FSC9/D7.2)</p>	
	<p>Inventory template improvement (TWG 4.3) – indicator of data reliability: addition of a new free text field. This was agreed. (approved as FSC9/D7.3)</p>	
	<p>Fishery importance, viewpoint and description: addition of two new free-text fields. This was agreed. (approved as FSC9/D7.4)</p>	
	<p>For reference year, the definition agreed is: “The last year considered in the stock assessment and/or fishery status.” (approved as FSC9/D7.5)</p>	
	<p>For reporting year, the definition agreed is: “The publication year of the source of the</p>	

	information.” (approved as FSC9/D7.6)	
<b>FIRMS Information Management Policy (IMP)</b>	The proposed modifications to IMP (version FSC8) can be applied and the new version published. (FSC9/D8.1)	
<b>REVIEW OF STRATEGIC ASPECTS – ENABLING MORE TIMELY INFORMATION, BROADENING GEOGRAPHIC/THEMATIC COVERAGE; TARGET AUDIENCE/COMMUNICATION AND PARTNERSHIPS (AGENDA ITEM 9)</b>	The chairperson concluded that the FSC9 supported the project idea and that the proposal for a face-to-face TWG would be made once and if the project funding were confirmed. (FSC9/D9.1)	
	FSC9 reiterated the conclusions of FSC8 regarding guidance on proper credit and maintenance of the integrity of FIRMS reports. (FSC9/D9.2)	
	FSC9 asked the FIRMS Secretariat to send letters, where applicable and affordable in terms of resources, for membership of LME institutions or collaboration with LME projects (FSC9/D9.3)	
	[Direction of FIRMS website revision (agenda item 9c)] The FSC9 approved the directions and the above schedules (FSC9/D9.4).	
	[A role for FIRMS in the iMarine initiative (agenda item 9d) (FIRMS FSC9/2015/4b)] The FIRMS Secretariat will ensure that FAO, through its position on the iMarine advisory board, will represent the interest of FIRMS and its partners, and will	

	communicate relevant information and strategic decisions back and forth. (FSC9/D9.5).	
<b>ANY OTHER BUSINESS (AGENDA ITEM 12)</b>	The Steering Committee felt that a strong statement to the FAO was warranted. The following was agreed: Recognizing FIRMS as a partnership between FAO and various Regional Fishery Bodies, it was felt that using a subdomain web name <a href="http://firms.fao.org">http://firms.fao.org</a> was the most appropriate address to use for FIRMS. (Refer to Article 3 of the FIRMS Partnership Arrangement). Future discussion on this could take place if and when needed. (FSC9/D10.1)	
	Executive summary: Noting that a full report can be a daunting task for readers, it was agreed that an executive summary of the full report highlighting the tone of the meeting and the main decisions could be included both as a part of the report and pasted in the body of the e-mail notification. (FSC9/D10.2)	

**Annex 2: Web trends statistics for FIRMS over the period 2007-2016**

Meeting document FIRMS FSC10/2017/Inf.8, accessible at  
[http://www.fao.org/fi/static-media/MeetingDocuments/FIRMS/FIRMS\\_FSC10/inf8e.pdf](http://www.fao.org/fi/static-media/MeetingDocuments/FIRMS/FIRMS_FSC10/inf8e.pdf)