



**FIRMS Steering Committee Meeting
Eighth Session**

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**REVIEW OF THE FIRMS ACTIVITIES DURING THE INTERSESSIONAL
PERIOD (December 2011 – January 2013)**

Secretariat Report on Progress and Issues

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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

- ICES: as a consequence of the change of the structure of the ICES Advice report, new template and mapping pattern were developed. An *ad hoc* training course was held in Rome (16-18 October 2012). A massive update of the reference observations followed and the production of new fact sheets is in progress utilizing the newly configured Word-to-XML converter tool. Furthermore, new stocks were identified and correspondingly new inventory records and related reference observations are going to be created and loaded in the FIRMS database.
- SEAFO: a revision of the marine resources inventory is in progress both for an update of data content and in respect of its connection with the newly coming fisheries inventory.

FAO – Article 6 RFBs:

- CECAF: A revision of the section “Demersal resources – Southern area of Eastern Central Atlantic “ is in progress in order to better reflect the structure of the latest published reports of the Assessment Working Group.
- SWIOFC: 117 Reference observation and related fact sheets were published utilizing the newly developed Excel-to-XML converter tool. These new fact sheets incorporate the new section on Assessment included in the Excel template following the TWG3 discussions.

FAO – Article 14 RFBs (full FIRMS partners):

- GFCM: 14 new fact sheets have been produced using the Word-to-XML converter tool and published. Another set of 13 fact sheets is being processed by FSC8
- IOTC: a revision of the structure of the inventory is in progress including the definition of mapping rules between IOTC state and trend indicators and the FIRMS standard ones.
- RECOFI: upon activities of the RECOFI WGFM6 (November 2012), Qatar and Oman delivered a national contribution to the RECOFI Regional marine resources inventory.

Further details of FIRMS partners' activities are available under the document section FIRMS FSC8/2013/2.

1.2 Fishery inventories

- NAFO: in addition to the high level Fishery Management system, 4 new Fishery Management units fact sheet were published.
- NEAFC: management information, as per NEAFC fact sheets already published, was utilized to further structure the data model for the management section. A new Word template including the new management measures' structure was provided accordingly. New data contribution is in progress.
- SEAFDEC: two fact sheets on sea cucumber fisheries were finalized. Other data contribution is in progress following the provision of an *ad hoc* Word template.

FAO and its Article 6 RFBs:

- CECAF: new fisheries fact sheets based on National fisheries inventories were produced and published for Togo, Guinea, and final clearance is pending for publishing Morocco and Spain.

- SWIOFC: a collaboration has been engaged with the Wiofish network, under the SmartFish project. Wiofish is a database containing an inventory of 269 fisheries in the south western Indian ocean. More information on the objectives of this collaboration are provided in document FIRMS FSC8/2013/4b

FAO RFBs article 14 (full FIRMS partners):

- RECOFI: upon the WGFM6 (November 2012) two national fisheries inventories were provided and validated for Bahrain and Iran and draft fact sheets were produced accordingly. As outcome of the meeting other three inventories (Oman, Saudi Arabia and Qatar are in progress). As per WGFM6 recommendation, fisheries fact sheets based on the inventories will be published as soon as most of countries will have delivered their contribution. Next RECOFI commission meeting will consider progress and eventually decide on its formal endorsement and publishing.

1.3 Indicators on FIRMS Marine Resource and Fishery fact sheets

The following tables and graphs show the total number of units inventoried (1244 marine resources and 645 fisheries) and the trends regarding the production of fact sheets per partners vs. reference years.

The FIRMS web site is currently disseminating fact sheets as follows: 632 current records (i.e. primary observations: 564 marine resources and 69 fisheries) and 386 historical records (i.e. secondary observations: 384 marine resources and 2 fisheries).

Table 1: FIRMS Marine Resources and Fisheries inventoried units¹, Reference Observations² (RO) and number of fact sheets³. (Updated 25 January 2013) – with yellow highlights the updates during the intersession.

Partner	Inventoried units	Reference Observations		Fact Sheets by Reference Year								
		Resources	Fisheries	≤ 2004	2005	2006	2007	2008	2009	2010	2011	2012
CCAMLR	3	3										
	18		7					7				
CCSBT	1	1								1		
FAO global	26	26		22					6			
	2		2						2			
FAO CECAF	217	217		87	7	17	8					
	281		101								39	
FAO RECOFI	103											
	60		26									

¹ 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.

² Reference Observations are “inventoried units” loaded in the FIRMS system against the “inventory records”, with all the stable/long lived descriptive metadata

³ 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.

FAO SWIOFC	141	141							117			
FAO WECAFC	264	239		44								
	233											
GFCM	106	61		21		5	10	7		14		
IATTC	23	23								3	8	
	15		1								1	
ICCAT	29	28		1	1	2	6	5	5	2		
ICES	286	195		145	2	52		175				83
IOTC	15	15		4	1		1	2				
NAFO	18	18		17	8	10	5	9	11	13	5	
	5		5						1	2	2	
NEAFC	11		11						8			
SEAFDEC	14		14	6		2						
SEAFO	12	12							12			
	6		1									1
Total	1889	979	168	347	19	88	30	205	162	35	55	84
		1147			1025							

Notes

- IATTC, ICCAT, CCSBT : as per these partners' policies, historical observations are hidden, only the most recent one is available in internet
- CECAF, RECOFI: Numbers of reference observations and related fact sheets are changing due to the current inventories' validation and loading process. Around 100 fishery fact sheets are presently at their final validation phase, one step away before being published.

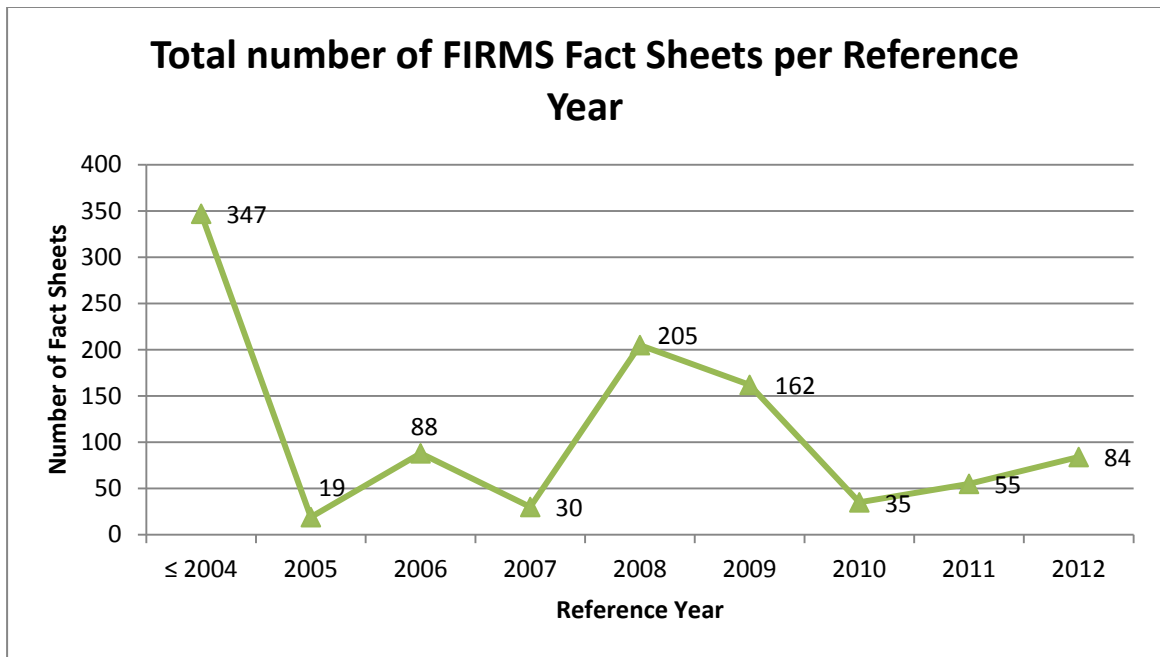


Figure 1: Total number of fact sheets per Reference Year

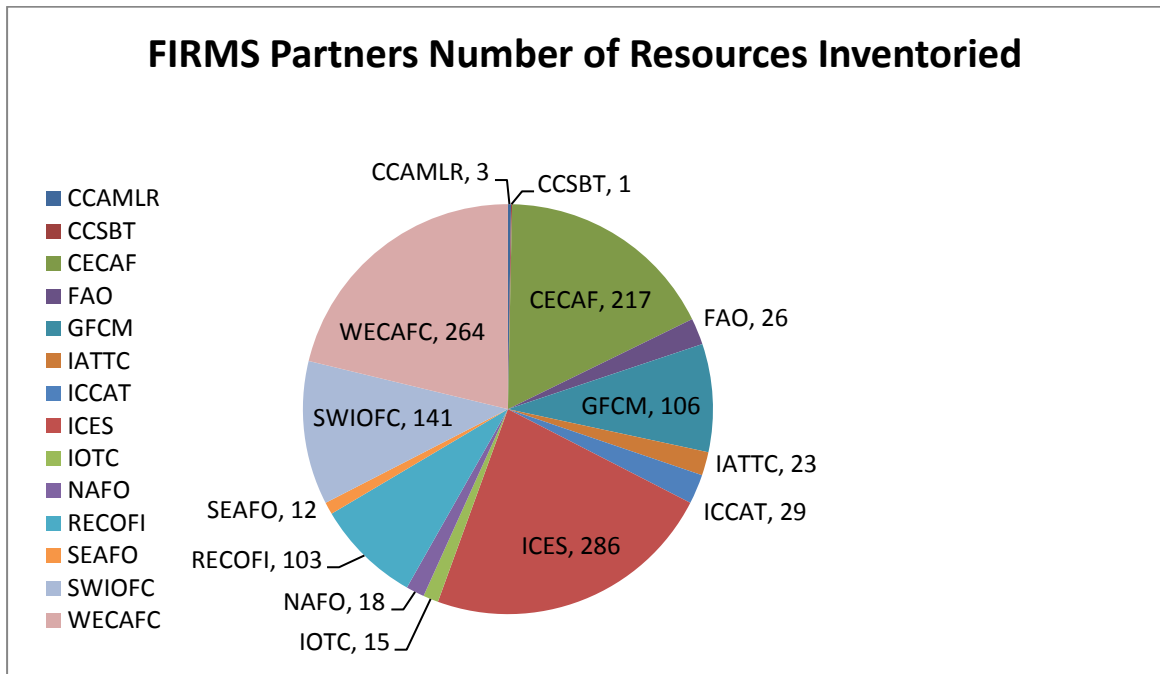


Figure 2: FIRMS Partners Number of Resources Inventoried

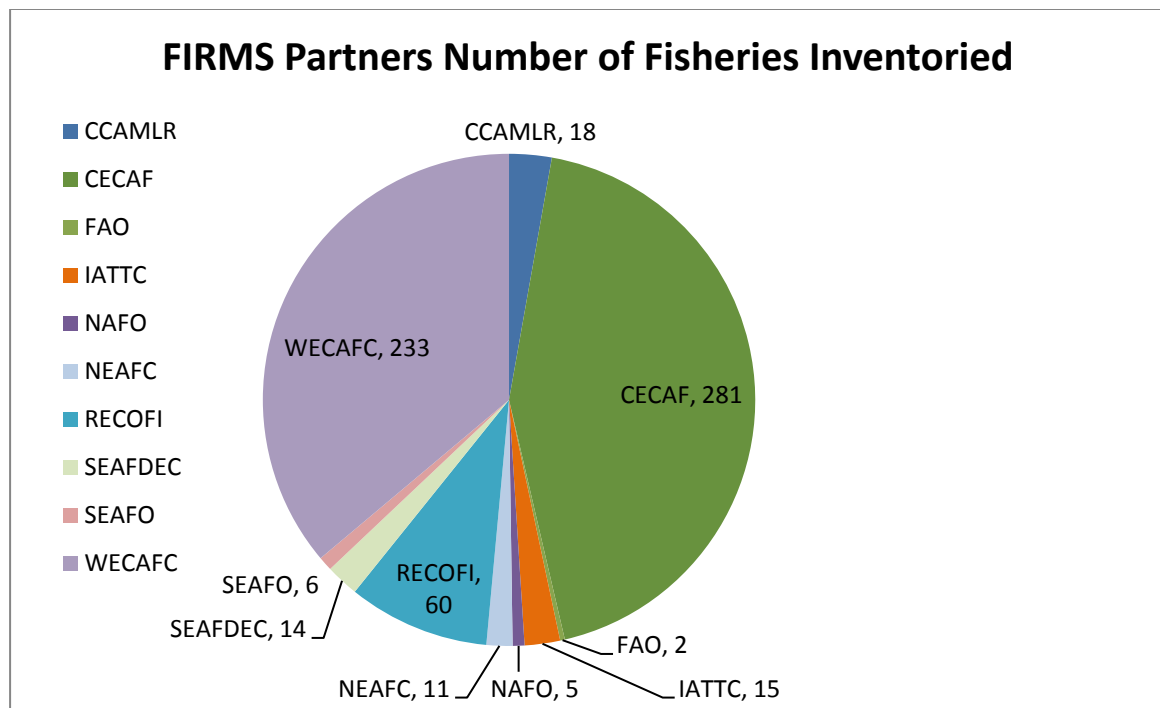


Figure 3: FIRMS Partners Number of Fisheries Inventoried

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;
 - Web services.

2.1 FIRMS fact sheets

Marine Resource

This module has been updated with the following improvements:

- Addition of the box “Monitoring period” for reflecting the dynamicity of the marine resources’ reporting level. The box indicates if the actual resource is still monitored or not and it provides access to the ancestor/descendant resources;
- Addition of “Empirical assessment” within the Assessment section and display the “Level of uncertainty”. The above improvements are activated and displayed according data availability.

Fishery

The Fishery module is now a stable application and efforts are more oriented in expanding the data coverage.

Nevertheless, this module has been updated with the following improvements:

- Following the endorsement by FSC7 of the management measure section driven by the NEAFC case, the data model (FiMES schema) and related layout (fact sheet display and behaviour) were implemented;
- The box “Fishery life cycle”, reflecting the dynamicity of fisheries evolution along time, was added. The box indicates if the actual fishery is still operative or not and it provides access to the ancestor/descendant fisheries;
- Fishery referencing application based on the related fishery concept (both fishing activities and management units) was developed and the layout adapted accordingly.
- Other improvements include:
 - link to FAO Fisheries and Aquaculture Country Profiles and FAOLex records from vessel flag state and management methods sections respectively;
 - general layout for fishery fact sheets;
 - full support of French language (except for FIRMS standard title for which naming convention is pending);
 - addition of “Related observation” link for accessing fishery secondary observations.

2.2 FIRMS web site pages

In the view of improving the audience of the FIRMS website, the home page and the thematic pages were further enriched in close consultation with Partners, during the TWGs e-meetings:

A global map giving access to marine resources and fisheries fact sheets by FAO major fishing area is now available in the home page;

Contents and queries of the thematic pages (“FIRMS on Tuna and Tuna fisheries”, “FIRMS on deep sea (high seas) resources”) were discussed and revised where necessary. More details are available in the TWGs e-meetings reports (FIRMS FSC8/2013/Inf.7a, FIRMS FSC8/2013/Inf.7b).

2.3 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 CMS was slightly improved in terms of performance due to the installation of the new FIGIS servers;
- The search index mechanism was improved following the upgrade of the “Struts” application;
- The Excel-to-XML converter tool was developed and thoroughly tested with the processing/uploading of the newly validated fishery inventories, and it is now fully available and operational for generating massively reference observations and fact sheets;
- A further facilitation was added to the converters for parsing the generated XML files vs. the FiMES schema. This new functionality allows to detect invalid conversions before proceeding with the upload leading to a considerable time saving;

- New configuration facilities were added to enhance the level of customization for the templates.

- **Dynamic mapping component**

Examples of a mapping interface for visualizing the elements of the table of the High Seas Deep Seas thematic page were made available and discussed during the TWG3.2 e-meeting. A prototype showing the application behaviour is in progress and it is supposed to be presented during the FSC8. Details available at:

http://km.fao.org/FIGISwiki/index.php/FIRMS_Deep_Seas_High_Seas_thematic_Map_Interface#User_workflow_-_mockups .

- **FIRMS data coverage maps**

Revised versions of the qualitative data coverage maps were done to reflect the presence of new observers and new data contributions by existing partners.

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 most decisions from FSC7 have been implemented regarding the website (see Annex 1).

3.1 Database content

During the intersessional period, several 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 564 Marine Resources through 948 published fact sheets (564 primary and 384 secondary observations).

Concerning the Fishery module, the data coverage is regularly increasing and related fact sheets are being produced and disseminated.

FIRMS is presently disseminating information on fisheries through 69 published fact sheets.

It should be noted that some partners' policies lead them to unpublish 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 (at FIRMS public site level) the loss of any information related to those marine resources or fisheries.

3.2 Website Shell

In addition of what was achieved by FIRMS FSC7 (Thematic pages; Improved layout for FIRMS web site pages; Improved Data coverage pages, etc.), the FIRMS website shell now offers:

- Updated thematic pages;
- Improved layout for FIRMS homepage with the addition of an active map allowing users to retrieve marine resources and fisheries by FAO major fishing areas.

3.3 Marine Resource and Fishery dissemination modules

In addition of what was obtained by FIRMS FSC7, further improvements have been achieved on:

- Marine Resource and Fishery fact sheets layout concerning the new updated data structure.

3.4 Mapping module

In addition of what was achieved by FIRMS FSC7, minor improvements have been added on:

- Overall map features and facilities;
- New maps prototypes for “Deep seas (high seas) resources” thematic page.

Some major improvements on the FIRMS dynamic mapping capacities await a fully tested web-based GIS intersection engine. This complex work is in progress and should be released soon in production. This enhanced mapping capacity will also benefit from the developments on the VME-database. The completion of work on these dependencies should allow to progress in 2013 on these FIRMS mapping products.

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.

3.6 Web trends statistics

The detailed and illustrated analysis of web trends statistics during years 2007-2012 is available in document FIRMS FSC8/2010/Inf.8⁴. 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 2012.

The analysis of FIRMS Web trends shows that the overall number of visits and pages increased along time. The slight decrease, around 7%, which was recorded in 2012 is in fact due to a technical incident at FIGIS level which occurred during the second part of 2012 causing a drop in that part of the web traffic originated by search engines. A deeper analysis showed that without the above mentioned incident, the 2012 trend would have continued on the historical growth of about 15 to 20% per year.

⁴ Accessible on FIRMS FSC8 meeting page at ftp://ftp.fao.org/FI/DOCUMENT/FIGIS_FIRMS/2013/inf8e.pdf

In addition in 2012, the pages/visit mean value shows an increase. The bounce rate (ie. the percentage of single-page visits) is higher for the home page and other gateway pages (i.e. Concepts) while it is lower significantly for search interfaces and thematic pages.

Accessibility and traffic sources show that 41% of visitors access FIRMS through search engines (mostly Google) while about 39% reach FIRMS through referral sites and the remaining 20% of visits is due to direct traffic. Data from previous web trend analysis show that most of the visits were due to direct traffic, and the changing pattern in the kind of traffic can be addressed to various factors including the addition of FIRMS links in partner's and non-FIRMS' partners websites, the growing number of fact sheets and some promotional activities (i.e. e-Bulletins).

The following results are based on cumulated webtrends across the whole 2007-2012 period. These coarse scale results can be interpreted only as global and smoothed over a 6 years period.

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

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, thematic pages.

A comparative analysis with the FI website and three of its most popular modules was conducted along the year 2012. The FIRMS fact sheets compare reasonably well with selected FI domains: FIRMS Marine Resource and Fishery fact sheets correspond to 15% of Aquatic Species fact sheets (a very popular source of information), and about 13% of National Aquaculture Sector Overview (NASO) and 8% of Fishery and Aquaculture Country Profile (FACP) (most consulted domains on the FI website).

The recent trends also show a growing interest in the recently released products, notably the fisheries module and the thematic pages.

These figures represent:

- a confirmation that users are interested by an authoritative source of information on the state of resources, but that a significant proportion of these users are not immediately satisfied; various hypotheses can be put forward, including outdated high levels pages, insufficient global synopses, lack of friendliness or appeal of the home page, incomplete coverage, etc.) ; the need to reengineer the FIRMS website tailored to its target audience already identified by FSC6.
- the need of promoting at a higher level/frequently updated global /regional syntheses, regional synoptic products to respond to users interest; here Regional thematic pages are expected to raise usage.
- The positive impact of the (rather delayed) linking to FIRMS information from a greater number of referential websites, which did bring additional traffic;
- the need of increasing the cross-referencing, e.g. the addition of relevant FIRMS fact sheets (i.e. country related ones) to the very popular FACP's fact sheets. It would raise awareness of FIRMS as authoritative source of information (planned with the forthcoming release of the upgraded FACP module); likewise the addition of relevant FIRMS fact sheets to FI FishFinder's aquatic species fact sheets;
- generally a need to proceed with a strong communication plan agreed upon and supported by all FIRMS partners.

4. 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.

FIRMS Secretariat has delivered three days training to ICES staff at FAO HQs (October 2012) on the utilization of the Word-to-XML converter tool applied on the new template for the ICES Advice 2012. In that occasion the ICES marine resources inventory was screened, revised and integrated with new stocks.

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

5. Promotional and outreach activities

The promotional and outreach effort proceeded according to FSC7 recommendation to work towards increasing the number of partners and promoting FIRMS through partner's websites.

As requested by FSC7, the FIRMS Wiki page "FIRMS communication strategy" was deeply developed for FSC8's discussion, and includes information on the latest promotional actions, while the page "How to exploit FIRMS information products" was regularly utilized for promotional purposes. Discussion on this topic is foreseen during next FSC8.

- NAFO participated to the "Science & Sustainability Forum" organized by Oceans Trust;
- SPC reported to the FIRMS Secretariat its FSC7 follow-up outreach activities with WCPFC, inviting WCPFC to become a partner. WCPFC Secretariat did acknowledge this exchange with SPC and promised further exchange with the FIRMS Secretariat on the question.
- Mr. Taconet was invited to be one of 12 members serving in the Scientific Advisory Group of FisheriesWiki;
- FIRMS participates in the SmartFISH project and collaborates with other fisheries data and information networks of the South West Indian Ocean (WIOFish and Statbase) towards the development of an harmonized regional information system.
- The use of FIRMS/WECAFC information and its potential offering was promoted in the context of the Caribbean Large Marine Ecosystem Project, upon request to FAO of its Information Management System in support of the State of environment and ecosystems in the Western Caribbean Region.
- The FIRMS Secretariat has contacted the BOBLME project and invited to develop some inventory products. The response was positive but no actual follow-up could be yet granted due to lack of resources on the Secretariat side.
- Promotional material (FIRMS brochures and poster) were distributed in occasion of the the14th International Frozen Seafood Products Exhibition - CONXEMAR 2012 where the Globefish participation served also to promote some FAO - fisheries related activities.

Summaries of the above interventions are available at http://km.fao.org/FIGISwiki/index.php/FIRMS_communication_strategy#Outreach

New memberships:

- Following a letter of invitation sent in June 2011 by FI's ADG on behalf of the FIRMS Partnership, and a reminder sent by the FIRMS Secretary in November 2012, the

Secretariat of NAMMCO and NASCO confirmed their Observer status and willingness to review the accession to a possible membership at their next Commission meeting, and the Benguela Current Commission (BCC) applied to join the FIRMS partnership as Observer. SPRFMO acknowledged the invitation regretting not to be able to participate because of conflicting meetings (SPRFMO is holding its first Commission meeting at the end of January and will be making decisions about the operation of its secretariat then).

- The FIRMS Secretary attended RECOFI's 6th WGFM in Doha (November 2012) in order to assist RECOFI towards a possible decision from its Commission (May 2013) to become a FIRMS fully fledged partner.

Concerning the advertisement of FIRMS, and following the recommendation of the FSC6 and previous meetings, all members should draw links from their websites to FIRMS. In addition they should promote FIRMS within their internal mechanisms, including by inviting their member countries to draw links from their national websites.

Ten of thirteen partners did draw links in their websites with different level of visibility. Among the missing ones, IOTC promised to include links in its new website currently under reengineering, and NEAFC confirmed that its Commission approved the maintenance of NEAFC fact sheets in FIRMS as core NEAFC communication products.

In order to diversify FIRMS website audience and to promote FIRMS contents, the production of information corners focussing on thematic or geographic information was further enhanced according to partners' feedback.

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

Table 5 : promotional and direct outreach interventions of FIRMS Secretariat

Organization / place of meeting	Description	Date
SWIOFC / SmartFish harmonization workshop - Mauritius	The harmonization workshop focussed on a common ontology for use by the three systems FIRMS, WIOFish and Statbase, This Included the promotion of FIRMS standard concepts	July 2013
RECOFI WGFM6 – Doha, Qatar	FIRMS Secretariat attended the Sixth Session of the Working Group on Fisheries Management of RECOFI. The WGFM6 confirmed a road map towards the expected decision of RECOFI to apply as a full member of FIRMS at its thirteen session in 2013.	November 2012

6. 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 14 months of the intersession (12/2011 - 01/2013), and the corresponding cost is compiled by major activity in table 6. References to the previous intersessional periods are provided in Table 7.

The total time invested amounts to 2.35 man-years for an equivalent of \$175 288. Normalised to a 1 year period, we obtain 2.02 man-year effort for an equivalent of \$150 247, a level slightly higher than the previous intersessional period (1.81 man-years for an equivalent of \$121.000).

Comparison to the older intersessional periods is also provided: 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:

- 33% of the effort (against 27% in 2010-2011, 34% in 2009, 44% in 2007/8 and 73% in 2006) was dedicated to software design and development: essentially the finalization of the Fishery module, the upgrade of the dynamic mapping tool and the Word-to-XML converter tool;
- 61% of the effort (against 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);
- 7% of the effort (against 6% in 2010-2011, 8% in 2009, 23% in 2007/8 and 13% in 2006) to management and marketing;

In addition, a budget of \$23.000 (\$20.000 normalised to a one year period) has been allocated to travel costs in support to the participation of CECAF and RECOFI focal points to FSC meetings, FIRMS participation at RECOFI WGFM, and FIRMS presence in the SmartFish project. Most of this budget was provided through a Japanese trust fund, some from the EU funded Smartfish project, and a minor part from the FAO RP. These figures are significantly lower than those of previous intersessions (\$31.000 for FSC6/7 intersession, \$40.000 for FSC5/6, normalised to a one year period) and this reflects the absence of regional workshop and correspondingly the lack of funding.

This analysis shows that, despite a difficult Regular Programme budgetary context during 2012, the amount of funding remained globally stable compared with the previous intersessional period. It should be noted that the huge work done on the Excel-to-XML converter tool has been only partially computed to FIRMS since other FIGIS fact sheet domains will benefit of such tool. Beyond the effort made for the above mentioned converter tool, the figures also confirm the continuing trend of effort increasingly directed towards support to information contributions, and less on software development.

	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)	Direct Data update (FAO)	Routine maintenance website and Wiki	Management and marketing	Total
M. Taconet			11	2		13			30	56
E. Balestri		3	4	1	4	104	150	5		271
A. Gentile		3	15	5	33	23	1	8		88
M. Balestra	8				28					36
F. Sibeni		2	3							5
E. Blondel				23				8		31
T. Jarrett	4									4
E. Van Ingen	20							2		22
P. Bravo									5	5
TOTAL effort	32	8	33	31	65	140	151	23	35	518
% time/activity	6	2	6	6	13	27	29	4	7	100
TOTAL \$US	\$17,839	\$3,053	\$20,302	\$8,113	\$23,693	\$40,101	\$23,734	\$7,354	\$31,100	\$175,288

The overall yearly budget level of \$170.000 during the FSC7/8 intersessional period (\$156.000 during FSC6/7, \$175.000 during FSC5/6) confirms a cruise level budget reported since FSC5. During the forthcoming biennium during which a new Programmatic framework will be implemented at FAO, the amount of FAO Regular Programme resources which will be allocated to maintain FIRMS is uncertain but a positive aspect is the internal recognition that FIRMS is among the “global goods”. Developments requiring additional efforts will have to be supported by extra-budgetary resources and the immediate prospects there are limited: the on-going Japanese trust fund project GCP/INT/069/JPN will provide this support until mid 2013 and there is no guarantee for a following phase; the SmartFish activities involving FIRMS will continue until 2015 and this will generally support FIRMS development in the South West Indian Region; FAO currently works on the formulation of a FP7 funded project “GEODIVA” which if selected will provide technology and capacity building support towards the New Horizons presented in agenda item 7b. Other project sources will have to be identified at FAO and at regional level where the inputs of RFB partners is welcomed.

Table 6: Effort in [man x days] spent on FIRMS by major activity during period 12/2011 – 01/2013 (14 months).

Table 7: Historical trends of total effort and costs.

	Software development	Training/Assistance – Data update	Management and Maintenance	
TOTAL effort December 2011-January 2013 (14 months)	169	291	58	533
TOTAL \$US				\$175,288
TOTAL effort 2010-11 (22 months)	179	400	70	649
TOTAL \$US 2010-11				\$211,118
TOTAL effort 2009 (21 months)	231 d.	375 d.	73 d.	646
TOTAL \$US 2009				\$205,000
TOTAL effort 2007/8	159 d.	108 d.	83 d.	360 d.
TOTAL \$US 2007/8				\$180,000
TOTAL effort 2006	668 d.	182 d.	98 d.	948 d.
TOTAL \$US 2006				\$440,000

7. Difficulties encountered during the inter-sessional period

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. More budgetary availability would however allow to strengthen the timely assistance to Partners, the implementation of a communication plan, and the reengineering of the FIRMS website. Also two regional workshops for the development and validation of inventories have been identified (SEAFDEC, and WECAFC) but the necessary funding could not yet be mobilized. Regarding the 2012-13 biennium, normal maintenance of the FIRMS programme remains a priority area within FI but further development efforts will be possible only under extra-budgetary funding (EBF) sources. The limited prospects regarding extra-budgetary Trust funds have been mentioned in the previous paragraph.

The difficulties and related delays were rather of technical and scheduling nature.

Technical: web servers on which FIRMS is relying upon, were migrated to a more performing hardware. The server migration caused a new configuration as well as a number of side effects

consuming a considerable amount of developers' time and also affecting the FIRMS Secretariat activity.

Scheduling: responses from few partners are occasionally quite delayed or absent both in occasion of updating the inventories or producing fact sheets.

Nevertheless most of the activities planned at FSC7 can be reported as being implemented to FSC8 (see Annex 1).

8. 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. It should be made clear that these developments should be prioritized and for many, will depend upon the capacity to mobilize additional project resources. These developments can be articulated around four main areas: enforcement of data collection and data validation framework, enhancements of the FIRMS modules (fact sheets, maps, thematic pages, etc.), provision of specific training/assistance to Partners, and last but not least, promotion of FIRMS.

For some of these activities, FSC8 might decide to convoke a Technical Working Group (e.g. through e-Meetings). FSC8 will establish priority areas of development.

8.1 Broadening of the FIRMS coverage

In those areas where the FIRMS coverage is weak, 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 will build on the experience matured through the recent work done with CECAF and RECOFI. Focus areas are the South Western Indian Ocean as part of the on-going collaboration with WioFish, and the Western Central Atlantic area where a WECAFC-FIRMS regional workshop has been agreed upon in principle. Other areas of development will depend upon the intentions of the existing partners and the newly appointed observer organizations.

8.2 Enhancements to the FIRMS modules

The Marine Resource and Fishery modules may need to be improved according to the issues addressed to the e-TWG concerning structure and content of the inventories, the data model and the layout. In particular, an amount of time will be allocated for Secretariat and developers work, if the issue of Reporting vs. Reference year utilization (e-TWG 3.2) will be endorsed by the FSC8.

With the expected growth of the number of fisheries, friendly ways to access Fishery records or their components (e.g. management information), including an intuitive browsing system able to handle the multi-faceted aspect of fisheries, would be necessary. This would build on the FLOD knowledge base developments supported by iMarine and tested as part of the SmartFish RIS project.

Other software developments should be mostly geared at enhancing FIRMS products in accordance with the priorities retained by FSC8 as part of the communication strategy and plan. As per the FIRMS Communication Strategy Wiki page, the efforts could support:

- re-engineering of the overall web site layout such to better match target users expectations, including with interactive mapping capacities, or specific information corners;
- Further developments of thematic pages, and/or regional pages;
- Mapping applications for:
 - dynamic generation of FIRMS data coverage;
 - a Fishery resources' and Fisheries map viewer: map representations may be further enhanced, in particular by adding the capacity to display multiple layers for marine resources/stocks, fishing activity areas, EEZs, RFBs' area of competence and species distribution in single maps within fact sheets and through an interactive maps viewer application; this could build from the capacities developed for the VME map viewer;
- graphical representations of synoptic views of Stocks' status and trends;
- more language versions: adding a language should be decided on a needs basis, just like French has to be added when working in CECAF area.

8.3 Training and assistance

- The SmartFish prototype will be presented in the context of a Regional SmartFish workshop.
- Depending on available funding, specific training/assistance to regional Partners aiming at validation of additional regional/national inventories: WECAFC and SEAFDEC are current candidates. This would require for each target region a regional workshop.
- More generally where exploratory actions are necessary, the Secretariat will assist Partners or Observers (e.g. BOBLME, BCC, SPC, WCPFC, NAMMCO, NASCO, DG MARE) with development of Case studies.
- Dedicated training could be arranged for those partners willing to adopt the Word/Excel-to-XML converter tools.
- Normal assistance to established Partners: the assistance will consist of the existing remote assistance prevailing during the publishing workflow, and the specific training sessions as requested by Partners.

8.4 Promotion of FIRMS:

Depending on the outcome of FSC8 discussions different strategies will be adopted for FIRMS promotion.

- to seek participation of more RFBs
- to adopt a communication plan shared by FIRMS Partners through the endorsement of:
 - key-messages
 - implementation steps (e.g. mailing lists, e-news, poster, improved home page, information corners, *etc.*)
- 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 next COFI and to organize a side event for raising awareness of the ongoing activities

Annex 1 - Status of implementation of FSC7 recommendations – January 2013

completed	on-going	not yet started
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FSC7 recommendations	Implementation status
Encourage WCPFC and other institutions to join the partnership or changing their status in order to expand the FIRMS coverage	<p>SPC, WCPFC still pending</p> <p>BCC decided to become observer</p> <p>NAMMCO is an Observer</p> <p>DG-MARE/Socio-eco unit replaced Eurostat for re presenting EU</p> <p>SPRFMO as Observer</p> <p>RECOFI will make decision on its membership at its 2013 Commission meeting</p> <p>NASCO will present membership in FIRMS at its Council 2013 meeting</p>
Partners with changes in the nature of their contributions are requested to provide draft revision to their Annex II	<p>Done for ICCAT, NAFO</p> <p>Done for FAO, including CECAF, SWIOFC, RECOFI</p> <p>SEAFDEC is pending</p>
Populating FIRMS with new data	Done for SWIOFC, done for CECAF, partially done for GFCM; partially done for FAO Review of the state of world marine fishery resources; coming soon: RECOFI fishing activities,
Creation of a new thematic page was proposed for the North Atlantic to express the science to management decision making process, among NAFO, NEAFC, ICES, DG MARE and ICCAT (with reference with Agenda Item 8c). NAFO will lead the discussion.	Design of North Atlantic thematic page is in progress (ongoing discussions lead by NAFO)
Update of existing thematic pages	<p>Enhanced accuracy of the search results implemented in the Tuna thematic page</p> <p>Ongoing discussion to better define depth ranges for "FIRMS on deep sea (high seas) resources"</p>
Removing "Demersal" in the title to avoid potential confusion with the definition. The high-sea fisheries for this page would include non-demersal species found in depths greater than 200 meters such as mackerel or deep sea squid.	Done, inclusion of other species is pending upon agreement on final definition of depth ranges.
Publication of data coverage maps should be done cautiously, with iterative steps	In progress
The resources-to-fisheries continuum: starting a virtual merging, of the two modules marine resources and fisheries with a joint search interface should be accessible from the home page for retrieving both Marine Resource and Fishery fact sheets.	<p>A unique search interface has been set-up from the home page in the form of a query map.</p> <p>Another facility (a full text search field) is still to be implemented. The virtual merging of the two modules has not been yet tackled. This is a significant work for which resources need to be identified.</p> <p>Some progress made as part of the SmartFish project</p> <p>More information on the continuum at : http://km.fao.org/FIGISwiki/index.php/FIRMS_Data_Models (login required)</p>
Inclusion of Monitoring cycles of Marine resources section in the Standards section of the IMP, as part of the Marine resources data dictionary	Done
Inclusion of Fishery life cycle of Fisheries section in the Standards section of the IMP, as part of the Fisheries data dictionary	Done
Revision of some comments received during the FSC7 (RECOFI feedback) on the use of some	Stored in Wiki, waiting for feedback http://km.fao.org/FIGISwiki/index.php/Talk:FIRMS_Inventory_Gu

terminology to be evaluated and if accepted their integration in the Guidelines section of the IMP.	Guidelines and Templates
Quality assurance related to information on resources/stocks Assessments: The TWG will be requested to develop a standard vocabulary for Trends as a result of Fisheries data, as well as for qualitative fishery resources assessment methods. Mr. Yimin Ye has agreed to lead this task in collaboration with ICCAT.	Work in progress in the TWG. No agreement yet on a standard
The Secretariat will propose an enhanced data structure alignment between the resource and fishery data modules to better cater for the continuum.	Not done
Investigating reference year identification mechanisms and proposing solutions. Production of alternative scenarios for displaying the reference year within the fact sheets. Provision of a disclaimer and/or definitions of reporting year and reference year.	Work in progress within the TWG, and an agenda item of FSC8. References http://km.fao.org/FIGISwiki/index.php/Talk:FIRMS_Data_Models (login required)
Removal of the year in the list of fact sheets generated by the search engine. It would remain visible in the actual fact sheet.	Not yet tackled, waiting for final decision on the issue on reference/reporting year.
Contributions by Partners for updating FIRMS web-based sections of the Global review. Consequently, the Secretariat will modify the Global review fact sheets by integrating live links to the more detailed RFBs' fact sheets	The fact sheets implemented based on the latest FAO 2011 publication "Review of the state of world marine fishery resources" include these dynamic links
Reporting on national fisheries and resources: The Secretariat will develop standard protocols addressing the involvement of Nations through RFBs, for review by the TWG Under the condition that additional funding can be mobilized, the Secretariat will consider the possibility of another training workshop in the RECOFI region, in close collaboration with the RECOFI Secretariat	Done, will be presented at FSC8 Funding not identified, workshop not really deemed necessary at this stage
Reporting on fisheries management: The Secretariat will coordinate among the concerned actors the development of a thematic page on the theme "science to management process in the North Atlantic". NAFO will the lead in a substantive discussion.	NAFO should make a proposal at FSC8
In the NEAFC's fact sheet where reference is made to ICES scientific advice, the terminology should be changed to "Assessment advice provided by ICES".	Done
In the fishery fact sheets on management a standard section "Long term plans" should be added in the Management fact sheets template.	Not yet tackled
FIRMS role regarding reporting on socio-economic status of fisheries: Upon DG MARE's confirmation of its intended contribution during 2012, two or three case studies regarding socio-economic data will be developed under the coordination of the Secretariat, with the participation of ICCAT, ICES, NEAFC and possibly CECAF.	Work in progress, two case studies were provided and an exchange is ongoing with DG-MARE
Practical steps towards NatFIRMS: NatFIRMS information could be accessed and disseminated through the FAO's FACP programme: links to countries with relevant resources and fisheries information would be listed. From the FIRMS website, an access to NatFIRMS information should be granted following an informational hierarchical process by which users are suggested to further link to NatFIRMS only as second search iteration, after getting a first chance to review FIRMS information	Not implemented yet. Test Fishery Fact sheets for the Pacific island states might be initiated

<p>FIRMS communication strategy:</p> <p>A communication strategy will be iteratively developed through the FIRMS Wiki, and FIRMS partners will be invited to contribute.</p> <p>The FIRMS home page should be made more dynamic and informative from the perspective of users expectations.</p> <p>Partners are encouraged to actively contribute to FIRMS outreach within their own constituency, and the Secretariat will assist this process by making available a toolbox of promotional material.</p>	<p>The FIRMS communication strategy wiki page has been deeply expanded for presentation at FSC8 and feedback from partners towards a communication plan.</p> <p>http://fm.fao.org/FIGISWIKI/index.php/FIRMS_communication_strategy (login required) and FIRMS FSC8.2013.4.</p> <p>Communication material not developed further</p> <p>Parallel reflexion takes place in SmartFish and might feed into FIRMS</p> <p>Most partners have drawn links to FIRMS from their website, except IOTC, NEAFC and DG MARE</p> <p>NAFO has promoted FIRMS within its constituency; SPC has communicated with WCPFC on the FIRMS invitation to become a member</p>
<p>Efforts should be made both by Secretariat and partners to identify extra-budgetary resources.</p>	<p>EBF – FAO applied to next JPN TF for support to FIRMS – formulates a FP7 GEODIVA project including technological and capacity building support to FIRMS - no results yet</p>

Table 2: Road map priorities agreed upon at FSC7.

During the compilation of the FSC6/7 intersessional activities report, a list of desirable improvements (with an assigned priority, “(1)” being the highest) was proposed. Here follows the status of those recommended actions.

<p>ENHANCEMENT OF FISHERY AND MARINE RESOURCE MODULES (1) Workflow management: finalizing the Excel-to-XML converter tool, (2) improving the CMS. (1) Improving overall site layout (e.g. home page, search results list, etc.).</p> <p>Improving fact sheet modules and web site applications according to FSC7 feedback (e.g. Continuum issues) including (1) the joint search interfaces, FIRMS description, (2) the alignment of the two modules).</p> <p>Creating/Improving interactive maps (e.g. (1) data coverage maps as informative user query interfaces, (2) stocks and fisheries maps viewer with fact sheets access, (3) multiple layers maps for marine resources/stocks, fishing activity areas, EEZs, partners area of competence, species distribution, etc.). (2) Implementing ontology driven navigation among fact sheets.</p>	<p>In progress Done Not done</p> <p>Work in progress</p> <p>Not done</p> <p>Work in progress</p>
<p>DEVELOPMENT OF PAGES AND PRODUCTS AIMING AT DIVERSIFIED AUDIENCE (1) Thematic pages: revision and finalization of the existent global and regional pages and creation of new ones as per FSC7 inputs. Implementing spatial and temporal representation of FIRMS database: (1) data coverage maps.</p>	<p>Done Work in progress</p>
<p>TRAINING / ASSISTANCE TO PARTNERS (1) Routine remote assistance to established partners. (1) <i>Ad hoc</i> trainings for data submission and Word/Excel-to-XML converter tools. (2) Follow-up to Observers (e.g. case studies to DG MARE, SPC, SPRFMO, NAMMCO). Organization of (1) at least one regional workshop (SWIOFC), and (2) liaison with the RECOFI secretariat for a similar workshop, provided funding is identified.</p>	<p>Done routinely Done for ICES</p> <p>Done Done</p>
<p>PROMOTION OF FIRMS Secretariat responsibilities (1) Seeking donors support. (1) Coordinating the development of a communication strategy towards the adoption of a communication plan shared by FIRMS Partners. (2) Producing posters, brochures and other promotional products (e.g. power point presentations) for partners’ utilization.</p>	<p>Done – no result yet Done No poster produced PPT done for Ocean Trust meeting – with NAFO</p>
<p>Partners’ responsibilities (1) Communicating on FIRMS progress and NatFIRMS at Partners’ meetings. (1) Promoting links to the FIRMS website from national agencies websites. (1) Disseminating FIRMS fact sheets from Partners’ website.</p>	

(1) Seeking donors support.	Done at FAO level
BROADENING OF THE FIRMS COVERAGE	
(1) Securing the publication of fact sheets of partners currently involved	Done

Annex 2: Web trends statistics for FIRMS over the period 2007-2011

accessible at ftp://ftp.fao.org/FI/DOCUMENT/FIGIS_FIRMS/2013/inf8e.pdf