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REVIEW OF THE FIRMS ACTIVITIES DURING THE PAST YEAR

Secretariat Report on Progress and Issues

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1. Developments on inventories of Marine resources, and of fisheries

Inventory of Marine resources:

Regarding FAO and its Article 6 RFBs, developments on inventories are as follows:

- CECAF and WECAFC: no change
- SWIOFC: the inventory of Marine resources elaborated by 2007 SWIOFC Scientific sub-Committee is being formalised as part of FIRMS in close collaboration with SWIOFC Secretariat. The pre-inventory consists of about 150 Marine resources units.

Regarding FAO RFBs article 14 which are full FIRMS partners:

- GFCM: 5 Marine resources were added to the GFCM inventory. The on-going development of the GFCM Operational Units database should eventually feed into FIRMS inventory of fisheries.
- IOTC: no change. Recent exchange with IOTC Secretariat indicated that IOTC was in the process of updating its reports to FIRMS.

Inventory of Fisheries:

- FAO: the “global Tuna fisheries” added in the inventory of fisheries
- CECAF: the pre-inventory of 355 fishery units is undergoing a first phase of national validation as part of CECAF 2008-2009 sub-scientific committee agenda. A second phase will consist of a regional consolidation and validation, before publishing in FIRMS.
- WECAFC: a draft inventory of fisheries, consisting of 233 fishery units for all bordering countries (except Columbia, Panama, CostaRica, Belize, Guatemala) is available but would require validation by WECAFC mechanisms.

The available figures for the other FIRMS partners are presented below

Table 1: FIRMS preliminary inventory of Fisheries

Partner	Current inventory (not loaded in FIRMS)
CCAMLR	12 (CCAMLR managed fisheries)
CCSBT	-
EUROSTAT	7 (EU fleet segments)
FAO	1 (global tuna fisheries)
CECAF	355 (Fishing activity fisheries, Fishery resource)
SWIOFC	-
WECAFC	233 (Fishing activity fisheries, Fishery resource)
GFCM	-
IATTC	1 (Pacific tuna fisheries)
ICCAT	-
ICES	-
IOTC	-
NAFO	1 (NAFO fisheries)
NEAFC	11 (7 NEAFC managed fisheries, 4 Fishing activity fisheries)
SEAFDEC	6 (national shark fisheries)
SEAFO	-

2. Reporting on status/trends of Marine resources, and of fisheries

The following table presents a list of the different fact sheets for marine resources published on the Web. The 1st load was mainly implemented by the Secretariat and mainly occurred before the FIRMS launch. Since fall 2006, the partners have started to load the updated information about these resources. Table 2 present the status for these updates as per date of publication of this document:

Table 2: FIRMS Marine resource inventory and updates on status and trends reporting

Partner	Current inventory (and change since previous status)	1 st load (05/ 2006)	Update by FSC4 (02/ 2007)	Update by FSC5 (07/ 2008)
CCAMLR	3	0	0	0
CCSBT	1	1	1	1
EUROSTAT	-	-	-	-
FAO	22	22	0	1
CECAF	227	86	0	14
SWIOFC	-	-	-	-
WECAFC	264	41	0	0
GFCM	41 (+5)	8	6	6
IATTC	21	21	0	0
ICCAT	16	16	7	2
ICES	148	148	2	52
IOTC	15	5	0	0
NAFO	17 (-1)	18	11	13
NEAFC	-	-	-	-
SEAFDEC	-	-	-	-
SEAFO	-	-	-	-

It should be highlighted that for NAFO and ICES, the generation of the marine resources is now based on the use of a converter tool from their Word documents to FIRMS XMLs.

3. Development of Applications

Scope: the FIRMS website currently includes the Marine resource module, the dynamic mapping component, and the Content Management System (CMS). The new fisheries module should soon become part of the FIRMS website.

- Marine resources module

- Activities: this module has been updated in order to accommodate the new FIRMS Status standard descriptors, and the modifications affecting Reference year-Reporting year. Data updates from Partners are still required before agreed layout modifications are implemented. The module is also now able to dynamically nest statistical graphs on a case by case basis.
- Output: Marine resource module ready to receive data updates by Partners in order to implement newly adopted standards.

- Development of mapping application

- Activities: due to multiple constraints which the previously adopted IT mapping solution imposed, resulting in unsatisfactory and partial release of FIGIS mapping products, FIES decided after evaluation of FAO Geonetwork-Geoserver tools, to refactor the FIGIS mapping applications based on these tools. Preliminary results of dynamically embedded maps of stocks and fishery locations in fact sheets could be presented to TWG2. By FSC5, this feature has been finalised and released on the internet, including with specific projections as requested by IATTC and CCAMLR. The FIRMS geographic selector has also been refactored. The other mapping applications (eg Fisheries fact sheets maps) will be progressively released during 2008, as all necessary components are migrated in the new system.
- Output: more performing embedding of dynamic maps in fact sheets.

- Workflow Management System (WMS)

The expression WMS covers the on-line content management system and the conversion tools used upstream in order to streamline the packaging of documents from their native format (Word or Excel).

Finalisation of version 3 of web based Content Management System

- Activities: most of version 2 shortcomings have been addressed; this includes a thorough testing aiming at improving system stability (before and still after TWG2), the development of new features such as cloning of fact sheets, the simplification of fact sheets publishing interface (phase 1), and improvements of the help system. FAO, CCSBT, ICCAT and ICES are the partners who have been using the CMS during this period.
- Output: version 3 of the CMS. With this version, there is no more bottleneck to partners information contributions. Simplification of fact sheets publishing (phase 2 - planned before the end of 2008) will constitute the final aspect of CMS improvement.

Enhancements in streamlining workflow at Partner level

- Activity: the word to XML convertor tool, which automatically transforms Word reports into XMLs compliant with FIRMS structure, has been further enhanced in order to overcome bottlenecks identified by ICES for a smooth process.
- Output: This enhanced tool has been successfully used by ICES, and has been applied to NAFO reports. The tool was presented in details at TWG2 and NAFO is now willing to operate it directly, while other Partners like IATTC expressed the intention to use it.

- Short and simplified URLs

A major effort to simplify long and complex URLs of all pages powered by the FIGIS system took place during fall 2007. The FIRMS website has benefited from this effort and pages are now displayed with short and simple URLs (eg <http://firms.fao.org/firms/partners> or <http://firms.fao.org/firms/resource/13336>).

- Development of the Fisheries module

Background: A draft information architecture template for the fisheries module, illustrated by mock-ups of fisheries fact sheets, was presented to TWG1 in Dec 2005. This template was completed with a proposal for Fisheries naming convention standards. FSC3 requested FIRMS Secretariat to further consult with the members of the TWG for additional case studies. By FSC4 (February 2007), up to 11 case studies had been developed, powered by version 1 of the dynamic Fisheries module. FSC4 requested that

TWG2 meets for final validation of the fisheries module and its underlying data model, based on more case studies.

- **Activities:** on the basis of additional case studies, in particular on North Atlantic High Seas Deep Sea fisheries, a final proposal has been prepared by the Secretariat regarding a flexible layout, and a flexible yet simple XML schema, able to accommodate the complexity related to various thematic approaches to fisheries. The dynamic Fisheries module has been adjusted in parallel to this proposal. The various aspects of the Fishery module (concepts, layout, topic structure, glossary, schema) were presented to TWG2, supported by 28 case studies covering various approaches to fisheries, including Resource (FAO, SEAFDEC), Métier (FAO, GFCM, Fishcode-STF), Production system (FAO, Eurostat, Fishcode-STF), Management Unit (CCAMLR, FAO, IATTC, NEAFC), and Jurisdictional (NAFO). The proposed module was endorsed by TWG2 with a number of amendments. The TWG2 recommended that this module be released in order to enable Partners to start their information contributions. After TWG2 and by FSC5, the requested modifications were brought to the schema and layout.
- **Outputs:** The fisheries module is ready for release on the web in order to start information contributions. Its full implementation will still require refinement in definition of embedded maps, query interfaces, and locator.

- Development of interoperability mechanisms

Two complementary components for interoperability solutions were presented to TWG2. Upon these presentations, some TWG2 members commented that FIRMS reaches the level of services which raised early expectations of a number of partners in joining FIRMS.

Local schemas: the FIRMS Secretariat, taking the opportunity of a training at ICCAT's request, has refined its strategy for distributed schemas. This enables a FIRMS partner to develop its schema in support of its own information management needs, while building on FIRMS standards thus easing interoperability mechanisms.

Fisheries ontologies: as part of the NeOn project, FAO is involved in the development of leading edge technologies for distributed management of fisheries ontologies. The toolkit under development will offer services enabling FIRMS partners to map their classifications to international classifications, with simplified update mechanisms. These mapping rules will then be available through the toolkit to any web-based application, serving numerous system interoperability needs for FIRMS, statistical systems integration, or others.

4. Status of FIRMS website

From what precedes, this section is a concluding statement on the status of the FIRMS website, highlighting what's done and working well, what's not completed, and what should be started. It includes a summary of the contributions processed and the major difficulties encountered. A summary of the different modifications done or still to do is available in annex 1.

Readers should understand that the FIRMS website is altogether an assemblage of the data loaded in its data base, and of different modules, therefore the status of the FIRMS

website as grasped from the user perspective evolves from the status of the sum of its components.

- Database content: Marine resources module

Table 3 shows by Partner:

- Number of inventoried resources;
- Number of Reference Observations loaded / still to load;
- Number of currently published Fact sheets.

Table 3: Marine resources – status of the FIRMS database

Partner	Marine Resources in the inventory	Ref. Obs. loaded/ To load	Fact sheets published	% published fact sheets / Ref. Obs. loaded
CCAMLR	3	3 / 0	0	0 %
CCSBT	1	1 / 0	1	100%
FAO	22	22 / 0	22	100%
CECAF	227	227 / 0	87	38%
WECAFC	264	242 / 22	41	15%
SWIOFC	150	12 / 138		0%
GFCM	41	41 / 0	20	49%
IATTC	21	21 / 0	21	100%
ICCAT	15	15 / 0	15	100%
ICES	145	145 / 0	145	100%
IOTC	15	15 / 0	5	33%
NAFO	17	17 / 0	17	100%
NEAFC	0	-	-	0%
SEAFDEC	0	-	-	-
SEAFO	15	0 / 15	-	-
TOTAL	958	783 / 175	374	49 %

This table indicates that except for new joining Partners, Marine resources identified in the inventories have all been loaded. It also points out that half of loaded inventoried resources do not give way to published status and trends information.

- Website Shell

The FIRMS website shell matches requests of subsequent FSCs.

- short and simplified URLs
- languages: it is available in English and French and FAO is planning to have it available as well in Spanish before the next FSC;
- services accessed from the restricted members area: by logging in, partners have access within the members area to the workflow management system as presented to TWG2, and to the FIRMS working site from which schemas, case studies, training material, working group discussion rounds, meeting documents, etc... are accessible.

Modules:

- Marine resources dissemination module

The Marine resources module is very stable and was completed as per various FIRMS meetings requests.

- it now includes dynamically embedded maps with required projections for IATTC and CCAMLR;
- a marine resource fact sheet can be returned in html, or in xml format. The later enables a partner to reformat it for another purpose (eg as pdf to include as part of a paper report, or as html as part of a partner website).

Layout modifications related to the implementation of Reference + Reporting years, and FIRMS standard descriptors for status and trends will have to await data updates from Partners in the database.

- Content Management System

Version 3 of the CMS as reported to TWG2 matches about 100% of the requests for improvements/bug fixing made through previous FIRMS meetings. The current CMS features are:

- a multilingual user interface;
- a fact sheets loading mechanism, with necessary data integrity control steps;
- a fact sheets publishing workflow composed of 4 steps, with various user rights at each step including editing, reviewing, approving and publishing;
- a multilingual user assistant;
- creation of blank observation, and cloning of an existing observation.
- an XML downloading mechanism, for accessing the XML as loaded in the system. This is useful for a user willing to edit XML according an already existing template and reload it with a modified year of reference;

Through constant testing and enhancements, the CMS has attained a satisfactory level of stability and offers features that should enable most partners to contribute data in an autonomous way.

Still to be done: The interface of the workflow management system is going to be simplified in response to remarks made at TWG2:

- distinct management of the Reference Observation, only available to the FIRMS administrator.
- a given fact sheet will be displayed under only two possible stages, a draft stage and a final stage. The “draft stage” will be editable only by users having a editing rights, but will be viewable by all users having logged into the Members area. The “final stage” will either be published on the internet, or if urgently needed hidden from the internet.

- Mapping module

This module covers three mapping applications in FIRMS:

- Geoselector: Version 2 of the FIRMS dynamic Geoselector is available and offers a more performing solution;
- Maps nested in individual Marine resource Fact sheets, with three type of projections depending on location of the Resource (essentially Atlantic, Pacific, Antarctic);
- Maps nested in individual Marine fishery fact sheets: this application which shares similar features with the Marine resources mapping still resides in the development server, until final mapping conventions for fisheries will be agreed with FIRMS partners.

Still to be done:

- finalisation of the mapping application for the fisheries module;
- enhancement of Marine resources maps with the additional display of Species distribution maps.

- Fisheries dissemination module

The fisheries module modified as per TWG2's inputs is ready for release on the web with those Fishery fact sheet case studies which partners have contributed. Those fact sheets can be currently reviewed by logging in the Members area, and browsing through the working site. The additional actions listed below are essentially required in view of the handling of a large database of Fishery fact sheets.

Still to be done:

- refinement in definition of embedded maps;
- query interfaces,
- Fishery locator

- Web trends statistics

The monitoring of usage of the FIRMS website has been set up through Google analytics in February 2006 allowing analysis of web trends statistics for the FIRMS website. Improvements were brought to the monitoring configuration around the end of 2007. The detailed and illustrated analysis of web trends statistics during period 01/2008 to 06/2008 is available in document FIRMS FSC5/2008/Inf.7¹. This paragraph highlights main trends with reference to statistics presented at FSC4.

- During the first semester 2008, FIRMS has been visited 8905 times by 6960 distinct visitors and 24100 pages have been viewed. Overall during this period there is no significant trend. Monthly average comparisons with the previous report indicate that FIRMS is much more visible on the Web (the monthly number of visitors has been multiplied by 2, and 77% visitors are new visitors), but this doesn't translate yet in a significant increase in interest in its content (total number of monthly pages viewed remains stable at about 4000 pages/month).
- The most popular month was March with 1800 visits made by 1360 unique visitors, showing again the influence of FIRMS events (this time just before FIRMS TWG2).
- North America, then Australia and Europe are the regions 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.
- Links immediately accessible from the home page are influential in frequency of visited pages: the most frequently visited pages are top level links in the FIRMS inventory browser: [Deep sea marine resources - Global, 2005] (viewed 192 times), and [Tuna and tuna-like species - Global, 2005] (viewed 163 times) for an average of 3:30 mins. Also the 2 FIRMS search pages have been used 4500 times which represents 18% of the pages viewed.
- The recommendations for making FIRMS more visible through Referring sites has had positive impacts: 18.5% of visitors have access though a site pointing to FIRMS, with the following decreasing order of importance: fao > wikipedia > friendsofthesea > gfcms > iccat > ccsbt > nafo. 26% of visitors access FIRMS though a direct link, and these are the ones who spend more time (5 minutes) and visit an higher number of pages (4). 55.5% of visitor access FIRMS through use of search engines such a Google, Yahoo.

Conclusions:

The site is more visible and one can note the influence of referring sites on the number of visits. There are more visitors, but mainly visitors with direct links (probably experts) really spend time on FIRMS, while unique visitors getting to FIRMS for the first time seem to browse immediately accessible pages then leave the site. FIRMS at this stage is probably too technical to non-scientific users. The high specialization of the site and its lack of comprehensiveness and update ness might explain these observations.

¹ on FIRMS FSC5 meeting site at ftp://ftp.fao.org/FIGIS_FIRMS/2008/inf7e.pdf

Proposed actions:

- continue to make FIRMS more comprehensive, and foster timely updates from Partners, in order to make visitors coming on a regular basis to check the status of monitoring and management of marine resources. Encourage timeliness by direct links from the home page of last 3 updated fact sheets.
- still 40% of FIRMS partners have not drawn links from their website to FIRMS (8 out of 13 has drawn links). All FIRMS partners should draw these links, while encouraging their constituency to do so.
- services for synoptic understanding should be improved: with the implementation of FIRMS status and trends standard descriptors, outputs of S&T summaries should be downloadable in csv and pdf formats.
- develop new synoptic interfaces in order to facilitate the understanding and the dissemination of information available on FIRMS

5. Training or skills development

During the intersession, the following training occurred:

- ICCAT: Aureliano Gentile has travelled to Madrid in May 2007 to train ICCAT staff in the use and development of XML schemas in ways which are interoperable with the FIRMS XML schema.
- ICES: Sylvain Caillot has travelled to ICES in June 2007 to discuss requirements and accordingly implement an enhanced version of the word to XML converting tool, and to train ICES staff in its usage.
- TWG2: a joint training was organised during TWG2 for all attending Partners on the FIRMS workflow management system.

More generally, the Secretariat has provided assistance to Partners in their information contributions to FIRMS.

6. Promotional activities

An important effort has been developed to promote FIRMS with **FAO RFBs** with the objective to harness their participation:

- SWIOFC: FIRMS was presented at SWIOFC's 1st working group on fishery statistics (April 2007) which agreed that SWIOFC's status and trends work should be reported as part of FIRMS.
- CECAF: FIRMS Secretariat participated to CECAF 5th Scientific Sub-Committee in Casablanca (December 2007). The SSC approved the work done for Marine Resources reporting, and decided to proceed with national validation of the inventory of fisheries. The next step will be a regional consolidation under the auspices of the SSC, which should lead to inputs to FIRMS.

FIRMS promotion was also directed towards **other RFBs**:

- SPC's coastal programme: as recommended by FSC4, discussions took place with the SPC's coastal programme which is active in the monitoring of state of Pacific Islands fishery resources. The development of case studies as part of a MOU between SPC and FAO was agreed in principle, but no resources could actually be assigned in this regard until now.
- SEAFDEC: FIRMS was also presented at the SEAFDEC Regional Technical Consultations (RTC) on Fishery statistics (December 2007) as part of an effort to place statistical developments in a broader information for management framework.

This presentation was made in the context of a SEAFDEC's initiative for implementation of national-STF projects

FIRMS was also presented to **donors**:

- France (during period August to December 2007): this action resulted with a pre-agreement by France to support a trust fund proposal for basic maintenance of FIRMS together with feasibility study for NatFIRMS, in partnership with IFREMER. Through informal channels, the FIRMS Secretariat was told recently that owing to budget constraints, this pre-agreement could not materialise for budget year 2008.
- Japan: as part of a new 4 years trust fund project GCP/INT/069/JPN entitled "Promotion of sustainable fisheries: support for strengthening function of and coordination among Regional Fishery Bodies (RFBs)/Regional Fisheries Management Organizations (RFMOs)" which will start in July 2008, a modest component amounting to \$ 100.000 over 5 years has been secured for the support to FIRMS training activities.
- Norway: as part of the 2008 Fishcode-STF allocation, FIRMS Secretariat applied for an allotment of \$20.000 to \$30.000 in order to support data contributions to FIRMS including through training support.
- EU: through the intermediation of Eurostat, DGMare agreed to organize a formal presentation of FIRMS at its Bruxelles' Headquarters. The meeting planned for the 6th June has been postponed to September 2008.

Making FIRMS visible through **conferences and events**:

- Ocean Biodiversity Informatics international conference (OBI 2007, September 2007, Halifax Canada): FIRMS and its underlying FIGIS infrastructure were promoted with emphasis on existing or potential services in support to needs of users notably in the field of Marine resources conservation, Fisheries management, Ecosystems based management.
- Asia Pacific Economic Community (APEC – April 2007, Brisbane Australia): the FAO-Strategy STF was presented to the APEC Fisheries, and Marine Resources Conservation groups. This presentation emphasised how global implementation of the Strategy-STF is promoted and facilitated through 2 pillars, Fishcode-STF project, and FIRMS.

The FIRMS brochure has been updated to take into account the evolving membership after FSC4

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 16 months of the intersession (ie between 03/2007 and 06/2008), and the corresponding cost is compiled by major activity in table 4. The total time invested amounts to 1.7 man-year for an equivalent of \$ 180.000. This represents a substantial reduction if compared with the previous 2006 yearly effort reported to FSC4: normalised to a 1 year period, we obtain 1.25 man-year for an equivalent of \$ 136.000, compared with 4.4 man-years for an equivalent of \$440,000 during year 2006.

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

- 44% of the cost (73% in previous period) was dedicated to software design and development: CMS and the new fisheries module;
- 30% of the cost (13% in previous period) for information contributions (ie FAO inputs or assistance to Partners inputs including through training);
- 23% of the cost (13% in previous period) to management and marketing;

These trends reflect an on-going redirection of effort from software development towards more support to information contributions, and promotion of FIRMS.

Budget level during this period is probably closer to a cruise level budget. Budget resources were mainly supplied from RP, with only 23% from extra budgetary funds (French APO). It's worth reminding that at FSC4, a business plan had been prepared which required in part yet non secured Extra-budgetary resources. The French trust fund supporting an APO working part time for FIRMS was effectively extended, but the expected Fishcode-STF support did not materialise. Thus it is noticeable that the required financial resources were finally assured through RP support (staff and non-staff).

Table 4: Effort in man x days spent on FIRMS by major activity during period 03/2007 and 06/2008

	Software development		Information contributions		Management and marketing (days)	Total days	TOTAL USD
	CMS (days)	New fisheries module (days)	Training/ assistance to Partners	Direct Data update (FAO) (days)			
T.Farmer, marketing					1	1	
P. BravodeRueda, admin assistance					10	10	
M.Taconet	2	17		2	50	66	
A. Gentile	8	29	12	20	7	76	
E. Balestri			10	30	5	45	
Sylvain Caillot, software development	5	35	22	10	5	77	
F. Calderini	28	10		2	5	45	
T. Jarrett	2	2		2		6	
Yves Jaques, software development	25				6.5	32	
TOTAL	68 d.	91 d.	44 d.	64 d.	83 d.	360 d.	\$180,000
% time/activity	19%	25%	12%	18%	23%		
for reference TOTAL year 2006	512 d.		182 d.		98 d.	948 d.	\$440,000

8. Difficulties encountered during the intersessional period

The difficulties were of two types:

Budgetary

Similarly as reported to FSC4, FIES had to seek financial resources beyond its regular allotments. The expected Fishcode-STF extra-budgetary resources were essentially affected to field activities in support to data collection systems, and the necessary resources for FIRMS finally came from internal Regular Programme funding transfer. This shortage of resources for FIRMS support did also push the Secretariat to

“negotiate” co-funding arrangements with FIRMS partners requiring specific training support.

For the next intersessional period (ie July 2008 – February 2009), the FAO RP budget and the modest training assistance from the Japanese trust fund should be able to compensate the discontinued French APO support. For the medium term, the ability to mobilize the necessary budget level for FIRMS maintenance and development will remain a strong issue.

Scheduling

The TWG2, initially scheduled for fall 2007, could not be convoked before April 2008 since a precondition was a consolidated Content Management System and an upgraded Fishery module. The causes are budget limitations leading FIES’s management to prioritize and sequentially plan application developments within the FIGIS framework. This issue of possible conflicting schedules was already reported to FSC4.

Despite these difficulties, it is however noticeable that a majority of the activities planned at FSC4 can be reported as being implemented (even with some delay) to FSC5 (see annex 1)

9. Planned activities during the coming intersessional period.

This report anticipates that the next FIRMS Steering Committee Meeting will take place in February 2009, back to back with CWP and just before COFI. This would mean that the intersessional period with short (8 months) and doesn’t leave room for ambitious proposals. Therefore, the Secretariat proposal is to conduct those activities which were requested by FSC4 and could not be implemented. These can be articulated around three main areas: the FIRMS modules will be enhanced/finalised; inventories of fisheries and Partners fisheries reports should be loaded and disseminated; emphasis should be placed on the assistance to Partners and more specifically to new Partners.

- Finalisation and/or enhancements of the FIRMS modules:

Finalization of the Content Management System:

The FIRMS CMS current version3 will be finalised in order to address outstanding shortcomings:

- User friendliness, thanks to simplified workflow;
- additional on-line editing features, such as moving elements up and down

Fisheries module: internet release

The Fisheries module should be released including its mapping component and the design and development of its search and browsing mechanisms;

Marine resources module: enhancements:

- As per TWG2’s agreed workplan, the FIRMS Secretariat will finalise the update of the module on FIRMS standard descriptors for Status and Trends, and Reference/Reporting year. The FIRMS database will be updated in close collaboration with FIRMS Partners, and the layout will be modified.
- Synoptic reports downloadable in csv or pdf formats.
- Mapping: the Secretariat will also work on the inclusion of FAO Species distribution maps in the dynamically embedded maps of Stocks/Management units location.

- Complete required standard terms in the loaded fact sheets: gaps in certain collections (eg CECAF have been noted, and such effort will ensure accurate search results).

- Development, loading and dissemination of the fisheries inventories

The fisheries inventoried at FIRMS partners level for reporting purpose (CCAMLR, IATTC, ICES ?, NAFO, NEAFC, SEAFDEC, GFCM ? at least) will be loaded in the system and disseminated.

- Assistance to Partners:

The assistance will consist of the existing remote assistance prevailing during the publishing workflow, and the specific training sessions as requested by Partners; a special emphasis will be placed on the provision of training and support to new Partners in order to enable them to get started with information contributions to FIRMS.

- Promotion of FIRMS:

The objective is to increase the level of audience, since a high audience will strongly encourage data contribution to FIRMS, additional partners to join, and sponsors to support. It is believed that FIRMS will have increased interest to a broader community of users provided it is able to realise a combination of the following factors:

- more language versions;
- more insights on the home page that the site is active and that the DB grows;
- maps or synoptic products visually showing facts and trends based on standard indicators;
- services to information providers;
- an ever increasing coverage, geographically and thematically;

More language versions:

The Secretariat will make the site working in Spanish.

Insights that the site is active:

The home page could highlight the few latest fact sheets uploaded, or the 3 latest Partners who have updated fact sheets together with a link to the concerned fact sheet.

Services to information providers:

At TWG2, FIRMS partners were given an overview of the benefits and opportunities that exist in standardizing metadata and protocols for fishery information. The Secretariat could advise Partners how to use already existing services to improve their own workflow.

Increasing FIRMS coverage:

FIRMS will be presented to new potential Partners as per guidance from FSC5. The next meeting of the RSN (along with COFI 2009) will be an opportunity to update all RFBs on FIRMS status. Regarding FAO bodies, it is expected to place FIRMS on RECOFI's agenda.

Extra-budgetary fund raising:

FIRMS's promotion will continue at donors level. In this regard, the planned meeting with EU is expected. A submission to the GEF programme is envisaged.

FIRMS as a reference website:

FIRMS should be strongly promoted as the reference website so that the international community naturally matches the FIRMS image to Fishery resources status and trends reporting.

The first step proposed to improve FIRMS visibility on the Internet is for the Secretariat, with the collaboration of FIRMS partners, to **lead a campaign to promote the FIRMS website** through partner websites and collaborative institutions websites.

Annex 1: Status of implementation of FSC4 recommendations

Recommendations of FSC4	Status by FSC5
The FIRMS Secretariat will follow up on contacting NASCO and NAMMCO for their potential joining of the partnership.	not done
FAO's Annex 2 should be revised to reflect GFCM's now formal partnership status, and newly created FAO/SWIOFP Commission.	not done
The FIRMS Secretariat will contact SPC's Coastal Fisheries Programme to investigate partnership possibilities.	done. The principle of a MOU to develop case studies was agreed, but no more action taken due to lack of resources
Patagonian toothfish; coordinate submissions to FIRMS between CCAMLR and SEAFO	?
<p>The website layout (menus and figures) should be redesigned to give primary focus to the database contents/fact sheets and less attention to the presentation and background of FIRMS itself.</p> <ul style="list-style-type: none"> • a home page updated with freshest news, for insights that the site is active 	done
Solutions for enabling search according to regional or local common names will be sought.	partially done: related to settings for distributed local schemas
The words currently used in the menu choice "Database" should be changed to a phrase that more accurately reflects the contents (e.g., "Status and Trends Fact Sheets")	done
Translating the FIRMS website into additional languages should not be a priority at this point in time.	French version was released. This enables correct display of fact sheets in French language
<p>Secretariat should finalize the CMS. Details on technical aspects should be discussed by TWG members at the next TWG meeting.</p> <ul style="list-style-type: none"> • a user security mechanisms free of defects. • more controls on the upload and workflow actions • cloning facility, in order to replicate easily an existing fact sheet to a new one <ul style="list-style-type: none"> • User friendliness • additional on-line editing features, such as moving elements up and down 	done
Marine resources module finalized with dynamically embedded maps, with projections as required by Partners	done
Template of the MSWord-to-XML conversion compatible forms will be made available to all interested Partners.	done
For each Fact sheet, each Partner will decide if dynamic graphs are to be included and what data they will use, if	partially done

any. These instructions will initially be communicated manually to the Secretariat but could in the future be included as a default option in the fact sheet creation process.	
Partners having contributed case studies will validate the Fisheries module results and convey their comments to the Secretariat as soon as possible.	partially done: not all partners have commented
Validation of the Fisheries module and its underlying data model should be a task assigned to the Technical Working Group	done
Implementation of standard stock status descriptors	addressed by TWG. Application ready for data updates
Expansion of FIRMS membership to national institutions will not be considered at this point in time. The document FIRMS FSC4/2007/5 should be kept on the website for future reference.	
Partners will provide reference pictures of fish species when these are not available to FIRMS from other sources.	not done
A category for 'Geoform' or 'Sea floor physiography' will be added to the list of FIRMS general descriptors, containing the above mentioned list of terms.	done
A year will not be displayed as part of a fact sheet name. In the fact sheets, Partners should submit information on three years: Reference year (usually pertaining to the year of the pertinent scientific meeting), publication year, and last year of data in the assessment.	addressed by TWG. Application ready for data updates
The above agreed definitions will be added in the FIRMS IMP as part of the existing Data dictionary Guidelines.	done
'Work plan: Finalise the FIRMS modules, i.e. the Content Management System (CMS), the Fisheries module and the mapping software.	done
Develop, load and disseminate fisheries inventories for at least eight Partners.	Partially done: inventories are available from CCAMLR, NEAFC and FAO. Only 20 case studies have been loaded in the system. Other partners (IATTC, ICES, NAFO, SEAFDEC, GFCM) have not provided inventories
Provide assistance to partners, including training to in particular new Partners and in WMS for Technical Working Group (TWG) members.	Done: specific training delivered to ICCAT, and ICES; and all partners attending the TWG2 were trained in Workflow Management System.
Promote FIRMS and the website.	CECAF, SEAFDEC, SWIOFC, OBI07, APEC Fisheries working group
Adequacy of the proposed budget was brought up. It was noted that some elements of the budget are still not	Fishcode-STF support didn't materialize. French donor further

confirmed but the Secretariat was confident that sufficient funding could be made available through consultations with the Fishcode-STF project and French donor.	supported, FAO RP completed the needs.
SEAFDEC expressed the concern that the remaining work of the case study needs to be fulfilled soon in order to show to the member countries on the benefits that could be derived from the partnership in FIRMS.	case studies were finalized. Member countries were presented FIRMS at SEAFDEC RTC workshop
solicit external funding for future activities.	Modest Japan TF mobilized for training. Pre-agreement from France for continuing support to FIRMS while working on feasibility study for NatFIRMS.
A meeting of the TWG (TWG2) will be convened either shortly before or after the northern hemisphere summer	Done, albeit delayed (April 2008)
Partners will support the Secretariat in seeking additional funding for future FIRMS activities.	Eurostat facilitated contacts with EU DG Mare. A FIRMS meeting is planned as soon as possible in Bruxelles

Annex 2: Web trends statistics for FIRMS

accessible at ftp://ftp.fao.org/FI/DOCUMENT/FIGIS_FIRMS/2008/inf7e.pdf