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FIRMS WEB TRENDS STATISTICS OVER THE PERIOD 2007-2012

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1. Web measurement basics

The analysis of the FIRMS Web site is based on the Web traffic analysis generated by Google Analytics and by the open source software used in FAO, which is called AWStats (Advanced Web Statistics). Google Analytics is a free service provided by Google. It helps to analyze the way people access and use web sites. AWStats is a log analyzer which creates advanced Web, ftp, mail and streaming server statistics reports based on the rich data contained in server logs. For the current analysis only Google Analytics was consulted.

1.1 Page Views

The definition of page view is:

A page view is counted with the successful loading of any document containing content that was requested by a web site visitor, regardless of the mechanism of delivery or the number and frequency with which said content is requested.

Page views are the measurement of a visitor's interest in a site and they provide an easy way to convey the popularity of a page.

1.2 Visits

A visit is counted when a unique visitor creates activity on a web site, measured using sequential page views, regardless of the duration of this activity as long as the period of inactivity between page views does not extend beyond 60 minutes.

A visit, also referred to as a session or user session, is used for measuring the amount of traffic a Web site gets.

1.3. Bounce rate

Bounce Rate is the percentage of single-page visits (i.e. percentage of visitors which doesn't go further the accessed page and left the website).

1.4 Geographic location

How is it calculated and how reliable is it?
The country of origin of the access is calculated from IP address the user's computer is assigned when it connects to the internet - which may be fixed or dynamic. This is the IP address that is seen in the web server logs. Each IP address block is assigned by one of the regional internet registries to a particular country. AWStats uses a database built from data published by the regional internet registries to make the calculation of which country an originating IP number is coming from.
That said there are some shortcomings. Few conclusions can be drawn if the data says "US", "EU" or "unknown". If other countries are near the top then this can be considered interesting data. The data can be considered 95% accurate for other countries apart from the three mentioned above.
Similarly to AWStats, Google Analytics reports the country or territory from which visits originated, based on IP address of the visitor, which is mapped to a geographic region.

2. FIRMS Web trends (2007 - 2012)

2.1 Analysis of general trends

The analysis below is based on web traffic data provided by Google Analytics. This software was used to calculate various indicators from January 2007 to December 2012.

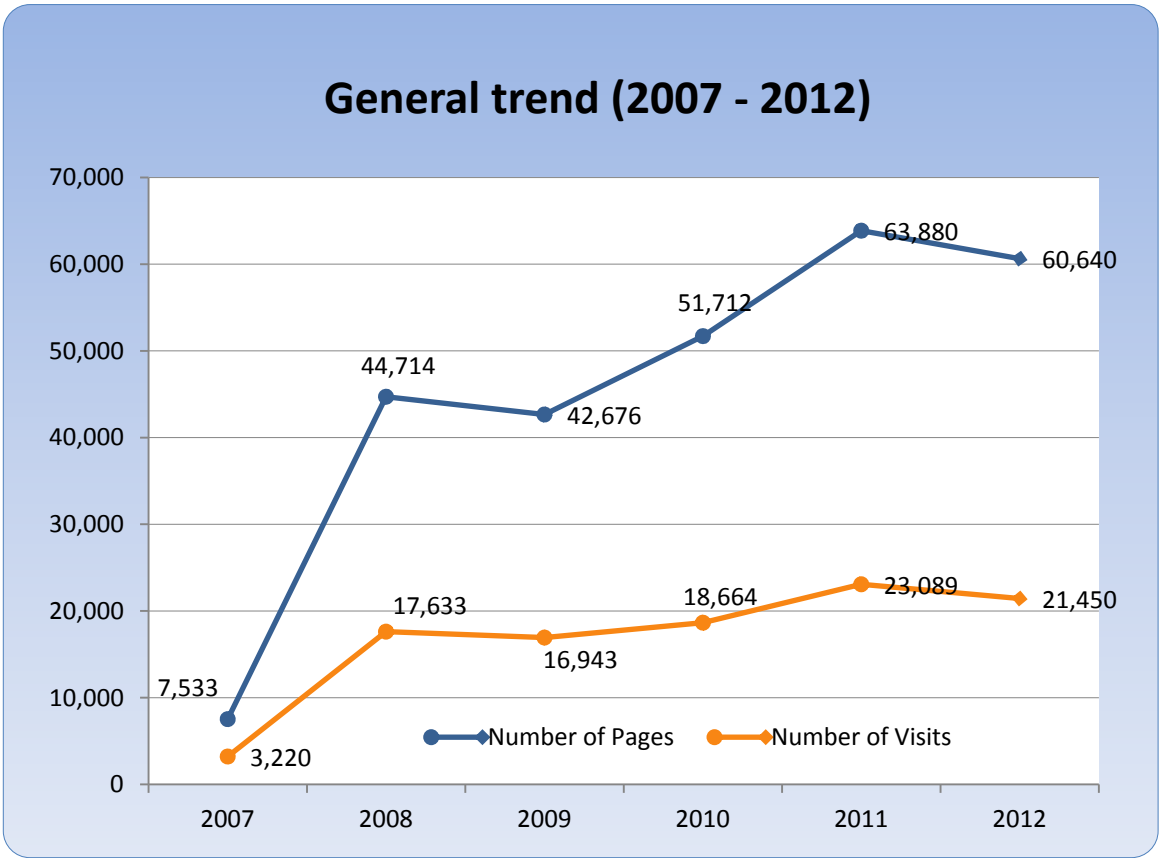

Fig. 2.1 FIRMS general trend

Table 1 FIRMS general trend (2007 - 2012)

Year	No. Visits	No. Pages	No. Pages/Months	Pages/Visit
2012	21,450	60,640	5,053	2.83
2011	23,089	63,880	5,323	2.77
2010	18,664	51,712	4,309	2.77
2009	16,943	42,676	3,556	2.52
2008	17,633	44,714	3,726	2.54
2007	3,220	7,533	628	2.34

Figure 2.1 and Table 1 show that the overall number of visits and pages increased along time until 2011. A slight decrease, around 7%, is occurring during 2012, while the number of pages/visit mean value shows an increase. It should be noted that this break

of the historical growing trend in number of visits of about 20% on average has a “technical incident” explanation (see paragraph 2.3 and figure 2.8 and 2.9) which has just been addressed by the FIRMS Secretariat and as a result, it is expected that the trends will come back within short time frames to a steady growth.

The bounce rate (the percentage of visitors who enter the site and leave it rather than continue viewing other pages) is pretty high in the home page (>50%) while it is lower when searching pages or thematic pages are reached.. In other gateway pages (i.e. Concepts) the bounce rate is instead very high (>78%). The average time on page has a similar behavior. These numbers suggest that users are interested in authoritative sources of information on status of fishery resources, but, in some cases, they give up for various reasons. Possible causes could be outdated high levels pages, lack of friendliness, incomplete coverage, difficulty in finding what they are looking for.

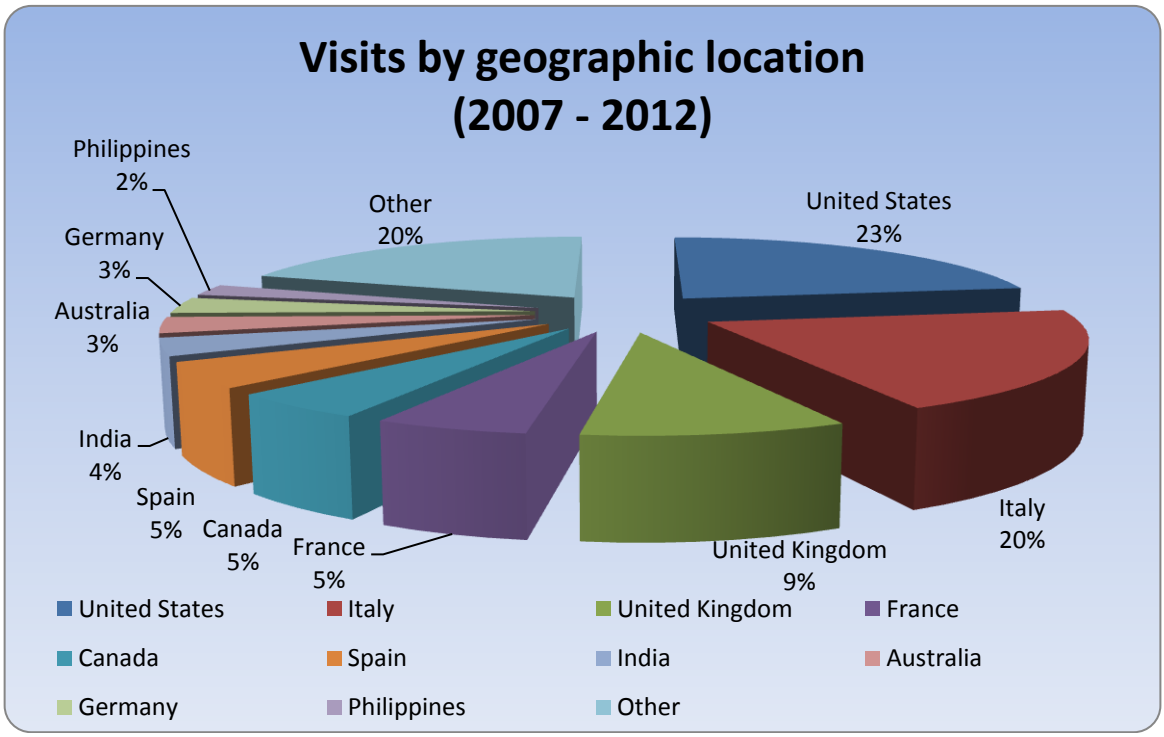

Fig. 2.2 Visits by geographic location

Figure 2.2 describes the geographic location of the visits; the percentage is calculated upon a sample of 25 countries. The highest percentages of visits are originated by United States, Italy and UK. It should be noted that the figure for Italy may be inflated by the activity of the Secretariat which is regularly monitoring and updating the FIRMS site. The category “Other” includes Portugal, Japan, Netherlands, Belgium, Norway and Indonesia as top visitors among other countries.

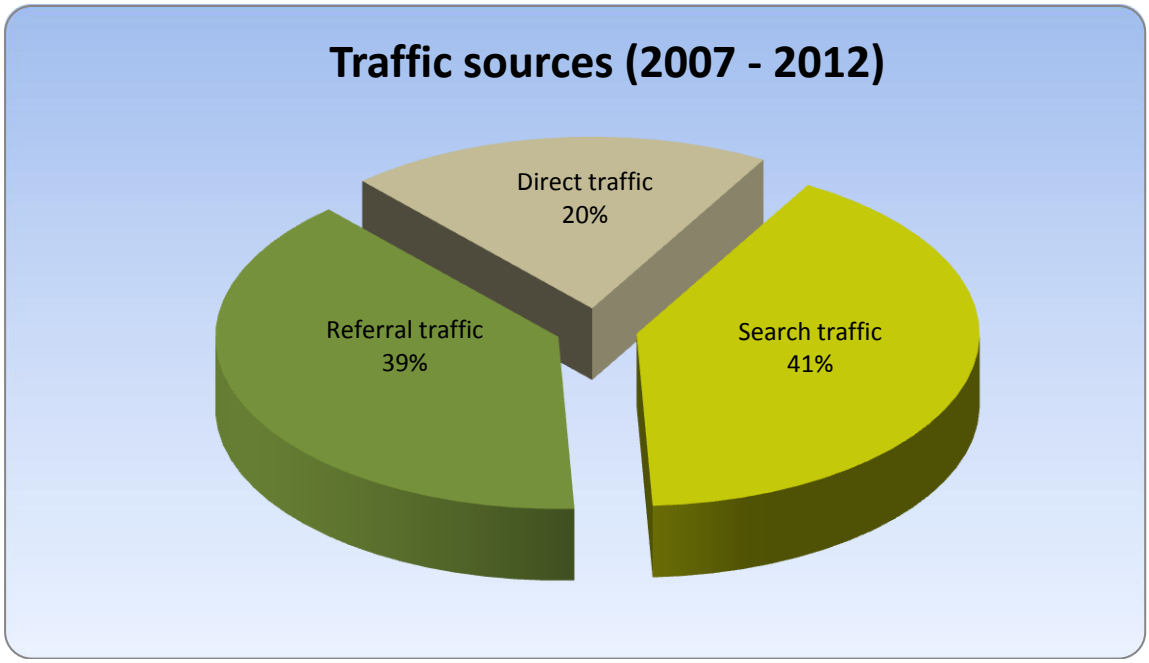

Fig. 2.3 Traffic sources

Figure 2.3 shows that traffic sources for the FIRMS web site are generated mostly by search engines and by referral sites.

- Search traffic (41%) is mostly generated by Google search engine (about 90%), followed by Yahoo, Bing and others.
- The majority of referral traffic (39%) is due to the following web sites (listed in decreasing order of importance): fao.org, en.wikipedia.org, gfcm.org, fishbase.org, iccat.int, iattc.org, images.google.com, seafo.org, ccsbt.org friendofthesea.org, ices.dk, nafo.int, tuna-org.org, seafdec.org, search.babylon.com, facebook.com. It should be noted that some of these sites contributed discontinuously to traffic in the considered time frame (e.g. friendofthesea.org and ices.dk had pikes of access in certain periods of the considered time range).
- Direct traffic (20%), visitors who clicked a bookmark or entered a URL, has an higher average visit duration compared to the other traffic sources (00:04:47 vs. 00:02:56). Landing pages for direct traffic are, mostly, the home page and, secondarily, the search page interfaces.

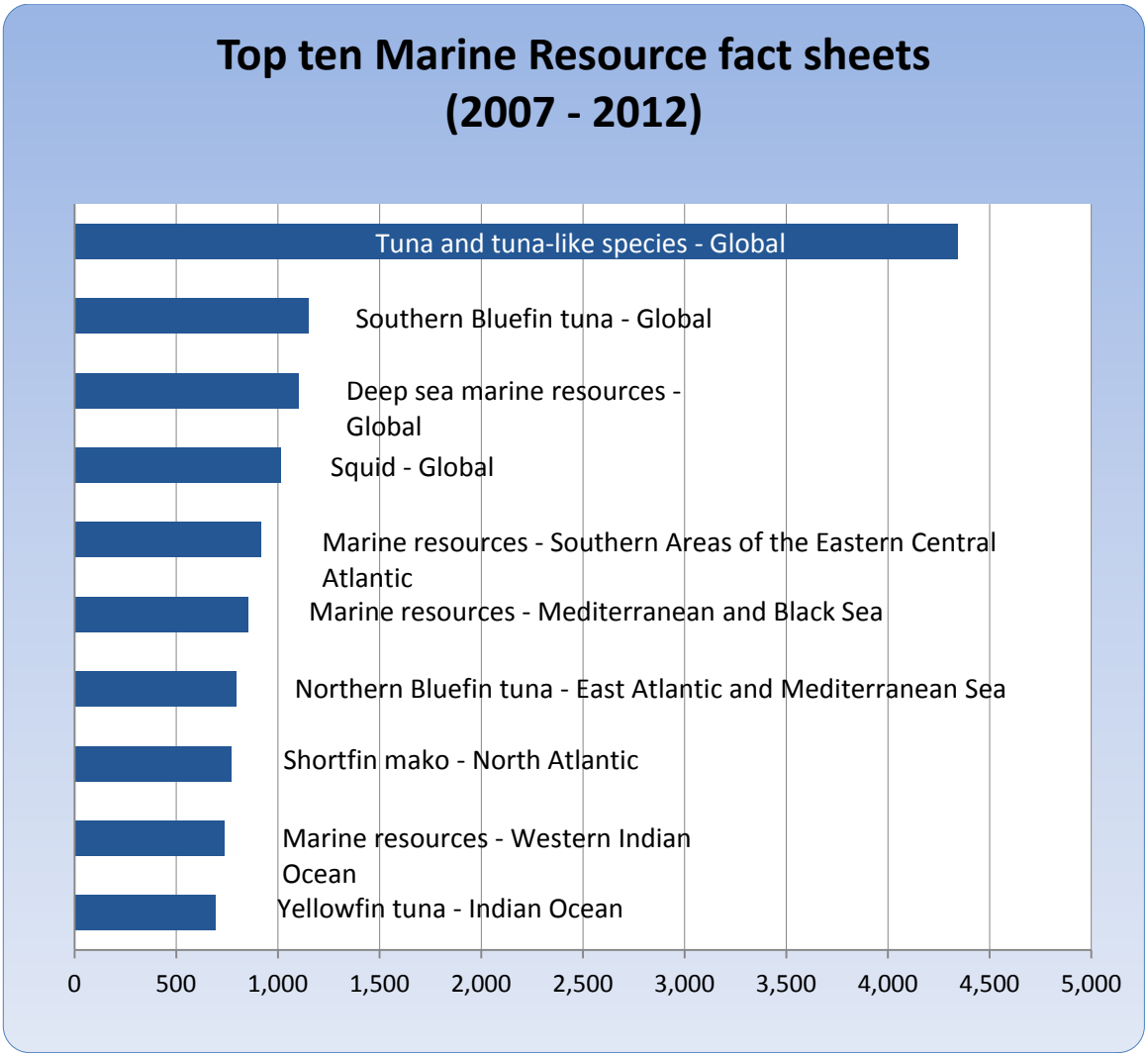

Fig. 2.4 Top ten Marine Resource fact sheets

Figure 2.4 relies upon the total number of page views per Marine resource fact sheet in the period 2007 - 2012. Information on Tuna is considerably more requested (more than threefold higher) across considered years than other fact sheets. The increase of the regional reports may be connected with the ongoing FIRMS activities in the Eastern Central Atlantic and Western Indian Ocean.

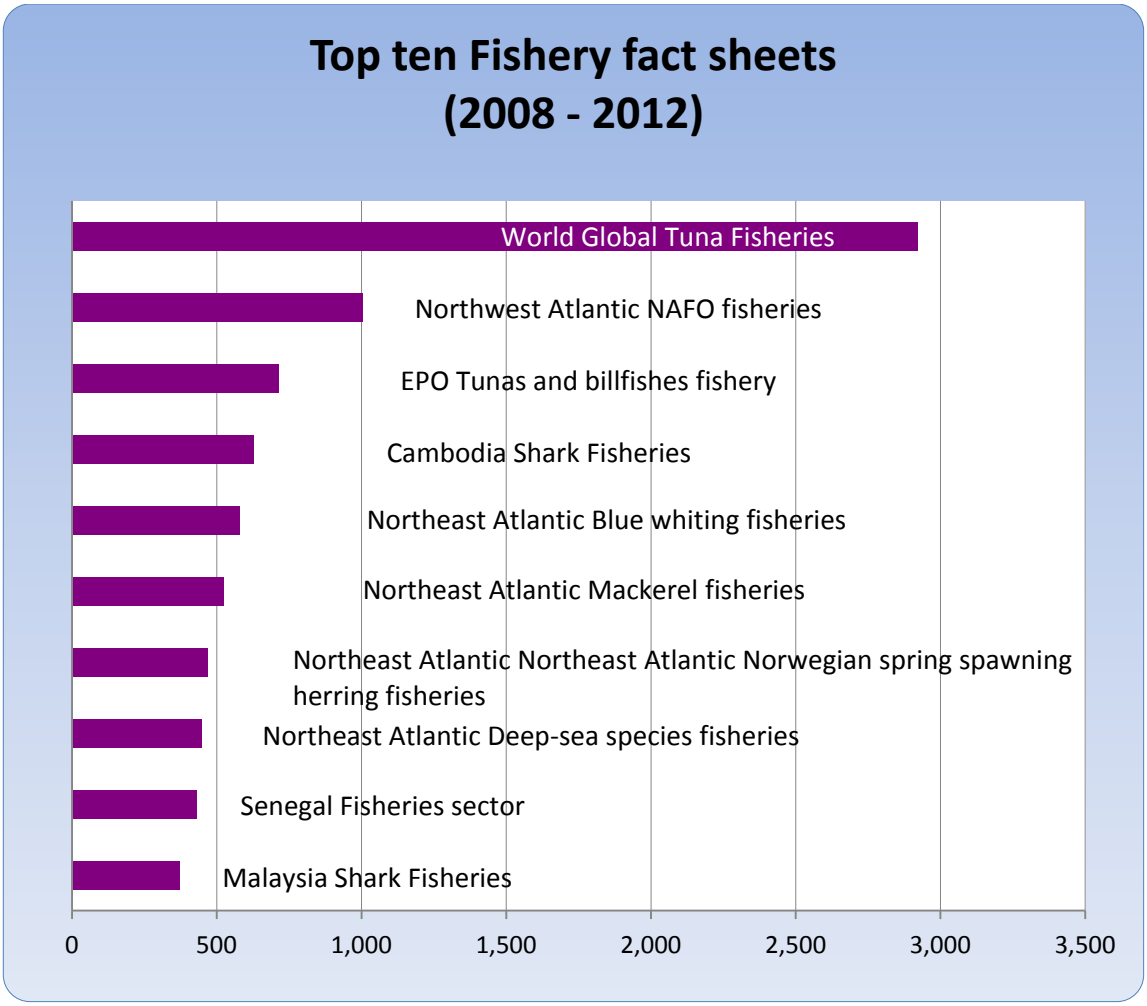

Fig. 2.5 Top ten Fishery fact sheets

Similarly to figure 2.4, the figure 2.5 shows the total number of page views per Fishery fact sheet in the period 2008 – 2012 and again global information on Tuna is considerably more requested although also many other type of fisheries are visited often, particularly the ones containing management information. It should be noted that the time frame is different in this graph since the very first Fishery fact sheets were released in late 2008, and that these statistics might reflect the "age" of the fact sheet rather than the current status of users' interest.

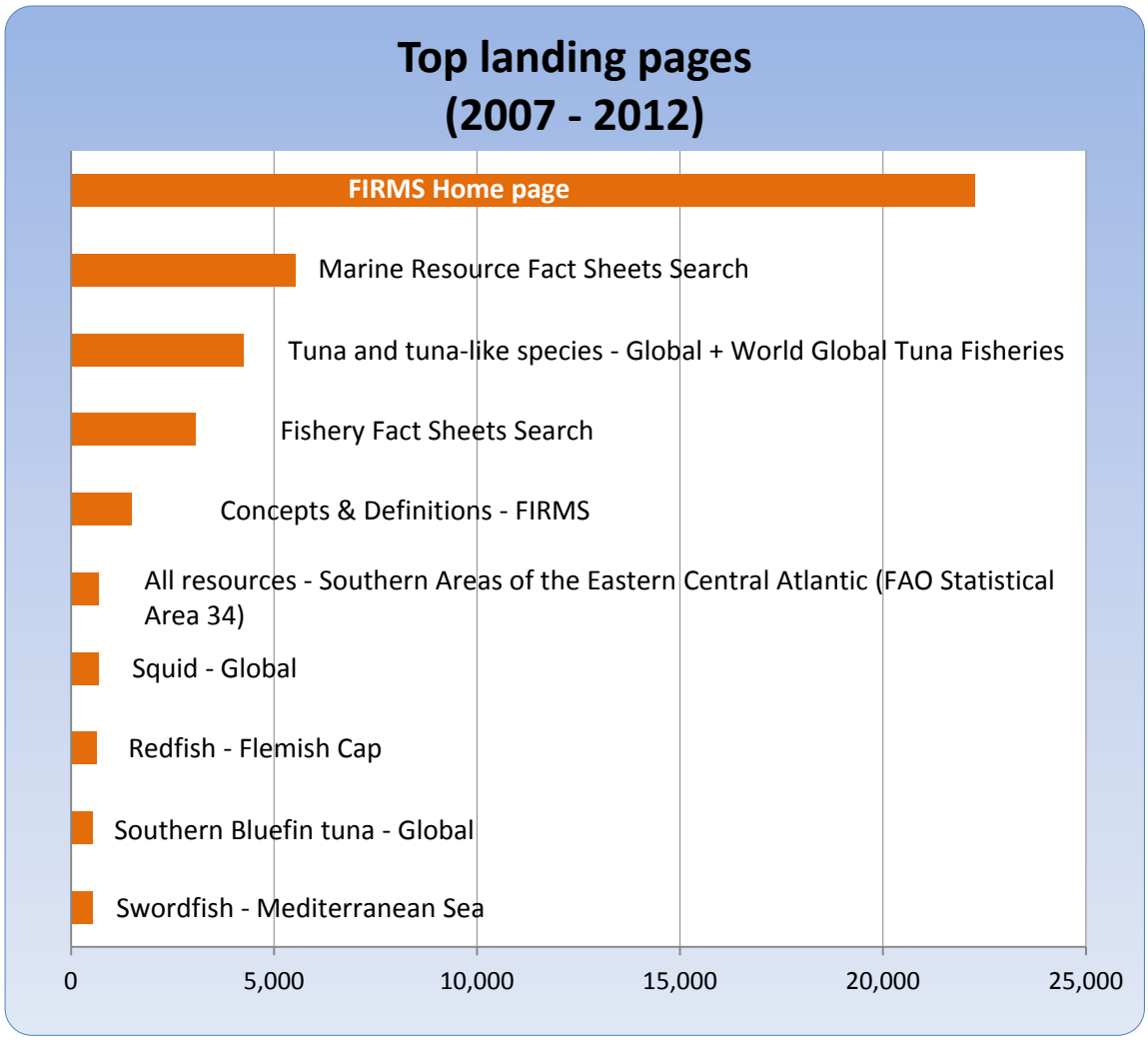

Fig. 2.6 Top landing pages

Figure 2.6 shows the number of visits per "landing" page, those pages which are accessed by users through textual links, banners or others references, including search engine results. The home page is the most viewed, followed by the Marine Resource fact sheets search. Both global information on Marine Resource and Fishery fact sheets on Tuna are highly accessed and it is consistent with the above trends.
The page "Concepts & Definitions" is regularly viewed along the considered period and it ranks higher than the majority of the fact sheets taken singularly.

The web trends for exit pages are sorted in the same way but with lower numbers. The bounce rate is higher for the FIRMS home page and for the fact sheets while it is lower for the search interfaces (including the inventory browser). It indicates that a sub-set of FIRMS users run one or more queries when browsing the search interfaces.

2.2 Comparing 2012 to 2011

In the last two years (2012 and 2011) FIRMS released several new Marine Resource and Fishery fact sheets and new web pages (e.g. FIRMS on tuna, FIRMS on deep sea (high seas) resources) which deserve a deeper analysis to get more insights about users' behaviors.

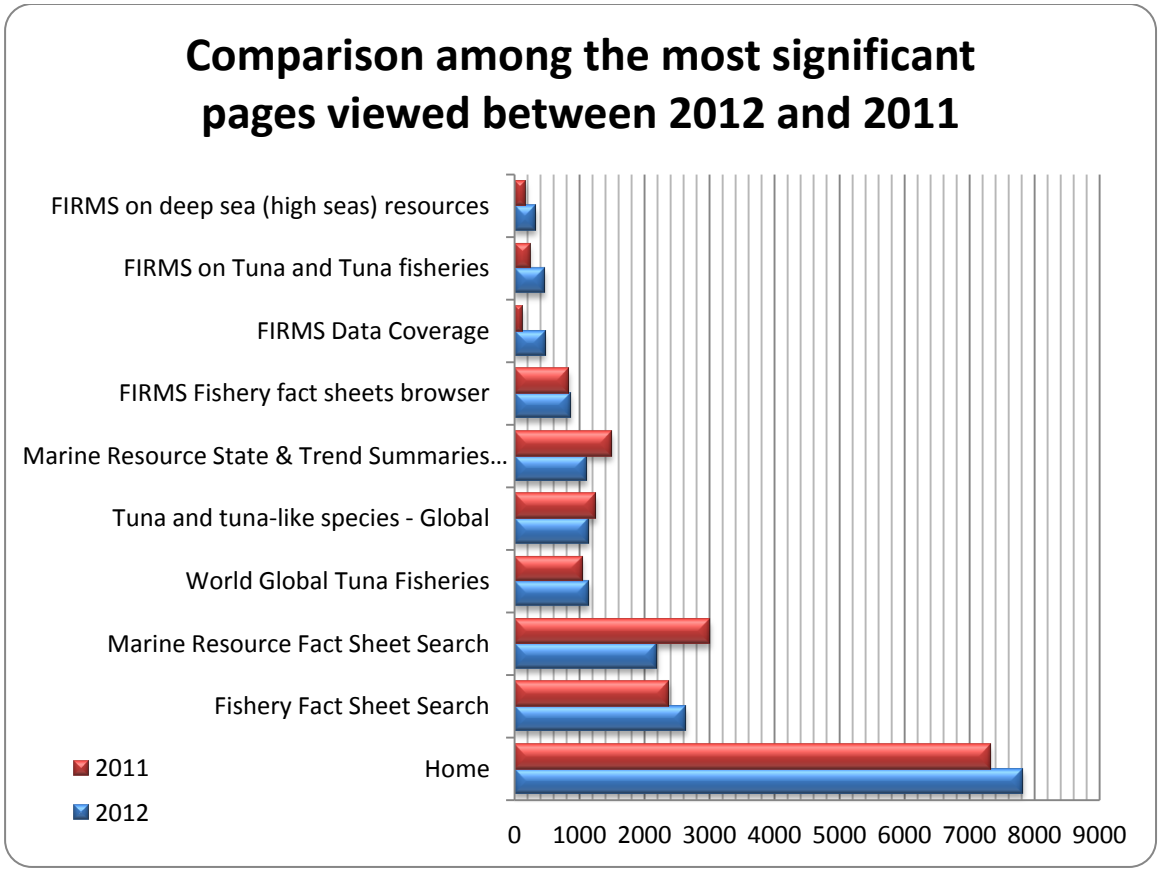

Fig. 2.7 Comparison among the most significant pages viewed between 2012 and 2011

In spite of a general decrease of the page and visits during 2012 (around 7%), Fig. 2.7 shows that some important pages have a reverse trend. The home page, the fishery search interface, the FIRMS data coverage and the two thematic pages ("FIRMS on Tuna and Tuna fisheries" and "FIRMS on deep sea (high seas) resources") are more visited in 2012 than in 2011 while the Marine Resource fact sheet search page is less visited.

These data suggest a positive impact of the new products released by FIRMS, i.e. Fisheries and thematic pages.

2.3 Notification of the technical incident which caused a drop in the web trends during the second part of 2012.

The 2012 drop in the yearly web trends lead the FIRMS Secretariat to investigate the possible causes. Fig 2.8 evidences a suspicious change of pattern between 2011 and 2012: the traffic due to the search engines (e.g. Google, Bing, Yahoo) has dramatically decreased from September 2012. The evidence was noticed in January 2013 while writing this document and these worrying web trends lead the Secretariat to realize that FIRMS pages have disappeared from the first few results page of these search engines. The August-September drop was synchronous of the FIGIS server problems which triggered i) some temporary protective actions aiming at preventing the search engines' crawling robots from scanning, and ii) the migration of all FIGIS applications on new servers. The oversight of this migration was to re-enable the Robots, and as a result the FIRMS pages were not crawled anymore by the search engines and have progressively disappeared.

Fig 2.9 also shows that along the January-July 2012 period, a linear annual growth of about 5% has prevailed for the search engine web trends part. As a conclusion, the disappearance of FIRMS among the top results in Google during the second part of 2012 very likely explains the break in the continuing 20% historical growth trend observed during the past few years, and worse, the 7% decrease recorded.

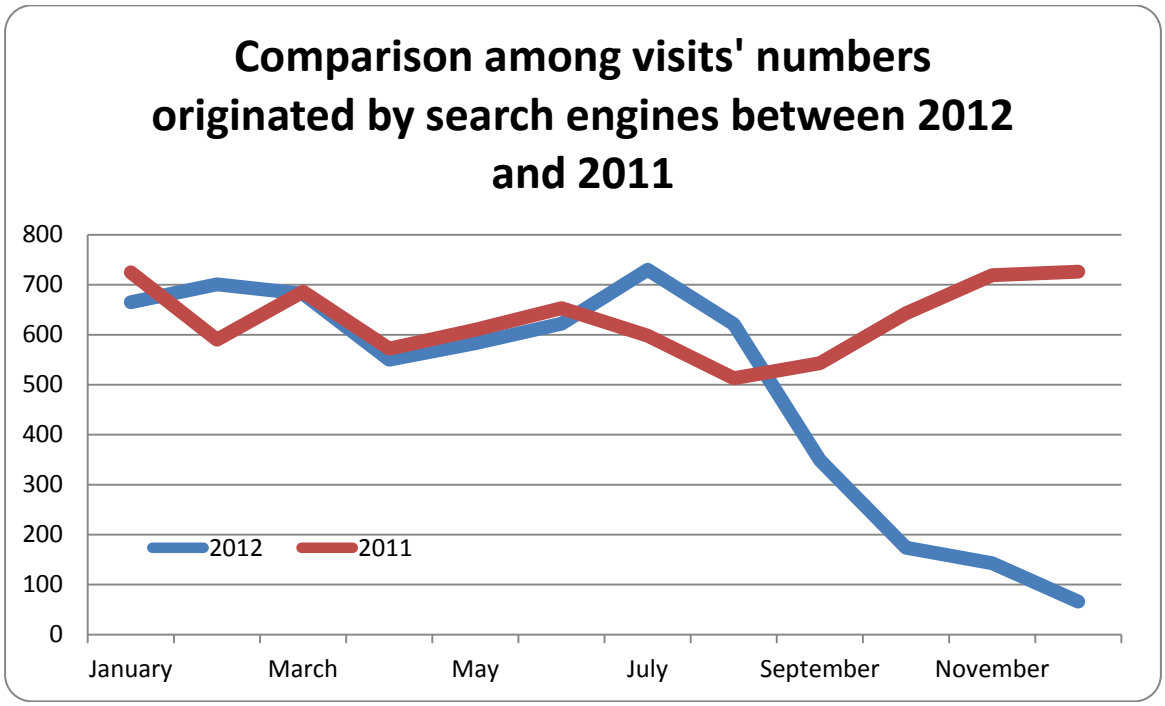

Fig. 2.8 Comparison among visits' numbers originated by search engines between 2012 and 2011.

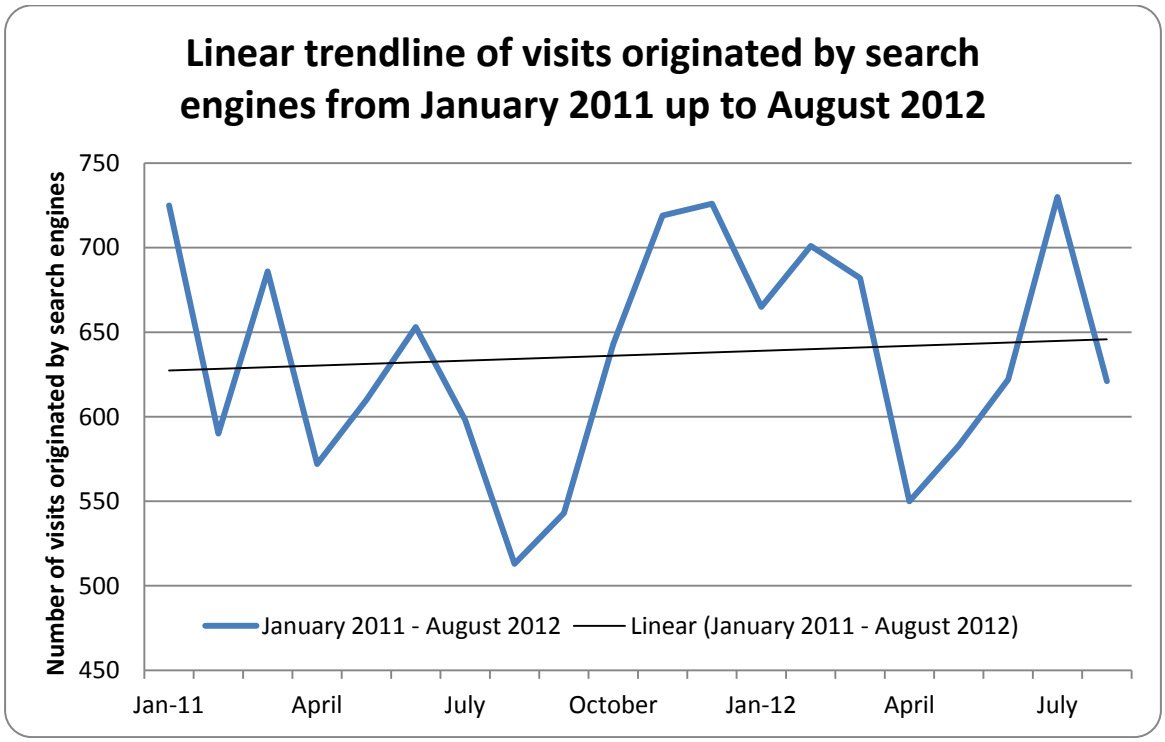

Fig. 2.9 Linear trendline of visits originated by search engines from January 2011 up to August 2012

Another potential cause for a lower ranking of FIRMS pages in Google search results will have to be investigated. During July 2011, the word “FAO Fishery and Aquaculture” was removed from the metadata of all FIRMS pages since it was causing wrong Titles within the search results. This possible negative impact is still to be verified.

3 Comparing FIRMS Web statistics with other FAO Fisheries and Aquaculture Department collections

FIRMS Web statistics have been compared to other FAO Fisheries and Aquaculture department collections of pages over the 2007-2012 period of time on the basis of the Google Analytics figures. The criteria utilized are indicated in table 4.

In particular, FIRMS Marine Resource and Fishery fact sheets were compared with 3 most popular fact sheet modules of the FI website: “Aquatic Species”, “Fishery and Aquaculture Country Profile (FACP)” and “National Aquaculture Sector Overview (NASO)” fact sheets.

Table 2: Number of pages per website (2008-2012)

Web site	Visits	No. Pages
FIRMS	97,779	263,622
FI	5,946,850	17,435,386
Ratio	2%	2%

The table 2 allows quantifying the magnitude of the overall web traffic (visits and pages) of the FIRMS web site as amounting to about 2% of the entire FI web site. Undoubtedly, the FIRMS web site has been published online much more recently than FI, is composed of much smaller number of pages and treats only a limited set of topics in comparison to the variety covered by the FI web site (2 modules *vs*. about 35).

Table 3: Total number of pages viewed per fact sheets domain (2008-2012)

Fact sheets domain	No. Pages
Fishery fact sheets	20,924
Marine Resource fact sheets	89,685
FishFinder / Aquatic Species fact sheets	674,292
National Aquaculture Sector Overview (NASO)	979,429
Fishery and Aquaculture Country Profile (FACP)	1,498,710

In table 3, the comparison is extended to selected flagship web domains (i.e. most consulted and popular ones) of the FI website. Here FIRMS Marine Resource fact sheets correspond to 12% of Aquatic Species, about 10% of NASO and 6% for FACP (the most consulted domain on the FI website). Furthermore, when aggregating Fishery and Marine Resource fact sheets the ratio raises to15%, 13% and 8%, respectively.

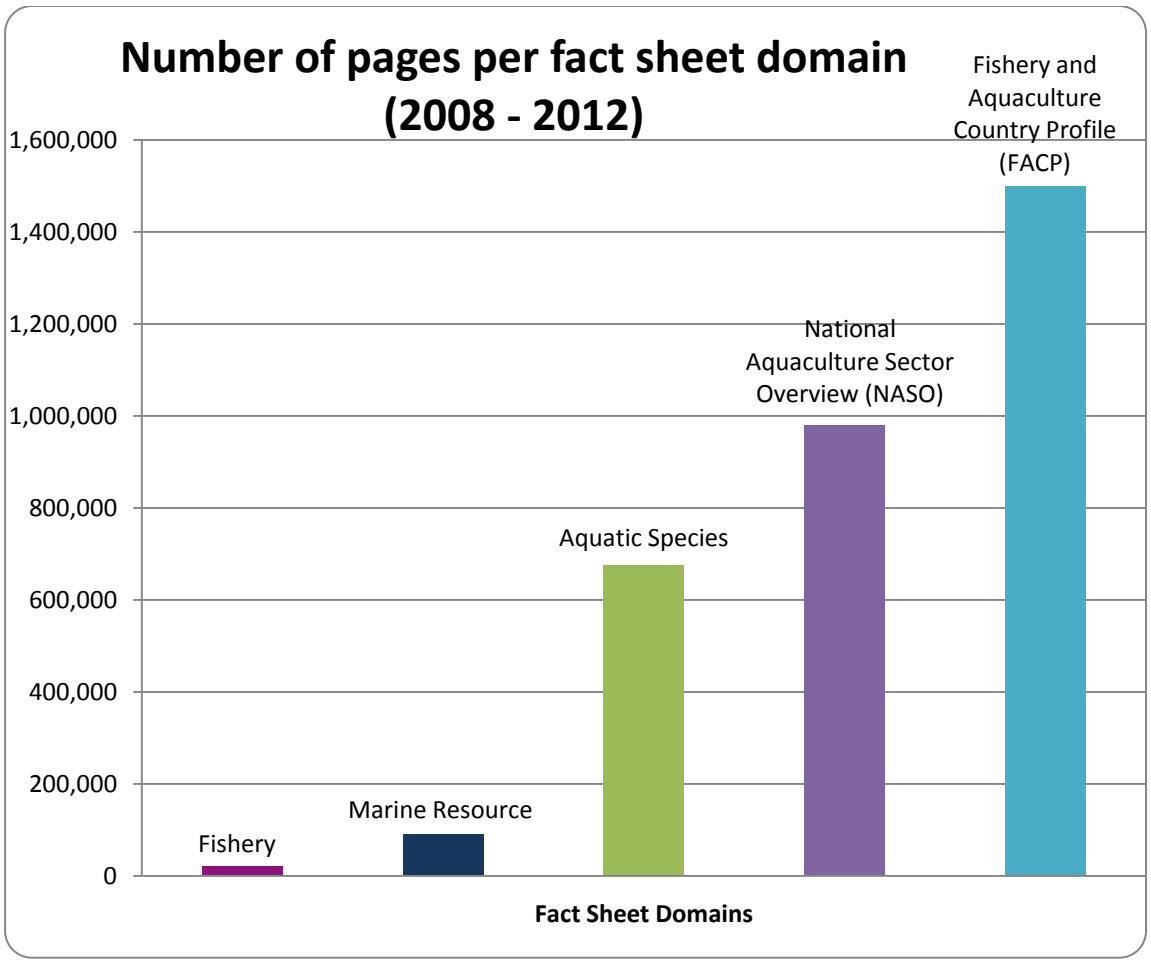

Fig.3.1 Total Number of pages viewed per fact sheets domain (2008-2012)

This comparison is interesting in providing broad orders of magnitude at global level but limited since the nature of the products disseminated is different. In nature and in terms of usage, a single stock fact sheet at global level is rather to be compared to one single [species x country] catch statistic record, than to the digest which a global species or country profile fact sheet delivers. Together with the above analysis, it leads to reiterate that the information products with higher global value are the overviews and digests.

Other comparisons will have to be analyzed, for example:
- a comparison between FishFinder Tuna species fact sheets, and the FIRMS tuna thematic page and related tuna fact sheets, over a recent period e.g. 2011 – 2012.
- a comparison regarding a regional usage: traffic hitting FIRMS fact sheets in the GFCM website, against the other pages of the GFCM website.

Table 4 - Criteria: the number of pages was calculated by filtering the full list of concerning URLs in order to consider exclusively the fact sheet visualizations (i.e. omitting URLs of search page interfaces).

Fact sheets domain	Filtered URLs
Marine Resource fact sheets	firms.fao.org/firms/resource/[0-9]
Fishery fact sheets	firms.fao.org/firms/fishery/[0-9]
FishFinder / Aquatic Species fact sheets	www.fao.org/fishery/species/[0-9]
Fishery and Aquaculture Country Profile (FACP)	www.fao.org/fishery/countrysector/fi-cp*
National Aquaculture Sector Overview (NASO)	www.fao.org/fishery/countrysector/naso*