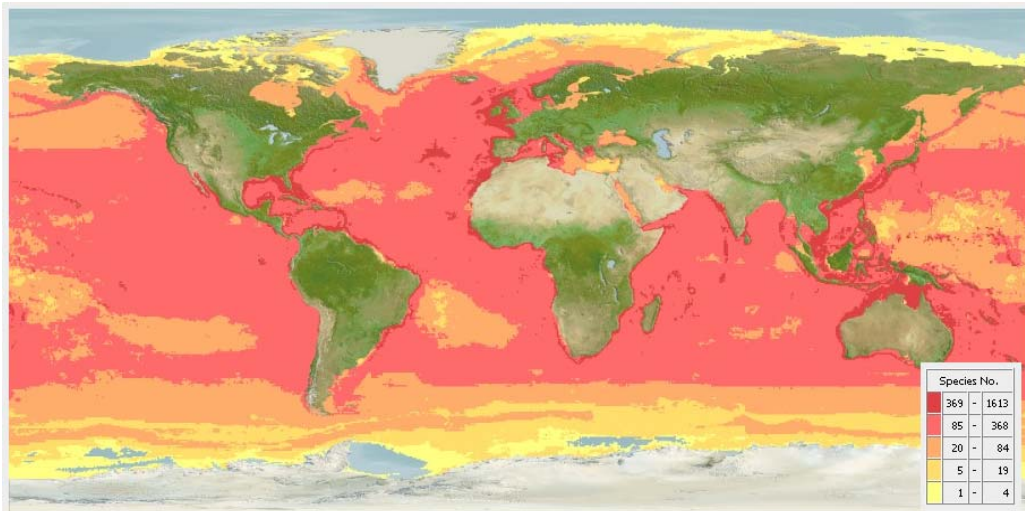




# incofish



Global marine biodiversity map produced by the Biodiversity Mapping Workpackage and available from [www.aquamaps.org](http://www.aquamaps.org)

Project no: INCO 003739

Project acronym: INCOFISH

Project title: Integrating Multiple Demands on Coastal Zones with Emphasis on Aquatic Ecosystems and Fisheries

Instrument: Specific Targeted Research Project (STREP)

## 3rd Periodic Activity Report

Period covered: 01 May 2007 to 30 April 2008      Date of preparation: May/June 2008

Start date of project: 01/05/2005      Duration: 3 years

Project coordinator name: Dr. Rainer Froese

Project coordinating institution: Leibniz Institut für Meereswissenschaften an der Universität Kiel

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## **Publishable executive summary**

INCOFISH conducted specifically targeted strategic research towards reconciling multiple demands on coastal zones with special emphasis on developing countries. It evaluated and integrated data, tools and concepts suitable to contribute to the goals set by the World Summit for Sustainable Development in Johannesburg, such as restoring healthy fish stocks and ecosystems by 2015.

INCOFISH focused its research activities on the following issues in Integrated Coastal Zone Management (ICZM): documenting historical performance of ecosystems to deal with the 'shifting baselines' syndrome and provide sound reference points for resource restoration; providing electronic maps for all coastal species to establish authoritative species inventories and explore scenarios of global change and invasive species; creating spatial ecosystem models for the coastal systems treated in this project as a basis for understanding the resource; providing guidelines and tools for best sizing and placement of marine protected areas; researching impacts of ecotourism on coastal ecosystems and providing best-practice guidelines; identifying suitable simple indicators to promote and monitor sustainable fisheries; providing valuation of coastal ecosystem products and services resulting from different management regimes; evaluating legal instruments with regard to their usefulness for sustainable fishing in coastal zones; revisiting coastal transects as a tool for structuring and understanding multiple demands on coastal zones; and providing an archive and web portal for public access to all data and tools relevant for ICZM.

Tools and concepts resulting from INCOFISH research have been tested in real-world scenarios in several large marine ecosystems around the world. To provide for maximum synergy between work packages, all INCOFISH tools and concepts have been applied in the following four ecosystems: North and Central Gulf of California, Benguela Current, Gulf of Thailand and North Sea.

With regard to above objectives, INCOFISH has accomplished the following main achievements during its third and last year of operation:

Overall scientific output stood at 83 journal articles, 9 books, 16 book chapters, 25 reports, 39 Conference presentations, 6 posters, 53 online tools and databases, 1 Code of Conduct for Ecotourism, 3 Newsletter articles, 5 fish-rulers, and 31 media appearances.

Highlights by worckpackage are the following:

Outreach: All concepts, tools and databases produced by INCOFISH are fully available on the INCOFISH portal at [www.incofish.org](http://www.incofish.org). and attracted well over 10,000 visitors per month.

Shifting baselines: A database with historic catch & effort data has been made available online and a special edition of a journal was dedicated to the analysis of historic data sets.

Biomapping: An online atlas with standardized electronic maps for over 8,000 species (including all commercial fishes, all marine mammals, and many invertebrates) has been created, see [www.aquamaps.org](http://www.aquamaps.org). Clicking anywhere in the oceans creates a list of local species, complete with common names, scientific names, pictures and maps. Also, potentially invasive species can be shown for every spot in the Oceans. A new 'Biodiversity transects' tool allows exploring transects anywhere in the Oceans, see for example a first-ever biodiversity transect along the equator across the Indo-Pacific (Fig. 1

below). In collaboration with the workpackage on marine protected areas (MPAs) a tool for best placement of MPAs was developed.

Ecosystem modelling: 153 existing ecosystem models from all around the world were standardized and made available online. In addition, 11 new ecosystem models were created to assist in better understanding of aquatic food webs and best sizing and siting of MPAs.

MPAs: In collaboration with WP Biomapping, a new online tool has been developed that facilitates selection of best MPA placement based on the selection of species that are to be protected.

Coastal transects: An advanced version of the CTAM online tool has been developed for visualization and analysis of flows of labor, cash or governance in the coastal zone. This tool has been applied to 400 bays in 35 countries worldwide.

Simple indicators: In the context of the campaign against fishing of immature fishes, fish rulers have been launched in Peru, Senegal and the Philippines. Senegal has meanwhile adopted new minimum legal landing sizes above size at first maturity, and the Philippines has started an official assessment towards the same goal. Also, an international seafood guide for mobile phone was released, accompanied by intensive media coverage. Finally, contact with large retailers was established in Germany and a Retailer's Seafood Guide was produced.

Valuation of ecosystem services: Highlights of this workpackage are the many scientific publications with uptake by the media and related impact, culminating in a briefing of the G77 group of developing countries at the United Nations Meeting on 3rd October 2007 on how to reach and maintain sustainable fisheries.

Impact of Ecotourism: A Code of Conduct and an evaluation tool was established and made available online. Both have been adopted by a large network of marine parks, the Marine Corridor of the Eastern Tropical Pacific (CMAR).

Legal Instruments: In-depth analyses of the legal framework applying to fisheries in Europe and in six developing countries were completed, leading to a new 'legal clinic' approach towards solving the many apparent contradictions and shortcomings. To assure wide availability, these results are being published in a book distributed by IUCN.

In summary, INCOFISH outputs have exceeded expectations in most areas and media impact and uptake by NGOs and Governments has been strong. New areas of research have been opened and will be followed up in future projects.

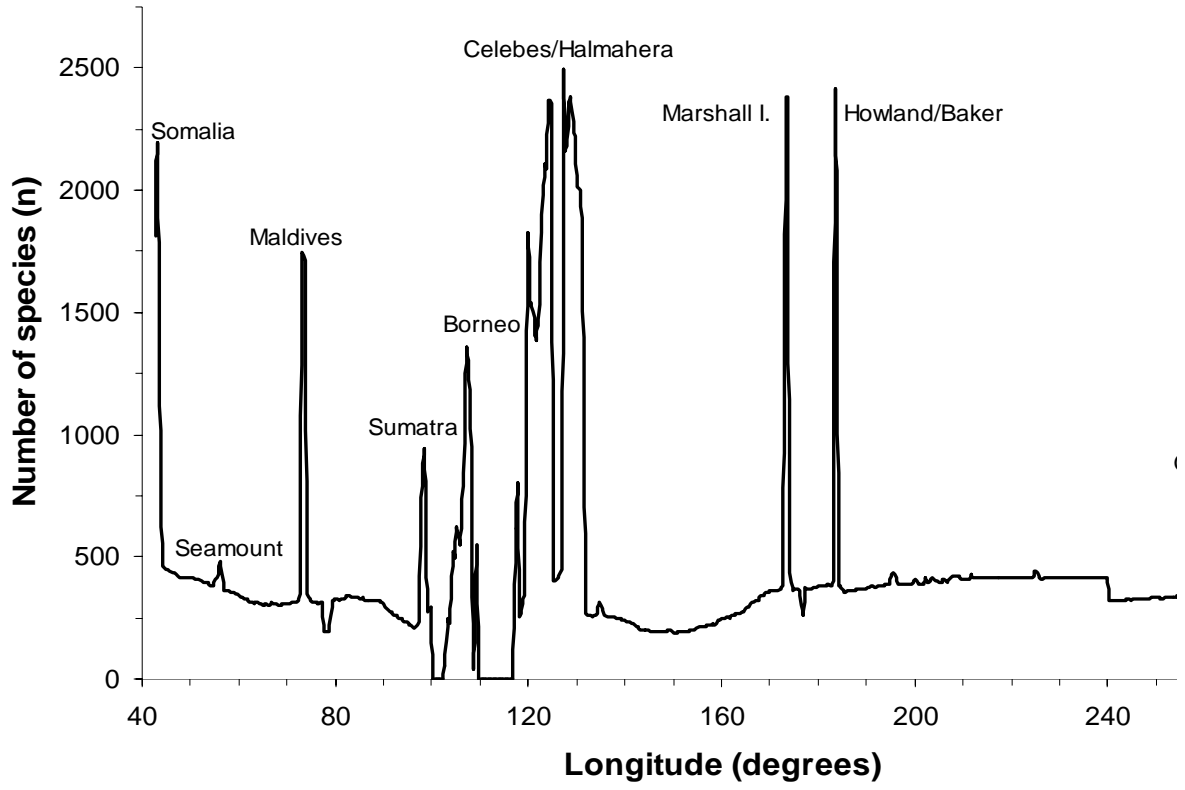


Figure 1: Preliminary species richness transect across the Indo-Pacific Ocean along the equator.

### The Consortium

The INCOFISH consortium is composed of 35 academy, private non-commercial and private commercial partners (12 European, 12 Latin American, 6 Asian, 5 African) from 22 countries worldwide, see list below.

#### List of INCOFISH participants (organisation name, country):

- Leibniz Institut für Meereswissenschaften (IfM-GEOMAR), Germany
- Ações Para Preservação dos Recursos Naturais e Desenvolvimento Economico Racional (APRENDER), Brazil
- Empresa de Consultoria y Inversiones (CABAL, S.A.), Nicaragua
- Coastal Development Centre (CDC), Thailand
- Charles Darwin Foundation for the Galapagos Islands (CDF), Ecuador
- The Centre for Environment, Fisheries and Aquaculture Science (CEFAS), United Kingdom
- Centro Interdisciplinario de Ciencias Marinas del IPN (CICIMAR), Mexico
- Centro de Referencia em Informação Ambiental (CRIA), Brazil
- Centre de Recherches Oceanographiques de Dakar Thiaroye (CRODT), Senegal
- Direccion Nacional de Recursos Acuaticos (DINARA), Uruguay
- East China Normal University (ECNU), China
- Universität Bremen (Uni Bremen), Germany
- FishBase Information and Research Group, Inc. (FIN), Philippines
- Instituto del Mar del Peru (IMARPE), Peru
- International Governance Solutions Ltd. (IGS), United Kingdom
- Università degli Studi di Padova (UNIPAD), Italy
- Marine and Coastal Management Branch of Environmental Affairs and Tourism (MCM DEAT), South Africa
- Estonian Marine Institute (MEI), Estonia
- University of Hull, Maritime Historical Studies Centre (UHULL), United Kingdom
- Nanjing Institute of Environmental Sciences (NIES), China
- Naturhistoriska Riksmuseet (NRM), Sweden
- PRIMEX Foundation for the Alternative Management of the Environment (PRIMEX-FAME), Philippines
- Prince of Songkla University (PSU), Thailand
- Fundacion Malpelo y Otros Ecosistemas Marinos (Fundacion Malpelo), Colombia
- Universidad Nacional de Colombia (UNAL), Colombia
- University of Namibia (UNAM), Namibia
- Universidad de Concepcion (Uni Concepcion), Chile
- The University of Newcastle upon Tyne (UNEW), United Kingdom
- Universitetet i Tromsø (UiT), Norway
- University of the Western Cape (UWC), South Africa
- The University Court of the University of Aberdeen (UNIABDN), United Kingdom
- Corporacion de Promocion Universitaria /Universidad San Francisco de Quito (USFQ), Ecuador
- Kenya Sea Turtle Conservation Committee (KESCOM), Kenya
- Instituto Oceanográfico da Universidade de Sao Paulo, Brazil
- Roskilde Universitetscenter (RUC), Denmark

Extended information on project structure and results are available at [www.incofish.org](http://www.incofish.org).

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## **Section 1 – Project objectives and major achievements during the reporting period**

### ***Objectives***

The goal of INCOFISH was to conduct specifically targeted strategic research suitable to contribute to the goals set by the World Summit for Sustainable Development in Johannesburg, such as restoring healthy fish stocks and ecosystems by 2015.

The scientific and technological objectives of INCOFISH are best grouped in relation to the 11 work packages and can then be summarised as follows:

#### ***Overcome the 'Shifting Baseline' Syndrome (WP2)***

To resolve the “Shifting Baseline” Syndrome in Fisheries, i.e., the fact that each generation has an increasingly distorted view of what constitutes healthy fish stocks, historical data on catch and effort, biomasses, length-frequencies, maximum sizes, size and age at maturity, growth rates, natural mortality, etc. are being assembled, collated and analysed to establish baselines against which the current status and restoration goals of key aquatic resources can be assessed. Likewise, historical data on catch and effort, production, biomasses, predator-prey interactions, flows, and habitat change will be assembled, collated and analysed to establish baselines against which the current status and restoration goals of selected marine ecosystems can be assessed.

#### ***Provide Authoritative Species Inventories (WP3)***

INCOFISH uses biogeographic niche modelling to define the preferred environmental conditions for key marine coastal-zone species. This specific niche information is then being used to create standardised electronic maps of predicted distributions for all coastal zone species. In addition, the niche circumscription of species of interest is being connected with physical and bio-geochemical models thus producing dynamic distribution maps driven by models of forcing functions. This allows exploring changes in distribution of species resulting from natural and anthropogenic environmental changes. The maps and related tools are being made freely available on the Internet with an easy-to-use interface.

#### ***Provide Ecosystem Models (WP4)***

INCOFISH will provide multispecies models as well as the underlying data for more than 10 strategically selected large marine ecosystems with a focus on Asia, Africa and South-America. These models draw on INCOFISH data such as species inventories and biomasses; in return they provide crucial inputs for sizing and siting of protected areas.

#### ***Assist in Sizing and Siting of Marine Protected Areas (WP5)***

INCOFISH will provide best-practice concepts as well as tools for improved planning of MPAs, with a view of reconciling conflicting demands.

#### ***Provide Framework and Tools for Analysis of Interactions and Flows in the Coastal Zone (WP6)***

INCOFISH is developing a framework for compilation and analysis of data relevant to the understanding of interactions, impacts and flows in the coastal zone from mountains to the continental shelf. The ultimate goal is to provide coastal

managers with a decision-making framework and communication tool for integrated coastal management.

### ***Provide Simple Indicators for Sustainable Resource Use (WP7)***

INCOFISH will provide indicators such as degree of resilience to exploitation or natural disturbances. We will focus on simple indicators that allow participation of the public in resource management and that have the potential to end overfishing.

### ***Valuation of Coastal Ecosystem Services (WP8)***

INCOFISH is using state of the art methodologies to assign values to products and services of coastal ecosystems. This will then allow valuation of sustainable versus unsustainable management regimes and thus provide the public and politicians with the information needed to combat unsustainable management.

### ***Evaluate Pros and Cons of Ecotourism (WP9)***

INCOFISH is analysing benefits and problems associated with ecotourism in selected MPAs and is producing best-practice guidelines for what may be termed 'sustainable ecotourism.'

### ***Review Legal Instruments Relevant for Sustainable Coastal Resource Use (WP10)***

INCOFISH is analysing and evaluating the legal framework relevant for sustainable resource use, taking account of legal structures that may increase pressure on resources, relate to the management of the resource, or provide for sharing of benefits from the resource.

### ***Provide Access to Relevant Data, Tools, and Concepts (WP1)***

Data, tools, and concepts created by INCOFISH or otherwise relevant to integrated coastal zone management are being made accessible through a user-friendly web portal.

### ***Bringing it All Together (WP11)***

A combination of accommodating coordination with strong leadership ensures that the components of INCOFISH described above come together and form a comprehensive package with the potential to improve integrated coastal zone management.

## ***Major achievements during the reporting period***

The overall goals and objectives of INCOFISH as laid out above were ambitious but not unrealistic. During the third and last year of INCOFISH the following main achievements can be highlighted:

WP2 'Shifting Baselines': The Highlight of this period were the various historic data sets that became available online, and nine scientific papers published or in press.

WP3 'Biomapping': Highlights of the reporting period are standardized maps for over 8,000 species and a variety of tools such as the MPA planning tool, the biodiversity transects tools, the invasive species tool, and predicted distributions for 2050.

WP4 'Ecosystem Modelling': The Highlights of the period are the completion of 11 new ecosystem models, the online publication of 153 existing ecosystem models, and the publication of over 30 scientific papers.

WP5 'MPA Sizing and Siting': Highlight is the Step-by-Step MPA planning tool developed in collaboration with WP Biomapping and available online at [www.aquamaps.org](http://www.aquamaps.org).

WP6 'Coastal Transects': Highlight of the period is successful development of the advanced (Phase II) Coastal Transect Analysis Modul (CTAM II) and its application by users to over 400 coastal areas in 35 countries.

WP7 'Simple Indicators': Main Highlights of the period are the the launching of fish rulers in Senegal and the Philippines and five additional ones for different regions along the Peruvian coastline, the mobile seafood guide, and the retailers seafood guide, all accompanied by intensive media coverage. In addition a paper was published that formally demonstrates that current catches can be obtained with up to seven times less impact on the stock and the ecosystem if fish are caught at the right size.

WP8 'Valuation of Ecosystem Services': Highlights are the many scientific publications, uptake by the media and related impact, culminating in a briefing of the G77 group of developing countries at the United Nations Meeting on 3rd October 2007 in Washington.

WP9 'Ecotourism': Highlights for the last year are the completion of a step-by-step tool to assess impact of ecotourism on marine parks, based on a Code of Conduct for marine ecotourism parks developed by WP9, and the uptake of this tool by the Association of Marine parks of the Eastern Tropical Pacific corridor (CMAR).

WP10 'Legal Instruments': Highlights are the completion of in-depth analyses of the legal framework applying to fisheries in Europe and in six developing countries, leading to a new 'legal clinic' approach towards solving the many apparent contradictions and shortcomings. To assure wide availability, these results are being published in a book distributed by IUCN.

WP1 'Outreach': All concepts, tools and databases mentioned above were made freely available through the INCOFISH portal.

WP11: 'Project Management': Highlights are the high level of scientific accomplishments and the efficient administration of a project involving 35 contractual partners in 22 countries worldwide. Meanwhile INCOFISH has been rated a 'star' project by EC officers, and a special feature on INCOFISH has been produced by EuroNews Futuris, with 22 broadcasts in 7 languages. Also, INCOFISH was one of the few projects show-cased by the Commission at the Conference on Biological Diversity in Bonn on 19 May 2008.

### ***Successful Dissemination of Knowledge***

With regard to dissemination of knowledge in the third year, INCOFISH's publication record stood at 83 journal articles, 9 books, 16 book chapters, 25 reports, 39 Conference presentations, 6 posters, 53 online tools and databases, 1 Code of Conduct for Ecotourism, 3 Newsletter articles, and 10 fish-rulers and featured in 31 media appearances.

## **Section 2 – Workpackage progress during the period**

INCOFISH work is divided into 11 WorkPackages, which are:

- WP 1 Data, Tools and Outreach
- WP 2 Shifting Baselines
- WP 3 Biomapping
- WP 4 Ecosystem Modelling
- WP 5 Marine Protected Areas
- WP 6 Coastal Transects
- WP 7 Simple Indicators for Sustainable Fisheries Management
- WP 8 Valuation of Ecosystem Products and Services
- WP 9 Ecotourism
- WP10 Legal Instruments for Fisheries Management
- WP11 Management of Consortium Activities

A review of the progress during the second year within each of the WPs follows.

**WP Number: 1****WP Name: Data, Tools and Outreach**a) Workpackage objectives and starting point of work for the reporting periodOverarching objective:

The “Data, Tools, and Outreach” workpackage provided data, tools, and Internet outreach services to the other INCOFISH workpackages,.

Specific objectives:

1. Make relevant data for ICZM available from all possible sources using modern Internet technologies.
2. Provide an archive function for ICZM data that might otherwise be lost.
3. Provide tools for analysis and visualization of data, including a 'Step-by-Step' approach to complicated interactive analyses.
4. Provide mapping tools for WP 3.
5. Provide a user-friendly one-stop Internet portal to all data, tools, models, documents and partners in the context of this project.
6. Provide an Internet discussion forum for ICZM issues open to project partners and the public, as well as links to the many existing news and discussion forums around ICZM.
7. Provide interfaces where the interested public (e.g. fishers, divers or anglers) can upload data such as observed occurrences of species in space and time.
8. Assist project partners in building their own web presence.
9. Work in integrated fashion with workpackages 2-10.

Starting point for the reporting period was: May 1, 2007. The Highlight of this reporting period are the various online tools that became available and that are described in more detail below.

b) Progress towards objectives

## Re (1)

The project portal at [www.incofish.org](http://www.incofish.org) has been under constant expansion, maintenance and development throughout the project period.

## Re (2).

Data submissions from workpackages 1, 2, 3, 4, 6, 7, 8, 9 and 10 have been uploaded to the INCOFISH server or placed in more suitable repositories, see <http://www.incofish.org/Results/Data.php>.

Several host institutions have granted permanent repositories on their institutional servers. Examples:

WP2 at UHull in UK: <http://www.hull.ac.uk/incofish/index.html>

WP4 at UBC in Canada: <http://www.ecopath.org/>

WP6 at CDC in Thailand: [http://cdc.fish.ku.ac.th/wp6/about\\_CT.htm](http://cdc.fish.ku.ac.th/wp6/about_CT.htm)

WP7 at IFM-GEOMAR in Germany: <http://seafoodguide.mobi/>

WP9 at Conservation International in Ecuador (under negotiation):

<http://www.conservation.org/FMG/Articles/Pages/08210701.aspx>

## Re (3)

During this reporting period there has been intensive work on developing tools mainly for other workpackages as well as performing maintenance and updates on existing tools. The INCOFISH tools can be reached from the INCOFISH search page: <http://www.incofish.org/tools.php>.

- WP5 MPA planning tool based on the Aquamaps environmental envelopes: [http://www.aquamaps.org/tools/aquamaps/tools/mpa\\_wizard/details.htm](http://www.aquamaps.org/tools/aquamaps/tools/mpa_wizard/details.htm)
- WP7 Retailers guide allows retailers of seafood a single interface approach to information necessary for conscious decision making in sustainable seafood trading. <http://www.incofish.org/isfg/retailersguide/>
- WP9 Ecotourism valuation step by step tool is a tool describing and implementing the process of evaluating a marine protected area on aspects of Ecotourism management and their effect on the area. The tool provides users with a rank of “Ecostars” (1-5) of the area in terms of management sustainability. The interface includes login for data discretion and cache memory functions allowing users to update their input data subsequently. [http://www.incofish.org/Workpackages/WP9/Tourism\\_Impact.php](http://www.incofish.org/Workpackages/WP9/Tourism_Impact.php)
- WP8 Ecosystem services valuation tool is a new tool with an interface to view a database on values of ecosystem services around the world. The easy to use interface includes a clickable map, database reports and links to references online. <http://www.incofish.org/Workpackages/WP8/D8.3/>
- WP1 made a new Fish-ruler, the Panukat Isda for the Philippines. It promotes sustainable fisheries management techniques and facilitates institutional collaboration over governmental borders. Earlier Peru, Senegal, Pacific East coast, Germany and the North Sea have rulers developed. They are all parts of local collaborative initiatives on promoting sustainable fisheries: <http://www.incofish.org/Workpackages/WP7/WP7Fishrulers.php>
- WP7 developed Seafoodguide.mobi, a cellphone interface for the International Seafood Guide for Internet-enabled cellphones. It includes minimum length measures for many species. <http://www.seafoodguide.mobi>
- WP6 CTAM I, Coastal Transects Analysis Model is a decision making framework and visual aid as well as a database for collection of coastal data.: <http://www.incofish.org/CTAM/default.htm>
- WP1 International Seafood guide is an information tool designed to promote consumer pressure on policy development for more sustainable fisheries. <http://www.incofish.org/isfg.php>
- WP7 Don't eat babies: This is a tool to determine the size at first maturity within a selected geographic area, to prevent stock depletions due to fishing of immature fish that have not yet spawned: <http://www.incofish.org/DontEatBabies.php>
- WP3 Aquamaps is a Mapping system displaying computed species distribution data in a map format, with layers of environmental information applied. <http://www.incofish.org/Results/Maps.php>  
Invasive exotics provides information on species that easily become invasive when transplanted into a new environment. [http://fishbase.sinica.edu.tw/Country/InvasiveExotics.php?what=both&c\\_code=l13&vp\\_aese=Adelaide%20Island](http://fishbase.sinica.edu.tw/Country/InvasiveExotics.php?what=both&c_code=l13&vp_aese=Adelaide%20Island)
- WP4 Ecopath models are developed for the Large Marine Ecosystems of the project and for further implementation of WP5 MPA management research with the help of Ecospace. <http://www.incofish.org/Workpackages/WP4/ModelsWP4.php>
- WP1/CRIAs Open Modeller is a fundamental niche modeling library, providing a uniform method for modelling distribution patterns using a variety of modeling algorithms. <http://openmodeller.sourceforge.net/>
- WP1 Outreach toolkit is developed to provide campaign and information material of the project at a glance. <http://www.incofish.org/Results/Outreacht toolkit.php>
- WP1 Presskit is developed to provide media focused project information at a glance. <http://www.incofish.org/News/Presskit.php>
- WP1 Newspages for dissemination have been developed and updated through the entire project period, including press reporting on INCOFISH: <http://www.incofish.org/News.php>

Re (4)

WP1 / CRIA has released a new openModeller version: <http://openmodeller.sourceforge.net/>

For mapCria a number of developments were carried out, new versions were released, and additional layers were made available (working with WP3) through the application speciesMapper: <http://smlink.cria.org.br/mapper>.

Re (5)

The portal was available online at [www.incofish.org](http://www.incofish.org) since May 2006. In April 2008 portal statistics stood at 13,341 visitors who downloaded 13,62 GB of information. Seafoodguide.mobi visits were 1,583. A Google search for INCOFISH stood at 38,000 pages, with 15,800 for the INCOFISH seafood guide alone and 1,150 for the “Fisch im Handy” (mobile seafood guide). Citations of INCOFISH in Google Scholar stood at 61 pages at the end of the project. Main user countries were Brazil, Canada, France, Germany, Italy, Mexico, Philippines, Singapore, South Africa, South Korea, Sweden, Thailand, Turkey, UK, USA, reflecting INCOFISH campaigns such as the fish rulers and the mobile seafood guide in Germany, but also take-up by non-INCOFISH countries (USA, Turkey, South Korea, France), and a good take-up by developing countries. After the Services page, the glossary of ICZM terms and the International sea food guide were the most popular pages.

Re (6)

The “News” pages of INCOFISH cover several subjects: An automated Google search for news on sustainable fisheries issues, direct links to newsletters of interest, and an overview of related current news. Also a press kit is available to supply the media with project information as well as a separate page with project related news, see <http://www.incofish.org/News/News.php>

The old Discussion Forum has been replaced by a modernized version adapted to current servers, see <http://www.incofish.org/discussion/upload/index.php>.

Re (7)

A photographs upload/download function has been installed at <http://www.incofish.org/Forum/Photographs.php>

Also, data or files can be uploaded at

<http://www.incofish.org/Forum/UpForm.php>

Although this service was open to the public, it was mainly used by project participants.

Re (8)

Individual web pages have been developed for all Workpackages containing their most prominent outputs as well as contacts and downloadable data.

<http://www.incofish.org/Workpackages/Workpackages.php>

<http://www.incofish.org/Workpackages/WP1/WP1Downloads.php>

<http://www.incofish.org/Workpackages/WP3/WP3Downloads.php>

<http://www.incofish.org/Workpackages/WP4/WP4Downloads.php>

<http://www.incofish.org/Workpackages/WP5/WP5Downloads.php>

<http://www.incofish.org/Workpackages/WP6/WP6Downloads.php>

<http://www.incofish.org/Workpackages/WP7/WP7Downloads.php>

<http://www.incofish.org/Workpackages/WP8/WP8Downloads.php>

<http://www.incofish.org/Workpackages/WP9/WP9Downloads.php>

<http://www.incofish.org/Workpackages/WP10/WP10Downloads.php>

<http://www.incofish.org/Workpackages/WP11/WP11Downloads.php>

Re (9)

In addition to activities outlined above, WP1 participated in three workshops of WP2 and in a miniworkshop of WP3; presented the INCOFISH portal at Coastal Zone '07 conference together with WP6 and WP8; together with WP7 presented the seafoodguide.mobi at the Seafood Summit '08; held a mini workshop with WP9; participated in the 4<sup>th</sup> Project Steering Committee meeting ; participated in the launching of the Philippine version of the fish ruler (Panukat Isda Event) together with WP8 and WP11.

The Coastal Zone Management Portal

**Species Information Service** contains [input] Search Advanced search  
Enter common name (e.g. swordfish):

**International Seafood Guide** [input] Search Advanced search  
Select common name (e.g. swordfish):

**Retailers Seafood Guide**  
Common Name: [input] (e.g. Atlantic cod) Search  
Scientific Name: [input] (e.g. Gadus morhua) Search

**Don't Eat Babies** [input] Search Advanced search  
Select Country:

**ICZM Glossaries** [input] Search  
Enter term (e.g. abiotic): ABCDEFGHIJKLMNOPQRSTUVWXYZ

**Tools**  
Please select topic:

- Species Information Service
- AquaMaps
- Fish Ruler
- Don't Eat Babies
- Preferred Algae/Plants of Herbivorous Fishes
- Enter Coastal transects Analysis Model, CTAM
- Shifting Baseline
- Valuation of ecosystem services
- Tourism Impact
- FAO aquaculture
- Catch analysis
- ICES catch
- Fish statistics
- Invasiveness
- Marine catches
- International Seafood Guide
- Trophic pyramids
- Ecopath parameters
- Fish Identification
- Fish Disease diagnosis
- Maturity
- ISSCAAP Troph
- ECOPATH Models

**Information by Ecosystem** [input]  
Select ecosystem and topic:

- All fishes
- Point data
- Ecopath parameters
- Ecosystem info
- Resilience of fishes
- Identification
- Trophic pyramids
- Species Ecology Matrix
- Identification keys

**Information by Country** [input]  
Select country and topic:

<b>Biodiversity</b>	<b>Uses</b>	<b>Tools</b>	<b>Miscellaneous</b>
<input type="radio"/> All Fishes <input type="radio"/> Fresh water <input type="radio"/> Marine <input type="radio"/> Introduced <input type="radio"/> Endemic <input type="radio"/> Threatened <input type="radio"/> Dangerous <input type="radio"/> Reef-associated <input type="radio"/> Pelagic <input type="radio"/> Deep-water	<input type="radio"/> Commercial <input type="radio"/> Aquaculture <input type="radio"/> Aquarium trade <input type="radio"/> Invasive exotics <input type="radio"/> Game fishes <input type="radio"/> FAO aquaculture <input type="radio"/> FAO catches <input type="radio"/> ICES catch <input type="radio"/> SAUP catch	<input type="radio"/> Identification <input type="radio"/> Identification keys <input type="radio"/> Field guide <input type="radio"/> Occurrences <input type="radio"/> Type localities <input type="radio"/> References <input type="radio"/> Ecopath data <input type="radio"/> Species Ecology Matrix	<input type="radio"/> Country info <input type="radio"/> FAO profile <input type="radio"/> ReefBase profile <input type="radio"/> Treaties & Conv. <input type="radio"/> Fish stamps <input type="radio"/> Public aquariums <input type="radio"/> MPA database <input type="radio"/> Spawning aggregation

**Annotated ICZM Bibliography**

Topic: [input]  
 Sub Topic: [input]  
 Author: [input]  
 Title: [input]  
 Source: [input]  
 Year: [input] (e.g yyyy)  
 Workpackage: [input]  
 Ref. no.: [input] (e.g. 32 or 32, 123, 2700)

[View all Annotated ICZM bibliography](#)

[input] Search [input] Clear

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Figure 2.1: The “Services” page on the INCOFISH portal.

c) Work performed by each contractor in WP1 during the reporting period

FIN

See above under b)

CRIA

has developed Mapping tools for WP3, the open Modeller was used for testing Aquamaps on desktop. In the case of ecological niche modeling, the algorithm AquaMaps was implemented for openModeller. This implementation was not made public as it is still being tested.

d) Deviations from the workprogram (if any), and corrective actions taken/suggested

No deviations from the work programme are to be reported.

e) Deliverables and Milestones

Lists of deliverables and milestones with indication of progress are available in Tables S2.1 and S2.2, respectively.

f) Dissemination activities during the reporting period

WP1 Overview table

Planned/ actual dates	Type	Type of audience	Countries addressed	Audience	Partner responsible /involved
2005-2008	Website <a href="#">INCOFISH portal</a>	Public, Research	International	10 000	WP1, WP11
2005-2008	Direct e-mailing	INCOFISH partners	Global	50	All WPs
May-07	Press release <a href="#">CRIA Mapping tools</a>	Media, Public, Research	International	4000	WP1, CRIA
May-07	Advertisement <a href="#">Parliament Magazine</a> <a href="#">Advertorial</a> <a href="#">CTAM</a>	Media, EU Governance, EU Commission, EU Parliament	EU	200	WP1, WP11, WP7
May-07	Event <a href="#">Fishruler Senegal</a>	Public, resource managers, Govt.	Senegal	>700	WP1, WP7, WWF
Jul-07	Conference <a href="#">CZ'07</a> <a href="#">CTAM II</a>	Public, Research	N & M America	200	WP1, WP6, WP8
Jul-07	Exhibition CZ '07 <a href="#">CTAM</a> <a href="#">INCOFISH Poster</a>	Media, Public, Research	N & M America	200	WP1, WP6, WP9
Nov-07	Press release <a href="#">Shifting Baselines</a>	Media, Public, Research, NGO	International	1 Million	WP, WP2, CoML
Nov-07	Conference <a href="#">CoML '07</a> <a href="#">Backflash files</a> <a href="#">INCOFISH Poster</a>	Media, Public, Research, NGO	International	200	WP, WP2, CoML
Dec-07	Press release <a href="#">Fisch im Handy</a>	Media, Public, Industry, Research, NGO, Govt.	Germany	1 Million	WP1, WP7
Jan-08	Press release <a href="#">Seafoodguide.mobi</a>	Media, Public, Industry, Research, NGO, Govt.	International	1 Million	WP1, WP7

Jan-08	Event <a href="#">Seafood Summit '08</a> <a href="#">Seafoodguide.mobi</a> <a href="#">Media coverage</a>	Media, Donors, Industry; Seafood prod. NGOs, Research	International	>250	WP1, Seafood Choices alliance
Mar-08	Advertorial <a href="#">Parliament Magazine</a> <a href="#">Project website</a>	Media, EU Governance, EU Commission, EU Parliament	EU	200	WP1, WP11
Mar-08	Advertorial <a href="#">Parliament Magazine</a> <a href="#">Seafoodguide.mobi</a>	Media, EU Governance, EU Commission, EU Parliament	EU	200	WP1, WP11
Mar-08	Press release <a href="#">Panukat Isda</a>	Media, Public, Research, Resource managers, Govt. NGO, LGU	EU, Philippines	4000	WP1, FIN
Mar-08	Press conference <a href="#">Panukat Isda</a>	National Media	Philippines	25	WP1, FIN
Mar-08	Exhibition Panukat Isda; <a href="#">INCOFISH tools</a>	Public, Research, Resource managers, Govt. NGO, LGU	Philippines	100	WP1, WP7, FIN, WFC PO, BFAR, CI, WWF
Apr-08	Workshop WWF, Panukat Isda	Research, NGO, LGU	Philippines	50	WP1, WP7, FIN, WFC PO, WWF
Apr-08	Panukat Isda campaign, CI	Research, NGO, LGU	Philippines	250	WP1, WP7, FIN, WFC PO, CI
Apr-08	<a href="#">Training workshop</a> <a href="#">BAS</a>	Research, NGO, LGU	Philippines	20	WP1, WP8, NFRDI, BAS

### WP1 Publications

[Pablico, G.T., N. Bailly, R. Froese and C. Elloran. 2007. Seaweeds Preferred by Herbivorous Fishes. Journal of Applied Phycology.](#)

[Casal, C.M.V. 2006. Global Documentation of Fish Introductions: the Growing Crisis and Recommendations for Action. Biological Invasions. 8\(1\): 3-11.](#)

Incofish portal at [www.incofish.org](http://www.incofish.org). Online publication.

See Annex I and II below for summary representations of dissemination activities including all workpackages.

<b>WP Number: 2</b>	<b>WP Name: Shifting Baselines</b>
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a) Workpackage objectives and starting point of work for the reporting period

Overarching objective:

To examine the patterns of long term change in selected coastal ecosystems and thereby establish targets for the restoration and sustainable use of living marine resources.

Specific objectives:

1. Identification, validation and assembly of historical data (e.g. biomass, mean size, maturity, fecundity) relating to key aquatic resources in selected large marine ecosystems (LMEs);
2. Collation, analysis and dissemination of the historical data collected and processed in (1);
3. Establish baselines against which the current status of aquatic resources and LMEs can be evaluated and restoration goals can be set.

Work for this reporting period commenced in month 25 (1 May, 2007).

Status of Work, as of 1 May 2007

(i) *Scope:* WP2 partners examined selected species and time periods in ten large marine ecosystems (LMEs) as follows:

<b>LME</b>	<b>Species</b>	<b>Period</b>
Baltic Sea	all, especially herring	1752-2000
Benguela	all, especially snoek	1917-2001
Caribbean	snappers, sharks, rays	1970-2005
Celtic-Biscay Shelf	herring, haddock	1960-2005
East Central Australian Shelf	john dory, mackerel, skate	1918-1957
Gulf of Thailand	all species	1950-2005
Humboldt Current	demersal species	1950-2005
North Sea	all, especially herring & haddock	1752-2000
Pacific Central	sea cucumber, lobster	1960-2005
South East Australian Shelf	tiger flathead, john dory, mackerel, skate	1918-1957

(ii) *Research Activities:* during the reporting period WP2 partners engaged in a series of research activities related to the objectives of the workpackage. See under b) below for a more detailed description by WP partner.

(iii) *Publications:* During the reporting period 11 papers were published or are in press and three were submitted to scientific journals by WP2 members.

(iv) *Data Management*

The WP2 website and database were designed, launched and maintained online in collaboration with WP1 "Data, Tools, and Outreach" (<http://www.hull.ac.uk/incofish>).

On 1 May 2007, the database was under development, with three active datasets and draft supporting documentation and metadata submitted by WP2 partners being appraised, revised, tested and entered into the WP2 data framework. By the end of the

period, data were made available for inclusion in an online toolset jointly developed with WP1 as an outreach and practical search tool for data research.

#### b) Progress towards objectives

Re (1): Having identified the specific LMEs listed in section 1a(i), secondary datasets from the Baltic Sea and North Sea were included to complement the primary datasets. The requirement for at least ten different LMEs to be identified was met. Objective 1 has been attained.

Re (2): The WP2 partners analysed the historical data they collated in respect of the selected species and LMEs and compiled this data into specified, flat table datasets. The data was formatted into standard Microsoft Excel™, HTML and CSV files and posted on the INCOFISH WP2 Data Pages website (<http://www.hull.ac.uk/incofish>), developed by UHULL in conjunction with colleagues in WP1.

Supporting Documentation and Metadata files were submitted by each WP2 partner. These files were edited by the WP leader and made available for dissemination via the INCOFISH WP2 Data Pages website. An Internet Search Tool that will drive the WP2 database search engine was developed in collaboration with WP1. The toolset was launched in its beta test phase at the WP2 2<sup>nd</sup> Workshop (July 2007, Galapagos) in July 2007. Following further developments and adjustments, it has been launched by the "Data Tools and Outreach" team (Workpackage 1) in April 2008. Objective 2 has been attained.

Re (3): The WP2 research effort has established a series of baselines and restoration goals, which will form the basis of a journal article, currently in preparation. Objective 3 has been attained.

#### c) Work performed by each contractor in WP2 during the reporting period.

##### CDF

Colleagues collated and/or extrapolated catch, effort and biological data relating to sea cucumber, lobster and pelagic fisheries, 1997-2005. Questionnaires to capture data on catch and effort rates, as well as traditional ecological knowledge, were distributed to fishermen, many of whom were subsequently interviewed. A dataset and supporting documentation were compiled and edited.

Over 200 interviews with local fishermen were completed on Santa Cruz, San Cristóbal and Isabela islands, Galapagos. The information was combined with the scientific information previously collated, and used to evaluate the status of the Galapagos fisheries.

A total of 6341 records was provided to form the basis of Dataset 54: M. Castrejon & J. Moreno, 'Galapagos Marine Reserve, Ecuador', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)).

Supporting Documentation and Metadata was provided to accompany the dataset: M. Castrejon & J. Moreno, 'INCOFISH Dataset 54: Galapagos Marine Reserve, Ecuador, Supporting Documentation', D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)).

Hosted and participated in the 2<sup>nd</sup> WP2 Workshop in the Galapagos (July 2007).

##### CEFAS

Progressed and developed research into catch, effort and biological data relating to UK North Sea demersal fisheries, 1920-1997, as well as reviewing North Sea Fisheries Landings and Railway Records: Landings by Port 1886-1902.

Produced two datasets with a total of 907 records that were submitted as: Dataset 56: J. Pinnegar, 'North Sea Demersal Fish', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)) and Dataset 62: J. Pinnegar, 'North Sea Fisheries Landings and Railway Records', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)).

Supporting Documentation and Metadata was provided to accompany the dataset: J Pinnegar, 'INCOFISH Dataset 56: North Sea Demersal Fish, Supporting Documentation', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)).

CEFAS have primarily been engaged in collating fisheries catch data for the North Sea spanning the period 1878 to 2005. Time-series have been assembled based on ICES paper records (Bulletin Statistique) for the period 1903-1972; additional UK national and European data have been computerised for the period 1878-1902 (official statistics and railway inventories) and these have been combined with recent fisheries data (1973 onwards) which are available in electronic form.

Participated in the 2<sup>nd</sup> WP2 Workshop in the Galapagos (July 2007).

### IMARPE

A database for four important demersal species, hake, croaker, seabass and searobin of the Humboldt Current LME has been finished using data available in IMARPE and including time-series of landings, length-frequencies, effort and catch per unit of effort from different ports.

A total of 6449 records was provided to form the basis of Dataset 55: M. Ballón, C. Wosnitza-Mendo, R. Guevara-Carrasco and C. Benites, 'Peru, South-east Pacific', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)).

Supporting Documentation and Metadata was provided to accompany the dataset: M. Ballón, C. Wosnitza-Mendo, R. Guevara-Carrasco and C. Benites, 'INCOFISH Dataset 55: Peru, South-east Pacific, Supporting Documentation', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)).

IMARPE used the WP 2 database in order to compare the series of mean lengths of four demersal species with changes in mean length-at-maturity for WP 7; the aim was to investigate if size-based metrics can be used as simple common indicators for a commercial community. Use of WP 2 database in order to compare mean length of hake series with official (legal) minimum length in catch.

In conjunction with UHULL (Data Management) and WP1 produced a "BackFlash" highlight feature that promotes the shifting baseline concept ([http://incofish.org/Workpackages/WP2/backflash\\_spatial.php](http://incofish.org/Workpackages/WP2/backflash_spatial.php)).

Participated in the 2<sup>nd</sup> WP2 Workshop in the Galapagos (July 2007).

Participated in mini-workshop held in Vigo, Spain, in April 2008.

### MEI

Following the collection, collation and submission of Customs House data (data collected from the Baltic port of Pärnu customs books), data collected from the Baltic port city of Narva customs books from 1662-1703 was completed and submitted as a secondary dataset.

Produced two datasets with a total of 5061 records that were submitted as:

- Dataset 57: K. Kaju, 'Estonian Fisheries: Pärnu City Customs Records', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)).

- Dataset 65: K. Kaju, 'Estonian Fisheries: Narva City Customs Records', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish))

Supporting Documentation and Metadata was provided to accompany the dataset: K. Kaju, 'INCOFISH WP2 Dataset 59: Estonian Fisheries: Pärnu City Customs Records, Supporting Documentation', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)).

A special volume of Fisheries Research devoted to fisheries history of the Baltic, North, White, and Barents seas was published in November 2007.

Participated in the 2<sup>nd</sup> WP2 Workshop in the Galapagos (July 2007).

## RUC

In addition to data relating to catches & effort in Limfjord eel and herring fisheries already submitted, data collation and interpretation was completed for 18<sup>th</sup>-20<sup>th</sup> century oyster fisheries in Danish waters, and 18th-19th century oyster fisheries in Aalbækbugten, Kattegat, submitted as secondary datasets.

A total of 7585 records was provided to form the basis of three datasets as follows:

- Dataset 51: B. Poulsen, 'Limfjord Fisheries', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish))
- Dataset 60: Anne Lif Lund Jacobsen (Anne Husum Marboe ed.), 'Limfjord Catch Data 1890-1925', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish))
- Dataset 64: B. Poulsen, 'Limfjord Pound net fishers', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish))

Supporting Documentation and Metadata was provided to accompany the datasets as follows:

- Poulsen, B, 'INCOFISH WP2 Dataset 51: Limfjord Fisheries, Supporting Documentation', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish))
- Anne Lif Lund Jacobsen, 'INCOFISH Dataset 60: Limfjord catch data, 1890-1925, Supporting Documentation', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish))

In conjunction with UHULL (Data Management) and WP1 produced a "BackFlash" highlight feature that promotes the shifting baseline concept ([http://incofish.org/Workpackages/WP2/backflash\\_diversity.php](http://incofish.org/Workpackages/WP2/backflash_diversity.php)).

Participated in the 2<sup>nd</sup> WP2 Workshop in the Galapagos (July 2007).

Participated in mini-workshop held in Vigo, Spain, in April 2008.

## UHULL

Referenced and collated data from Australian trawl catch records to produce 2 datasets relating to the South East Australian Shelf and East Central Australian Shelf LMEs. Collated data from Statistical Bulletins on South African and Namibian fisheries to produce a Benguela Current LME fisheries dataset.

A total of 5884 records was provided to form the basis of three datasets as follows:

- Dataset 53: J.H. Nicholls, 'South East Australia Trawl Fisheries', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish))
- Dataset 58: J.H. Nicholls, 'East Central Australia Trawl Fisheries', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish))

- Dataset 64: J.H. Nicholls, 'Benguela Southern African Fisheries 1917-2001', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish))

Supporting Documentation and Metadata was provided to accompany the datasets as follows:

- J.H. Nicholls, 'INCOFISH WP2 Dataset 53: South East Australia Trawl Fisheries, Supporting Documentation', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish))
- J.H. Nicholls, 'INCOFISH WP2 Dataset 58: East Central Australia Trawl Fisheries, Supporting Documentation', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish))
- J.H. Nicholls, 'INCOFISH WP2 Dataset 63: Benguela Southern African Fisheries 1917-2001', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish))

In conjunction with WP1 an online search engine was developed and beta tested to produce an interactive Toolset including mapping, graphic and table data outputs.

In conjunction with IMARPE, RUC, UNIABDN, UNAL and WP1 produced several "BackFlash" highlight feature files that promote the shifting baseline concept (<http://www.hull.ac.uk/incofish/BackflashAnimations/BackflashAnimations.htm>).

Organised and led the 2<sup>nd</sup> WP2 Workshop in the Galapagos (July 2007).

Organised, led and hosted the mini-workshop held in Hull in October 2007

Co-organised and led the mini-workshop held in Vigo, Spain, April 2008.

### UNAL

Information on cruises, CPUE, and documents has been collected. This process involved interviews and surveys among local fishermen and documentary investigation. The process was concluded and resulted in the collation catch data collected during scientific cruises in the northern Colombian Caribbean Sea, 1970-2001.

A total of 1342 records was provided to form the basis of Dataset 57: C.B. Garcia & L.O. Duarte, 'Colombian Caribbean Sea', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)).

Supporting Documentation and Metadata was provided to accompany the dataset: C.B. Garcia & L.O. Duarte, 'INCOFISH Dataset 57: Colombian Caribbean Sea, Supporting Documentation', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)).

In conjunction with UHULL (Data Management) and WP1 produced a "BackFlash" highlight feature that promotes the shifting baseline concept ([http://incofish.org/Workpackages/WP2/backflash\\_abundance.php](http://incofish.org/Workpackages/WP2/backflash_abundance.php)).

For logistical reasons, UNAL were unable to attend the WP2 2<sup>nd</sup> Workshop in the Galapagos (July 2007). A detailed presentation and report, prepared by UNAL was presented on their behalf by the WP2 leader at the workshop.

### UNIABDN

Progressed and developed research into catch data for herring, haddock, and Norway lobster landings between 1893 and 2005 in the west of Scotland fisheries.

Produced a total of 277 records that were submitted to form the basis of Dataset 52: C. Pita & G. Pierce, 'North-west Scotland Fisheries', in D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)).

Supporting Documentation and Metadata was provided to accompany the dataset: C. Pita & G. Pierce, 'INCOFISH Dataset 52: North-west Scotland Fisheries, Supporting Documentation', D.J. Starkey & J.H. Nicholls (comp.) *Shifting Baselines: INCOFISH WP2 Data Pages* ([www.hull.ac.uk/incofish](http://www.hull.ac.uk/incofish)).

Participated in the 2<sup>nd</sup> WP2 Workshop in the Galapagos (July 2007).

Co-organised the mini-workshop held in Vigo, Spain, April 2008.

d) Deviations from the workprogram and corrective actions taken/suggested:

None

e) Deliverables and Milestones

WP2 completed all deliverables by their due dates. Secondary datasets and ancillary data pertaining to long-term patterns of change in fish stocks were also constructed and made available, but were not specified as deliverables.

Deliverables and milestones of WP2 with indication of progress are listed in Tables S2.1 and S2.2, respectively.

f) Dissemination activities during the reporting period

WP2 Overview table

Actual Date	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
Apr 2007	COLACMAR Conference, Brazil	International scientists and managers	South America	200	UNAL
Sep 2007	MPA Symposium, Spain	International scientists and managers	Europe	200	UNIABDN
Nov 2007	Census of Marine Life All Program Meeting Auckland, New Zealand	International scientists General public	global	1500	UHULL WP1
Dec 2007	WP2 Project website ( <a href="http://www.hull.ac.uk/incofish">http://www.hull.ac.uk/incofish</a> )	General public, researchers, scientists and managers	global		UHULL
Feb 2008	WP2 Flyers and posters	General public, maritime history students	Maritime Historical Studies Centre, Hull, UK	200+	UHULL WP1
April 2008	Internet Online Toolset launch	Research scientists, marine biologists and managers	global	global	UHULL WP1

**WP2 Publications**

Bager, M, and M. K. Søndergaard, 2007. The Danish Baltic Sea fisheries c.1875-1911. *Fisheries Research* 87 (2-3).

- Duarte, L.O. In press. Status of coastal ecosystems in Colombia: Bottom-up vs. Top-down Pressures, in *Coastal Ecosystems: Hazards, Management and Rehabilitation* (NAM S&T Centre).
- Eero, M, B. R. MacKenzie and H. Karlsdottir, 2007. Dynamics of international fisheries for cod (*Gadus gaumiga*, *R. morhua*) in the Eastern Baltic Sea during 1880-1938. *Fisheries Research* 87 (2-3).
- Enghoff, I. B., B. R. MacKenzie and E. E. Nielsen, 2007. The Danish fish fauna during the warm Atlantic period (ca. 7000 - 3900 BC): Forerunner of Future Changes?' *Fisheries Research*, 87 (2-3).
- García, C. B., L. O. Duarte, J. Altamar and L. M. Manjarrés, 2007. Demersal fish density in the upwelling ecosystem off Colombia, Caribbean Sea: Historic outlook. *Fisheries Research* 85 (1-2), p. 68-73.
- MacKenzie, B. R. and R. A. Myers, 2007. The development of the northern European fishery for north Atlantic bluefin tuna (*Thunnus thynnus*) during 1900-1950. *Fisheries Research* 87 (2-3).
- Pinnegar, J. K., T. Hutton and V. Placenti, 2006. What relative seafood prices can tell us about the status of stocks. *Fish and Fisheries* 7, p. 219-226.
- Pinnegar, J. K. and G. H. Engelhard, 2007. The "shifting baseline" phenomenon: a global perspective. *Reviews in Fish Biology & Fisheries*, (online 2007, doi: 10.1007/s11160-007-9058-6).
- Poulsen, B. and P. Holm, 2007. A fishery of historical magnitude. Reconstructing the 17th-19th centuries catches of herring, eel, whitefish and plaice in Limfjorden. *Denmark's Fisheries Research*, 87 (2-3).
- Poulsen, R. , A. Cooper and P. Holm, 2007. The importance of historical baselines to fisheries management - an abundance estimate of ling (*Molva molva*) and cod (*Gadus morhua*) the northeastern North Sea, 1872. *Fisheries Research* 87 (2-3).
- Starkey, D. J. (ed.), in press. *A History of the North Atlantic Fisheries from Early Times* (Bremerhaven, DSM).
- Tam, J., M. H. Taylor, R. M. Ballón, C. Wosnitza-Mendo, and V. Blaskovic. Trophic modelling of the Northern Humboldt Current Ecosystem, Part I: Comparing trophic linkages under La Niña and El Niño conditions. Submitted to *Progress in Oceanography*.
- Taylor, M. H., J. Tam, R. M. Ballón, C. Wosnitza-Mendo and V. Blaskovic. Trophic modelling of the Northern Humboldt Current Ecosystem, Part II: Elucidating ecosystem dynamics from 1995-2004 with a focus on the impact of ENSO. Submitted to *Progress in Oceanography*.
- Pita, C., D. J. Starkey, and G. Pierce, in prep. Sliding Scales: The Management of Long-Term Change in Fisheries and Fish Stocks.

See Annex I and II below for summary representations of dissemination activities including all workpackages.

**WP Number: 3****WP Name: Biomapping**a) Workpackage objectives and starting point of work for the reporting periodOverarching objective:

The “Biomapping” workpackage will provide authoritative knowledge about the occurrence of marine species in space and time and in response to climate change.

Specific objectives:

1. Provide access to point data from all available sources (collections, surveys, observations) and from historical times to present for all organisms occurring in areas covered by this project;
2. Combine data from 1) with relevant environmental parameters to define the preferred niche and to create standardized electronic maps for all species;
3. Establish a system where maps can be verified by experts;
4. Based on (2) and (3), provide authoritative species inventories;
5. Using current climate change scenarios and knowledge about resilience of species and ecosystems, predict potential changes in species composition or abundance, with special attention to harmful algal blooms, invasive species, and predator-prey overlap.

Activities for year 3 continued directly from year 2 in Month 25 through to month 36. Highlights of the reporting period are standardized maps for over 8,000 species and a variety of tools such as the MPA planning tool, the biodiversity transects tools, the invasive species tool, etc.

b) Progress towards objectives

The third year has addressed objectives 1, 2, 3, 4 and 5 to varying degrees.

Re (1): Further occurrence data for input into modelling has been provided by CDF and DINARA and has been collected and is being processed by KESCOM/WCS.

Re (2): Refinements to the modelling algorithm and testing of various modelling options by CEFAS and NRM have strengthened the quality of maps.

Re (4): The AquaMaps display now includes an option to display a species list for a selected area.

Re (5): Climate model data were imported to the HCAF and a 2050 climate change scenario established by NRM and WP1. Invasive species, seasonal maps, before/after maps, and a tool for Marine Protected Areas are now available in AquaMaps; and species distributions can be visualised according to trophic level, size, species richness or resilience.

c) Work performed by each contractor in WP3 during the reporting period.NRM

The NRM contract ended February 2008. A major effort was made to develop the climate modelling, Objective 5, to show predicted range maps in 2050 based on the IPCC model for temperature regime in that year. 2050 maps were presented at the annual FishBase Symposium in Stockholm, and are being implemented in the INCOFISH web mapper.

Data from a survey of a rocky reef on the Pacific coast of Central America were analysed with the mapping tool to show that it is possible to use the tool to evaluate areas of conservation interest. A paper based on this study was submitted to Journal of Fish Biology. The AquaMaps tool used for INCOFISH mapping was subject to a comparative analysis with other algorithms for niche modelling. This evaluation involved also particularly CEFAS, but also WP1 staff. The results are overall positive for AquaMaps which performs as well as or better than niche modelling software, and a paper was submitted to Ecological Modelling. NRM staff participated in a WP2 meeting demonstrating GIS tools, and also taught at a summer school on habitat modelling run by the Euroceans project.

Considerable effort has gone into adapting the mapping tool, e.g., the visual display and expert review option, and completing the data tables used in the mapping, together with WP1. NRM participated in the Steering Committee meeting in Kiel in February 2008.

#### CDF

Collected data from and worked up raster formats from NASA funded ocean cruises to make layers suitable for local scale mapping; and otherwise worked towards mapping distributions of local species in the Galápagos, pertinent to Objective 1 and 4. A publication pertinent to Objective 5, was published in collaboration with the Moss Landing Marine Laboratory (Graham et al.), reporting on the discovery of a deep water endemic kelp species using a global prioritisation model to identify deep water kelp habitat that was then fine-tuned with the high resolution oceanographic data in the Galápagos area to find perviously unknown kelp hotspots.

#### CEFAS

Interacted with NRM on the paper on statistical validity of Aquamaps, pertinent to securing quality for Objective 2, continuing from year 2, the testing of predictions from AquaMaps and other commonly used species distribution modelling approaches (Maxent, GARP, glm and gam). Testing was done on six fish species against independently collected survey data from the UK and Australia and for three mammal species. In addition, model predictions were tested by sub-setting the original datasets used to create the models.

#### DINARA

Worked on two papers on sciaenid fishes pertinent to Objectives 1 and 4, and on invasive snails in the La Plata region pertinent to Objective 5. The first sciaenid paper compares the NW Atlantic with the SW Atlantic and the bathymetric distribution of the species. The second sciaenid paper examines the distribution of the family in the SW Atlantic (FAO Statistical area 41).

#### KESCOM

Continued work on obtaining data from other east African countries, and completed a coral reef finfish occurrence data file for Kenya, being extended to datasheets for other sites in the region. KESCOM also completed a data file of sea cucumber occurrence data in Kenya which includes data from all references as well as field surveys and will be uploaded to GBIF.

#### d) Deviations from the workprogram and corrective actions taken/suggested

None significant

#### e) Deliverables and Milestones

Deliverables and milestones with indication of progress are listed below in Tables S2.1 and S2.2, respectively.

f) Dissemination activities during the reporting period

WP3 Overview table

Planned / actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved
Jun 2007	Publication (testing modelling system outputs)	Research	Multiple		NRM / CEFAS
Sep 2007	Conference talk: Presentation of WP3 results at the 5th FishBase Symposium in Tervuren, Belgium,	Research	Multiple	50	NRM
Sep 2007	Conference talk: Presentation of WP3 results at the XII European Congress of Ichthyology in Cavtat, Croatia,	Research	Multiple	60	NRM
Nov 2007	Conference talk: Presentation of Climate change models of fish distribution based on AquaMaps at the FishBase Symposium 2007, Stockholm,	Multiple	Sweden	120	NRM
Autumn 2007	Press release	Multiple	Multiple		NRM
Late 2007	Publications	Research	Multiple		NRM / all

**WP3 Publications**

published / accepted for publication

Brugnoli, E.; Muñiz, P.; Venturini, N.; and Burone, L. 2007. Environmental Perturbation and Coastal Benthic Biodiversity in Uruguay. *In*: Irma C Willis. (Org.). Progress in Environmental Research. 1 ed. New York: Nova science Publishers Inc., 2007, v. 1, p. 1-52.

Conand, C. and Muthiga, N. (eds) 2007. Commercial sea cucumbers: A review for the Western Indian Ocean. WIOMSA Book Series No. 5 v + 66.

Graham, M. H.; Kinlan, B. P.; Druehl, L. D.; Garske, L. E. and Banks, S. 2007. Deep water kelp refugia as potential hotspots of tropical marine diversity and productivity. *Proceedings of the National Academy of Sciences of the USA*. 104(42) 16576-16580.

Kaschner, K., J. S. Ready, E. Agbayani, J. Rius, K. Kesner-Reyes, P. D. Eastwood, A. B. South, S. O. Kullander, T. Rees, C. H. Close, R. Watson, D. Pauly, and R. Froese. 2008 AquaMaps. *Ocean Biodiversity Informatics 2007 Conference Proceedings*

Online Publications:

Kaschner, K., J. S. Ready, E. Agbayani, J. Rius, K. Kesner-Reyes, P. D. Eastwood, A. B. South, S. O. Kullander, T. Rees, C. H. Close, R. Watson, D. Pauly, and R. Froese. 2007 AquaMaps: Predicted range maps for aquatic species. World Wide Web electronic publication, [www.aquamaps.org](http://www.aquamaps.org), Version 08/2007.

Kaschner, K., J. S. Ready, E. Agbayani, J. Rius, K. Kesner-Reyes, P. D. Eastwood, A. B. South, S. O. Kullander, T. Rees, C. H. Close, R. Watson, D. Pauly, and R. Froese.

2008 AquaMaps Environmental Dataset: Half-Degree Cells Authority File (HCAF).  
World Wide Web electronic publication, [www.aquamaps.org/data](http://www.aquamaps.org/data), Version 01/2008.

submitted:

Ready, J. S., Munson, L., Hasbún, C. R. and Kullander, S. O. Los Cóbanos rocky reef, El Salvador: the need for protection of a stepping stone in the Tropical Eastern Pacific. *Journal of Fish Biology*

in prep:

Ready, J. S., Kaschner, K., South, A. B., Eastwood, P. D., Rees, T., Rius, J., Agbayani, E., Kullander, S. O. and Froese, R. Predicting the distributions of marine organisms using global occurrence data. *Ecological Modelling*

Ready, J. S., Kaschner, K., Rius, J., Kesner-Reyes, K., Agbayani, E., Kullander, S. O. and Froese, R. Provisional title: Effects of global climate change on the suitable habitat for marine fishes: the simplified version.

Sciaenidae paper 1 by DINARA. Provisional title: Comparing the North Western Atlantic with the South Western Atlantic Sciaenidae and their bathymetric distributions.

Sciaenidae paper 2 by DINARA. Provisional title: The distribution of the family Sciaenidae in the South Western Atlantic (FAO Statistical area 41).

Kesner-Reyes, K., Agbayani, E., Froese, R., Ready, J. S., Rius, J., Kullander, S. O. and Kaschner, K. Provisional title: Species richness in AquaMaps: application of predictive species range mapping to identify areas of high marine fish biodiversity in Southeast Asia. *UPV Journal of Natural Sciences*

Kesner-Reyes, K., Agbayani, E., Froese, R., Ready, J. S., Rius, J., Kullander, S. O. and Kaschner, K. Provisional title: Global species richness of marine organisms.

Ready, J. S., Casal, C., Agbayani, E., Rius, J., Kesner-Reyes, K., Kullander, S. O. and Froese, R. Provisional title: AquaMaps Invasive Species Tool. A test with the Mediterranean data.

See Annex I and II below for summary representations of dissemination activities including all workpackages.

<b>WP Number: 4</b>	<b>WP Name: Ecosystem Modelling</b>
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a) Workpackage objectives and starting point of work for the reporting period

Overarching objective:

To provide standardized ecosystem models for all selected ecosystems.

Specific objectives:

1. Compile and make available all data relevant for the construction of models for the selected LMEs;
2. Construct standardized ecosystem models;
3. Work closely with WP 5 on the size and placement of protected areas; explore patterns of response of impacted ecosystems, testing hypothesis on resilience and impact of fisheries on ecosystems.
4. Contribute to the exploration of ecosystem attributes in a two-level strategy, one within each model exploring impact of fishing, compatibility of conservation and exploitation under sustainable use of the ecosystems, resilience, among others. The second level will be a meta-analysis, searching patterns of response of aquatic ecosystems (to human activities, ecosystem attributes, structural and functional behavior, etc...).

Activities for this reporting period started on 1<sup>st</sup> May, 2007. The Highlights of the period are the completion of 11 new ecosystem models, the online publication of 153 existing ecosystem models, and the publication of over 30 scientific papers.

b) Progress towards objectives

Re (1): There are presently 153 models available on the Incofish portal (see <http://www.incofish.org/Workpackages/WP4/EcopathCollection.php>). In addition a database with information on models (including documents related to these models) was developed and made available to all WP4 and WP5 partners. The activity was carried out by all partners led by CICIMAR. The set of models constitutes deliverable D4.1.

Re (2): 11 models were prepared by WP partners except of UNIABDN from which information on the finalization of the Moray Firth Ecosystem model is pending (partner argued with funding limitation). These models were the initial step in the modelling process to be followed by dynamic and spatial simulations as the project went on. In the process CICIMAR added a model for La Paz Bay, Mexico, to this list of models. Models constructed (with exception of the Moray Firth ecosystem by UNIABDN) are available on the Incofish portal at <http://www.incofish.org/Workpackages/WP4/ModelsWP4.php> as follows (name of ecosystem and partner responsible):

1. Adriatic Sea (UNIPAD)
2. Benguela Current (MCM DEAT)
3. Campeche Bank (CICIMAR)
4. East China Sea (EUCN)
5. North Sea (CEFAS)
6. Northern Gulf of California (CICIMAR)
7. Senegambian coasts (CRODT)
8. Gulf of California (CICIMAR)
9. Humboldt Current (UNIConcepcion)
10. South Brazil Bight (USP)
11. Gulf of Mexico (CICIMAR)

## 12. La Paz Bay (CICIMAR)

The set of models constitute deliverable D4.2.

During the 2<sup>nd</sup> Project Steering Committee meeting it was decided to incorporate two additional ecosystems; the Northern Benguela current off Namibia and the Gulf of Thailand. The first model is now available on the Incofish portal.

Re (3): The idea was to work closely with WP 5 on the size and placement of protected areas. In this light a joint WP4 & WP5 workshop on spatial modeling using Ecospace was held in March 2007 with Dr. Villy Christensen as invited resource person. The following Ecospace models were developed in the scope of the workshop:

1. Northern Adriatic sea (UNIPAD)
2. Campeche Bank Ecosystem, South of Gulf Mexico (CICIMAR)
3. Spatial Modelling of fishing protected area and fishing closure in the East China Sea (ECNU)
4. Ecospace modelling of the Northern Benguela current (SAMS)
5. Northern Gulf of California: Mexico (CICIMAR)
6. North Sea, Europe (CEFAS)
7. La Paz Bay 1, southern Gulf of California, Mexico (CICIMAR)
8. Modélisation spatiale de l'écosystème Sénégalais (CRODT)
9. South Brazil Bight (Brazil, Southeastern Brazil Shelf (until 100m isobath) (IOUSP)
10. Humboldt current (UNIConcepcion)
11. Bahía Sechura, northern Peru (CENSOR project)
12. Continental shelf of southern Gulf of California, Mexico (CICIMAR)
13. Continental shelf ecosystem of the central Mexican Pacific (associated to CICIMAR)
14. Gulf of Ulloa, Baja California Sur, México (CICIMAR)

Spatial models of above ecosystems are available at the Incofish portal (see <http://www.incofish.org/Workpackages/WP4/WP4ObjDelMiles.php>). They constitute deliverable D4.3

Several contributions on patterns of response of impacted ecosystems, testing of resilience of ecosystems and impact of fisheries on ecosystems were submitted for publication, others are under development. Results were included in Deliverable D4.4 (see <http://www.incofish.org/Workpackages/WP4/WP4ObjDelMiles.php>).

Re (4): A series of analyses was carried out for different levels, some at country level and others at regional or global level. A series of manuscripts describing the results of these analyses were submitted for publication as a contribution to deliverable D4.5. Several manuscripts are still in prep and will be submitted for publication in the near future. Results related to this objective are furthermore represented in deliverable D4.4. Both deliverables are available at the Incofish portal (see <http://www.incofish.org/Workpackages/WP4/WP4ObjDelMiles.php>). To avoid lengthy descriptions here please check deliverables D4.4 and D4.5 at the above link. The next paragraphs will briefly describe main results by each contractor.

#### c) Work performed by each contractor in WP4 during the reporting period

During the reporting period all partners were mainly involved in the preparation of manuscripts. Nine manuscripts of all published by WP4 were concluded before the reporting period indicating that 85 % of the 61 published to date by WP4 were concluded, improved, and / or initiated during the reporting period. Other activities were continued as part of the WP4's contribution to the progress of the project.

CEFAS

continued with spatial modelling and progressed particularly with the evaluation of a MPA in the North sea.

CICIMAR

Has extensively worked on publishing scientific results obtained during the project duration.

Two book projects initiated during the project duration will be concluded in the near future. The reports comprise 16 manuscripts of which 10 are ready and six will be ready soon.

I) Interdependent Models

Several interdependent models were constructed during the project, meaning that a minimum of two independent trophic models of adjacent ecosystems were connected. This initiative explores an approach to analyze further construction of models for Large Marine Ecosystem. Eight marine ecosystems mainly around Mexico are included

II) Impact of Shrimp Trawl Bycatch Mortality on Ecosystems

Evaluation of impact of shrimp trawl bycatch mortality on ecosystems is one of greatest challenges in sustainable management of fisheries and biodiversity conservation. There are not enough field data to evaluate bycatch mortality impact, and simulation experiments were designed and applied to seven ecosystems. They consist in simulating and increasing exploitation patterns over time. A number of ecosystem indices were evaluated. The book will present seven study cases in detail from around Mexico and summarize findings in an integrative chapter.

CICIMAR collaborated furthermore with regional institutions in an initiative directed to study the effects of the shrimp trawl fishery in the Gulf of California Ecosystem. CICIMAR contributed with one scientific report out of 11, and the edition of the final report. Even if results formally came from scientific research it was agreed that the document should be appropriately designed to disseminate knowledge to the general public. This was considered of relevance since this topic is of high priority for the fishing sector of the Gulf of California and in the rest of the country, and related to strong social and economic implications. The document is the outcome of a workshop with scientists, fishers, fishing industrials, managers and NGO representatives.

Apart of the manuscripts already published or in press (see section f) and Annex I below), a selection of publications is listed here that are in various stages of progress:

Albañez-Lucero M. and F. Arreguín-Sánchez. Spatial distribution of the red grouper, *Epinephelus morio*, in the Campeche Bank, Mexico.

Albañez-Lucero M. and F. Arreguín-Sánchez. Temperature, seasonal distribution and reproductive aggregation of the red grouper *Epinephelus morio*, in the Campeche Bank, Mexico.

López-Rocha, J. A., F. Arreguín-Sánchez and J. A. de Anda-Montañez. Spatial and seasonal trends of catchability of red grouper *Epinephelus morio* on the continental shelf of Yucatan, Mexico and its connotation for fishery management.

López-Rocha, J. A., F. Arreguín-Sánchez and R. Solana-Sansores. Dynamics of the mid-size fishing fleet of the red grouper *Epinephelus morio* of Yucatan, Mexico, based on habitat quality.

CRODT

Ecospace modeling of the Senegambian ecosystem was published. This study presents an Ecopath model of the Senegambien ecosystem of the coast of Western Africa during the years 2000–2004. This model is integrated in two studies carried out in collaboration with the partners of the WP.

Collaborating with scientist from different countries allowed improving knowledge and level of capacity to better explore the possibilities of Ecopath. This implies improvement and extension of management tools for sustainable exploitation of marine fisheries.

### ECNU

Finalised development of the East China Sea (ECS) Ecospace model, and prepared a report detailing model development for inclusion in the FCRR.

Jiang Hong and Cheng Heqin (ECNU) prepared a revised version (with assistance from CICMAR and UNEW) of the paper on the possible trophic mechanisms underlying jellyfish blooms in the ECS in line with reviewers comments. The revised version has been accepted for publication by Ecological Modelling.

Cheng Heqin presented a talk on the ECS Ecospace simulations of MPAs at the European Symposium on MPAs at Murcia.

Jiang Hong was awarded a scholarship to spend six months working at CEFAS where she worked on developing routines for validating Ecospace predictions against spatial timeseries data of catches and abundances.

In September Cheng Heqin, Jiang Hong and Li Na attended the 2nd Global Conference on LMEs in Qingdao and presented a poster on the INCOFISH work on the ECS.

### IOUSP

An Ecopath model representing the South Brazil Bight in 1977 was updated for 2001. Updates included number of functional groups, fleets, and discards. Time series of abundance for some stocks and socioeconomic information was also incorporated. Construction of a spatial model is in progress, habitats were identified from oceanographic features based on satellite images. Two additional models, one of the Brazil Shelf LME from 100-1000m, and another one analyzing the pelagic pathways from the open ocean off South Brazil were constructed; the former one resulting in a publication.

Papers to be submitted in a short term:

Gasalla, M.A. 2008. Modelling trophic flows and ecosystem dynamics in the South Brazil Bight for a two decade period.

Gasalla, M.A., Rodrigues, A. R. & Duarte, L. F. 2008. Assessing costs of industrial fishing fleets in São Paulo, Brazil.

Gasalla, M.A. & Spinkosky, D. 2008. Ecosystem-based fisheries modelling of the South Brazil Bight: a new conceptualization based on the fishery system.

Gasalla, M.A. et al 2008. Ecosystem-based fishery management policies exploration for the South Brazil Bight (23°-28°S) under multidimensional scenarios.

### MCM DEAT

has published / submitted several scientific papers during the reporting period. The following one is now ready for submission:

Shannon, L.J., Coll, M. and Neira, S. Examining indicators of ecosystem changes and effects of exploitation from trophic models fitted to time series data in three ecosystems. Ready for submission to Ecological Modelling.

### UNIPAD

During the 3<sup>rd</sup> project year UNIPAD radically modified and improved the Ecopath, Ecosim and Ecospace food web models of the Northern Adriatic Sea by including new or improved data (e.g. discard collected from fieldwork, trawl surveys data from collaboration with the University of Bologna, etc.). Network analysis on the Northern Adriatic Sea Ecopath network and simulations were also included in a M.Sc.thesis in Marine Biology. One publication and two proceedings (UNIPAD gave oral presentations in EMBS 2007 in Kiel, Germany, and ECEM 2007 in Trieste, Italy) were published and another publication is nearly completed.

UNIPAD also led and completed the joint-WP4 publication on metabolic scaling relations in aquatic ecosystems trophic networks, which was submitted to Ecology. The following

paper is finished and will be submitted to Ecological Modelling or Estuarine, Coastal and Shelf Science:

Barousse A., Duci A., Mazzoldi C., Artioli Y., Palmeri L. Trophic mass-balance model of the Northern Adriatic Sea: analysis of a human-impacted food web.

**UNEW**

took lead in the preparation of the joint WP5 and WP4 publication:

Le Quesne W.J.F., Arreguín-Sánchez F., Albañez-Lucero M., Cheng H.Q., Escalona V.H.C., Daskalov G., Ding H., Rodríguez E.G., Heymans S.J.J., Jiang H., Lercari D., López-Ferreira C., López-Rocha J.A., Mackinson S., Pinnegar J.K., Polunin N.V.C., Wu J., Xu H.G. and M.J. Zetina-Rejón. Analysing (2008) Ecosystem Effects of Selected Marine Protected Areas With Ecospace Spatial Ecosystem Models. Canada: University of British Columbia, Fisheries Centre Research Reports 16(2) 67 pp (Participating partners: UNEW, CICIMAR, ECNU, CEFAS, NIES).

**UNICONCEPCION:**

has published / submitted several scientific papers during the reporting period. The following paper is still in prep. involving all WP4 partners:

Arancibia. H. (leading author) et al. Does fishing affect the strength of trophic interactions in marine ecosystems?

**UNIABDN**

prepared an ECOPATH model for the Moray Firth with a view to examining the impact of squid fishing.

**d) Deviations from the workprogram, and corrective actions taken / suggested:**

ECOPATH model from partner UNIABDN still needs to be submitted for inclusion in portal.

**e) Deliverables and Milestones**

Deliverables and milestones with indication of progress are listed in Tables S2.1 and S2.2, respectively.

**f) Dissemination activities during the reporting period**

WP4 Overview table

<b>Planned / actual Dates</b>	<b>Type</b>	<b>Size of audience</b>	<b>Type of audience</b>	<b>Countries addressed</b>	<b>Partner responsible / involved</b>
May 07 to April 08	Workshops	8	Scientists	South Africa, Mexico, Italy, Chile	UNIconcepcion, CICIMAR, MCM DEAT, CRDOT, ECNU
May 07 to April 08	Scientific meeting contributions	46	Scientists	Mexico, Brazil, Morocco, Germany, Spain, USA, China, Sweden, Chile, Finland, Jordan, Italy, Dominican Republic, France	WP4 partners
May 07 to April 08	PUBLICATIONS Published	27	Scientists	Brazil, Chile, China, Italy, Mexico, South	WP4 partners

Planned / actual Dates	Type	Size of audience	Type of audience	Countries addressed	Partner responsible / involved
	In press Submitted In prep	15 21 29		Africa, United Kingdom, Uruguay	
May 07 to April 08	Teaching: Lectures and courses	6	Students	Uruguay, Mexico, Chile	UNIConcepcion, CICIMAR, CEFAS, USP, MCM DEAT, UNIPAD
May 07 to April 08	Formation of students: MSc PhD PostDoc	17 8 1	Students	China, United Kingdom, Brazil, Mexico, South Africa, Italy, Chile	EUCN, CEFAS, USP, CICIMAR, MCM DEAT, UNIPAD, UNIConcepcion
Beyond April 08	Contribution accepted for upcoming scientific conferences	3	Scientists	Spain, Italy, Japan	WP4 Partners

## WP4 Publications

### CEFAS

Araujo, J, Steve Mackinson, Paul J.B. Hart. Evaluating changes in the structure and function of the western Channel ecosystem from 1970s to 1990s.

Araújo, J., Mackinson, S and Hart, P.J.B. 2008. Exploring fisheries strategies for the western English Channel using an ecosystem model. *Ecological Modelling* 210: 465-477.

Lees, K and Mackinson, S. Common Indicators of Observed Changes in UK Marine Community Structure, in prep for Marine Ecological Progress Series, submitted.

Lees, K and Mackinson, S. Empirical and modelling evidence for a regime shift in the Irish Sea. In prep for submission to *Journal of Marine Ecosystems*.

Mackinson, S and Daskalov, G. 2007. An ecosystem model of the North Sea for use in research supporting the ecosystem approach to fisheries management: description and parameterisation. *Cefas Science Series Technical Report 142*. 200p.

### CICIMAR

Arreguín-Sánchez F, P. del Monte-Luna, J.G. Díaz-Uribe , M. Gorostieta, E.A. Chávez and R. Ronzón-Rodríguez. 2007. Trophic model for the ecosystem of La Paz bay, Southern Baja California Peninsula, Mexico. *Fish, Centre Res. Rep*

Arreguín-Sánchez F., M. Ramírez-Rodríguez, M. Zetina-Rejón and V.H. Cruz-Escalona. 2008. Natural hazards, stock depletion, and decision making in the southern Gulf of Mexico pink shrimp (*Farfantepenaeus duorarum*) fishery. *Mitigating Impacts of Natural Hazards on Fishery Ecosystem*. *Amer. Fish. Soc.* in press

Arreguín-Sánchez F., M. Zetina-Rejón, M. Ramírez-Rodríguez. 2008. Exploring ecosystem-based harvesting strategies to recover the collapsed pink shrimp (*Farfantepenaeus duorarum*) fishery in the southern Gulf of Mexico. *Ecological Modelling* accepted.

Arreguín-Sánchez F., M.J. Zetina-Rejón, V.H. Cruz-Escalona, D. Lercari, V.H. Galván-Piña, P. del Monte-Luna. Simulated effects of shrimp trawling by-catch mortality on benthic ecosystems. *Aquatic Conservation* submitted.

Arreguín-Sánchez, F. 2006. Pesquerías de México, 13-36p. In: *Pesca, Acuicultura e Investigación en México*, Guzmán-Amaya P. and D. Fuentes-Castellanos (eds.).

- Centro de Estudios para el Desarrollo Rural Sustentable y la Soberanía Alimentaria. Cámara de Diputados, LIX Legislatura / Congreso de la Unión, México. 384p.
- Arreguín-Sánchez, F. Exploring management strategies to optimize harvesting of fisheries in the Central Gulf of California ecosystem. *Hydrobiologia*.
- Arreguín-Sánchez, F. and E. Arcos-Huitrón. 2007. Fisheries Catch Statistics From Mexico. *Fisheries Centre Research Reports* 15(2):81-104.
- del Monte-Luna, P., F. Arreguín-Sánchez and D. Lluch-Belda. 2007. Marine ecosystem analyses: BAC meets Ecopath. *Fisheries Centre Research Report*, UBC, Canada.
- Lercari D. and F. Arreguín-Sánchez. 2008. An ecosystem modelling approach to deriving viable harvest strategies for multispecies management of the Northern Gulf of California. *Aquatic Conservation*.
- López-Ferrerira, C., G. de la Cruz-Aguero and F. Arreguín-Sánchez. 2008. Atlas Oceanográfico del Banco de Campeche, México. Instituto Politécnico Nacional.
- López-Rocha J. A. and F. Arreguín-Sánchez. Seasonal patterns of movement of the red grouper *Epinephelus morio* on the north continental shelf of the Yucatan Peninsula, Mexico. *Proceedings of the 60th annual meeting of the Gulf and Caribbean Fisheries Institute*. Punta Cana, Dominican Republic, November 5-10, 2007.
- Lopez-Rocha J. A. and F. Arreguín-Sánchez. 2008. Spatial distribution of red grouper *Epinephelus morio* catchability on the Campeche Bank of Mexico. *Journal of Applied Ichthyology*.
- Ponce-Díaz, G., F. Arreguín-Sánchez y L.F. Beltrán-Morales. 2005. Indicadores de sustentabilidad y pesca: casos en Baja California Sur, México. In: Beltrán-Morales L.F. (ed.). *Desarrollo sustentable y construcción de indicadores*. CIBNOR, México.
- Salcido-Guevara L. A. and F. Arreguín-Sánchez. A benthic ecosystem model of the Sinaloa continental shelf, Mexico. *Fish. Centre Res. Rep.*

#### CRODT

- Samb, B. 2007. Spatial Modelling of Senegambian Ecosystem. *Fisheries Centre Research Report*, UBC, Canada.

#### IOUSP

- Gasalla, M.A., Velasco, G., Rossi-Wongtschowski, C.L.D.B., Haimoivi, M. & Madureira, L.S.P. 2007. Modelo de equilibrio de biomassas do ecossistema da região Sudeste/Sul do Brasil entre 100 e 1000 m de profundidade. *Série Documentos Revizee - Score Sul*. São Paulo: Instituto Oceanográfico – USP: 61p

#### MCM-DEAT

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#### CEFAS – UNEW - MCM DEAT – UNIconcepcion - CICIMAR

- Mackinson, S., Daskalov,G., Heymans S., Neira, S. Arancibia, H., Zetina-Rejón, M., Lecari,D. Hong, J., Hequin, C., Coll, M., Arreguin-Sanchez, F., Shannon, L., and Lees, K. Which forcing factors fit? Using ecosystem models to investigate the relative influence of fishing and changes in primary productivity on the dynamics of marine ecosystems.

#### UNIPAD – CICIMAR – UNEW – CEFAS - MCM-DEAT – IOUSP - CRODT

- Barausse, A., Palmeri, L., Salcido-Guevara, L.A., Arreguín-Sánchez, F., Heymans, J.J., Lercari, D.2., Mackinson, S., Shannon, L.J., Watermeyer, K.E., Zetina-Rejón, M.J., Artioli, Y., Cheng, H.Q., Cruz-Escalona, V.H., Daskalov, G., Del Monte-Luna, P., Gasalla. M.A. & Samb, B. Metabolic scaling relations in aquatic ecosystems trophic networks. *Ecology*.

14 % out of the abundant output of WP4 scientific publications were joint publications between partners: notably Mackinson et al. (submitted,), Barausse et al. (submitted), Jiang et al. (2008); Other papers with collaboration of two or more partners were: Cheng et al. (2007, Jiang et al. 2006, Neira et al 2006, Arreguín-Sánchez et al., submitted, Lercari et al., (2007); and LeQuesne et al. (2008).

See Annex I and II below for summary representations of dissemination activities including all workpackages.

**WP Number: 5****WP Name: Marine Protected Areas**a) Workpackage objectives and starting point of work for the reporting periodOverarching objective:

The objectives of the WP5, "MPA" workpackage, are to improve the basis for planning of MPAs with a view to reconciling demands especially of fisheries, biodiversity conservation and industrial uses including coastal aquaculture.

Specific objectives:

1. Compile data from three selected case studies of MPAs, compare and contrast the stated objectives, operation, and known effectiveness of the MPAs with respect to location, resource and other factors;
2. Conduct simulations of existing MPAs where feasible with respect to stock benefits/costs, and derive objective criteria for the placement of MPAs in all three case studies;
3. Consider possible alternatives for design of MPA networks in the shelf systems, develop conceptual models for the planning of MPAs on continental shelves, and apply these to the selected case studies.

The starting point of work for this reporting period is month 25 (1<sup>st</sup> May, 2007).

b) Progress towards objectives

During this reporting period the Ecospace models developed in conjunction between WP4 and WP5 were completed. All WP partners were involved in the model development.

As part of the model development members of WP4 and WP5 prepared model descriptions for publication. Some of the model descriptions have been published in institutions own report series, although a combined report containing model descriptions of nine models developed within the Incofish project has been published as a University of British Columbia (UBC) Fisheries Centre Research Report (FCRR) edited by Le Quesne, Arreguin-Sanchez and Heymans (UBC FCRR 15(6), 2007).

After delivery of the Ecospace models all partners ran simulations of three existing and specifically proposed MPAs on their respective models for deliverable D5.2 (for a list of deliverables see Table S2.1 below). The D5.2 report that examines and discusses these simulations has been completed and made available on the INCOISH web portal. A modified version of this report has been published as part of the UBC Fisheries Centre Research Report series (UBC FCRR 16(2), 2008).

The final WP5 meeting was held in Murcia in September alongside the European Symposium on MPAs. At the WP meeting plans for a set of MPA simulations for deliverable D5.3 were finalised, and plans for the 'MPA Tool' for D5.3 discussed.

The MPA tool for D5.3 is live on the aquamaps website:

<http://www.aquamaps.org/tools/aquamaps/tools/mpa/details.htm>

Six oral presentations on MPA analyses conducted within WP5 were presented at the European MPA Symposium by partners from UNEW, ECNU, CICIMAR, CEFAS and SAMS. During this reporting period 1 paper (UNEW) was published and 4 were submitted and accepted (ECNU, NIES and UNEW) by peer review journals. Three further

publications are currently in preparation and are expected to be submitted shortly after the official end of the project.

c) Work performed by each contractor in WP5 during the reporting period.

CEFAS

- finalised development of the North Sea Ecospace model, and prepared a report detailing model development of the North Sea model as a CEFAS Technical Report.
- Simulations of existing MPAs in the North Sea were conducted and analysed for D5.2. CEFAS assisted with the analysis of the North Sea D5.2 simulations for the D5.2 report.
- ran the MPA simulations for D5.3 with the North Sea model. MPA and region maps for the Ecospace scenarios were developed in accordance with the objective criteria for MPA sizing and placement agreed at the WP5 meeting in Murcia.
- John Pinnegar and Georgi Daskalov attended the WP5 meeting in Murcia and assisted in development of the objective criteria for MPA selection for the D5.3 simulations. John Pinnegar presented a talk on the North Sea Ecospace simulations of MPAs at the European Symposium on MPAs at Murcia, and at a conference on 'Towards a coherent network of Marine Protected Areas' held in the UK. Georgi Daskalov presented a talk on the North Sea Ecospace MPA simulations at the European Conference on Ecological Modelling, Trieste.

CICIMAR

- finalised the Northern Gulf of California and Campeche Bank Ecospace models, and prepared a report detailing model development of the northern Gulf of California model for inclusion in the FCRR.
- have been analysing the spatial distribution of different life history stages of the red grouper in relation to benthic habitats to allow definition of movement parameters of red grouper in the Campeche Bank model.
- Simulations of existing and proposed MPAs in the northern Gulf of California and Campeche Bank were conducted for D5.2. CICIMAR assisted with the analysis of the Mexican D5.2 simulations for the D5.2 report.
- ran the MPA simulations for D5.3 with the northern Gulf of California and Campeche Bank models. MPA and region maps for the Ecospace scenarios were developed in accordance the objective criteria for MPA sizing and placement agree at the WP5 meeting in Murcia.
- Manuel Zetina-Rejon attended the WP5 meeting in Murcia presented a talk on the Campeche Bank Ecospace simulations of MPAs at the European Symposium on MPAs at Murcia.

ECNU / NIES

- finalised development of the East China Sea (ECS) Ecospace model, and prepared a report detailing model development for inclusion in the FCRR.
- Simulations of existing MPAs in the ECS were conducted for D5.2. Based on these simulations a paper on the trade-offs between different sectors of the fishery in the ECS as a result of MPA establishment was submitted to Environmental Conservation journal and accepted pending corrections.
- have completed the simulation runs for D5.3 as part of the examination of the effects of size and location on MPA performance.
- Jiang Hong and Cheng Heqin (ECNU) prepared a revised version (with assistance from CICIMAR and UNEW) of the paper on the possible trophic mechanisms underlying jellyfish blooms in the ECS in line with reviewers comments. The revised version has been accepted for publication by Ecological Modelling.

- Cheng Heqin presented a talk on the ECS Ecospace simulations of MPAs at the European Symposium on MPAs at Murcia.
- Jiang Hong was awarded a scholarship to spend six months working at CEFAS where she worked on developing routines for validating Ecospace predictions against spatial timeseries data of catches and abundances.
- Cheng Heqin (ECNU) and Ding Hui (NIES) attended the WP5 meeting in Murcia. In September Cheng Heqin, Jiang Hong and Li Na attended the 2nd Global Conference on LMEs in Qingdao and presented a poster on the INCOFISH work on the ECS.

#### UNEW

- Nick Polunin and Will LeQuesne developed the strategy for analysis of results to examine the outcomes of the MPA simulations for deliverable D5.2 and for spatial MPA simulations for deliverable D5.3. Assisted with preparing simulations for the MPA analyses and substantially conducted the results analysis of the MPA simulations and drafted the report for D5.2. A modified version of the D5.2 report was published as part of the UBC FCRR series (FCRR 16(2)), this was a collaborative work led by UNEW and co-authored by all members of WP5.
- In conjunction with project partners developed the strategy for the simulations to be run for D5.3 examining the implications of the size and location of MPAs. UNEW employed three additional scientists to assist with running initial Ecospace simulations to test possible strategies for simulations to be run for D5.3. The simulations and analyses conducted for this strategy was assisted and co-ordinated by Will Le Quesne.
- Will Le Quesne travelled to Kiel and worked with WPs 3 and WP 11 to produce the on-line MPA design tool.
- Will Le Quesne presented two talks on MPA simulations at the European Symposium on Marine Protected Areas, and a talk to the Marine Sciences research group at Essex University on the implications of juvenile discards for MPAs. Will Le Quesne gave a further talk on use of the Ecospace software for MPA analyses at the workshop on 'Biogeochemical processes and fish dynamics in food web models for end-to-end conceptualisation of ecosystems', held in Trieste, Italy in conjunction with the European Conference on Ecological Modelling. Two papers examining aspects of MPA design using population models were submitted to, and accepted by, the ICES Journal of Marine Science.
- Will Le Quesne maintained project co-ordination, arranging the WP meeting, ensuring WP5 was up to date with required project reporting, liaised with WP partners over the simulations for D5.2 and D5.3, arranged for project partners to attend the MPA symposium.
- Will Le Quesne worked with Sheila Heymans (WP5) and Francisco Arreguin-Sanchez (WP4 and 5) on editing the UBC Fisheries Centre Research Report (FCRR 15(6)) containing model descriptions of INCOFISH Ecopath models. This required extensive communication with individual section authors. UNEW employed Marieke Steuben to assist with the linguistic editing and formatting of the report.
- Sheila Heymans finalised development of the Northern Benguela Ecospace model, and prepared a report detailing model development of the northern Benguela model for the FCRR.
- Simulations of possible MPAs in the northern Benguela were conducted and analysed for D5.2. Sheila Heymans assisted with the analysis of the northern Benguela D5.2 simulations for the D5.2 report.
- Sheila Heymans has commenced preparations for running the MPA simulations for D5.3 with the northern Benguela model. MPA and region maps for the Ecospace scenarios have been developed in accordance with the objective criteria for MPA

sizing and placement agreed at the WP5 meeting in Murcia. Initial simulations have been run.

- Sheila Heymans attended the WP5 meeting in Murcia and assisted in development of the objective criteria for MPA selection for the D5.3 simulations. She presented a talk on the northern Benguela Ecospace simulations of MPAs at the European Symposium on MPAs at Murcia, and a further talk at the workshop on ‘Biogeochemical processes and fish dynamics in food web models for end-to-end conceptualisation of ecosystems’, held in Trieste, Italy in conjunction with the European Conference on Ecological Modelling.

d) Deviations from the workprogram and corrective actions taken/suggested:

no deviations from the workprogram to be reported.

e) Deliverables and Milestones

Deliverables and milestones with indication of progress are listed in Tables S2.1 and S2.2, respectively.

f) Dissemination activities during the reporting period

WP5 Overview table

Planned / actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved
May 2007	Presentation to Marine Sciences research group University of Essex ,A comparison of no-take zones and traditional fishery management tools’	Scientific researchers	UK	15	UNEW
Sept 2007	Conference talk-Spatial simulations of fishery management scenarios of the East China Sea	Scientists, policy officers and fisheries managers	International	50	ECNU
Sept 2007	Conference talk-Simulating a MPA as a strategy for ecosystem-based fishery management of the red grouper in the Campeche Bank, Mexico	Scientists, policy officers and fisheries managers	International	50	CICI-MAR
Sept 2007	Conference talk-The use of marine protected areas as part of ecosystem based management in Namibia	Scientists, policy officers and fisheries managers	International	50	UNEW
Sept 2007	Conference talk-Managing mobile species with MPAs; the interaction between mobility and fishing mortality	Scientists, policy officers and fisheries managers	International	50	UNEW
Sept 2007	Conference talk-Are bad MPAs any good, or just a new way of making old mistakes	Scientists, policy officers and fisheries managers	International	50	UNEW
Sept 2007	Conference talks: “An evaluation of existing and proposed MPAs in the North Sea using Ecospace”, “	Scientists, policy officers and fisheries	International	50	CEFAS

Planned / actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved
		managers			
Oct 2007	Marine Protected Areas as a tool for ecosystem conservation and fisheries management", "Towards a coherent network of MPAs".	MPA managers, government officials and scientists	UK	60	CEFAS
Nov 2007	Conference talk: 'Can marine protected areas be used to enhance fisheries in Namibia', workshop on 'Biogeochemical processes and fish dynamics in food web models for end-to-end conceptualisation of ecosystems', held in Trieste, Italy in conjunction with the European Conference on Ecological Modelling	Scientists	International	50	SAMS
Nov 2007	Conference talk: 'INCOFISH adventures with Ecospace' workshop on 'Biogeochemical processes and fish dynamics in food web models for end-to-end conceptualisation of ecosystems', held in Trieste, Italy in conjunction with the European Conference on Ecological Modelling	Scientists	International	50	UNEW
Nov 2007	Conference talk: 'Abundance and trophic interactions in North Sea fishes' at the European Conference on Ecological Modelling, Trieste, Italy	Scientists	International	50	CEFAS

## WP5 Publications

- Ding, H., Xu, H., Wu, J., Le Quesne, W.J.F., Sweeting, C.J., Polunin, N.V.C., (accepted) An overview of spatial management and marine protected areas in the East China Sea. Coastal Management.
- Jiang, H., Cheng, H.Q., Xu, H.G., Arreguín-Sánchez, F., LeQuesne, W.J.F. (2006). Preliminary Study on Fishery Impact by trophic structure and flow analysis in the East China Sea. Proceeding of the Second International Conference on Estuaries and Coasts. 27<sup>th</sup>-30<sup>th</sup> Nov. 2006, Guangzhou, China. Guangdong Economic Publishing House, Guangdong, China. pp. 537-543.
- Le Quesne, W.J.F., Hawkins, S.J., Shepherd, J.G. (2007). A comparison of trophic controls and traditional fishery management tools for managing site attached species with a mixed larval pool. Fish and Fisheries 8: 181-195.
- Le Quesne, W.J.F., Codling, E.A. (accepted) Managing mobile species with MPAs; the interaction between mobility, larval dispersal and fishing mortality. ICES J. Mar Sci.
- Le Quesne, W.J.F. (accepted) Are bad MPAs any good, or just a new way of making old mistakes? ICES J. Mar Sci.
- Le Quesne et al 2008 Analysing ecosystem effects of selected marine protected areas with Ecospace spatial ecosystem models. Fisheries Centre Research reports 16(2) 67pp.

See Annex I and II below for summary representations of dissemination activities including all workpackages.

<b>WP Number: 6</b>	<b>WP Name: Coastal Transects</b>
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a) Workpackage objectives and starting point of work for the reporting period

Overarching objective:

To provide a framework for compilation and analysis of data relevant to the understanding of interactions, impacts and flows in the coastal zone. It aims also at providing coastal managers with a decision-making framework and communication tool for integrated coastal management.

Specific objectives:

1. To review concepts and tools for ICZM, with a special focus on stakeholder involvement;
2. To categorize coastal areas using coastal transects and related software; and
3. To develop and test decision-making framework for integrated coastal management based on coastal transects using selected cases around the world.

The starting point of work for this period in month 25 (1<sup>st</sup> May, 2007) was the fine-tuning of CTAM (Phase I) and the development of CTAM Phase II, which aims to capture and analyze interactions and flows in the fisheries and coastal areas. Work during this period involved model validation, sensitivity testing, cluster analysis and algorithm check. The use of CTAM as a participatory decision-support tool was tested through stakeholder consultations. CTAM was heavily promoted during this period through presentations at conferences and workshops, as well as linking of CTAM to other networks. Publications of work related to WP6, in addition to the software itself, are in the form of conference proceedings, book chapters, a book manuscript, and submitted manuscripts to peer-reviewed journals.

b) Progress towards objectives

WP6 activities were jointly conducted by all contractors, with CDC as the lead partner in the development of CTAM. The activities related to the testing of the software for user-friendliness and communication purpose was led by IGS. The activities related to the checking of the algorithm and the analysis were led by UNIABDN. All contractors participated in the write-up of the manuscripts, with each contractor taking the lead in at least one paper. WP6 received support from Eli Agbayani (programmer) and Rachel Atanacio (artist) of FishBase/WP1 team in the programming of the software, the design of the interface and the development of the interactive features (including icons and pictures). The summary of the tasks worked on and achievements during the reporting period is as follows:

Topic	Tasks	Achievements	Contractors involved
Analysis of interactions and flows (CTAM Phase II)	Development and fine-tuning of the algorithm for the computation of the stock and flows of biomass, cash and labor	Algorithm tested, and incorporated in CTAM	CDC

	Development and fine-tuning of the animation to display the results of the analysis	The result page of CTAM Phase II includes pictures and tables of data, which can be downloaded.	CDC, in collaboration with FishBase and WP1
	Data collection and development of prototypes for Phase II models	Three Phase II models have been included in the database as prototypes, covering estuary, beach and delta coastal types, based on case studies in Thailand.	CDC
	Stakeholder consultations to discuss and validate the models	Two consultations were conducted in Thailand.	CDC
Decision-support tool	Stakeholder consultations on issues and problems in fisheries and coastal zones	A consultation was conducted in Thailand, using CTAM and EwE, which resulted in the discussion about different management scenarios and policy options	CDC, in collaboration with WP8
	Development of the 'governability index' as the decision-support tool	An analysis of the governability of the coastal areas is included in CTAM with simple icons showing the results	CDC, in collaboration with FishBase and WP1
Promotion of CTAM	Presentations about CTAM	Eight presentations on CTAM were made at conferences and meetings in Canary Islands, Greece, The Netherlands, USA (Oregon), Thailand (Krabi and Choburi), Canada (Halifax, St. Johns)	CDC
	Collaboration with other existing network	CTAM joined EBM Tools Network ( <a href="http://www.ebmtools.org">www.ebmtools.org</a> ) and is now searchable through their database	CDC and EBM Tools Network
Publications	Preparation of manuscripts	Papers published and manuscripts submitted	CDC, IGS, UNIABDN

c) Work performed by each contractor in WP6 during the reporting period.

CDC

- Contributed to CTAM software development, testing and fine-tuning
- Developed the analysis of the governability index as a decision-support tool using CTAM
- Presentations of CTAM at various venues
- Participated at the third INCOFISH Steering Committee Meeting (in Kiel, February 2008)
- Organized the stakeholder consultations: (1) at Krabi Province, Thailand, as part of the EU-funded CHARM Project Final Workshop (August, 2007); (2) Samutprakarn

Province, Thailand (October, 2007); and (3) Bangkok, Thailand (January 2008) in conjunction with WP8 to explore the use of CTAM and EwE

- Data collection and development of case studies and prototypes for CTAM Phase II in Thailand
- Meeting with key informants to discuss data for CTAM
- Liaison with EBM Tools Network to incorporate CTAM on their database
- Lead author of D6.3 and D6.4
- Lead author and co-author of the published papers and book chapters and the submitted manuscripts

#### IGS

- Lead author of the first submitted manuscript (based on WP6.1)
- Contributed to CTAM software development, testing and fine-tuning
- Contributed to the preparation of WP6.3 and WP6.4
- Co-authors of the another submitted manuscript on CTAM (conceptual and methodological framework)
- Mass distribution of news and invitation about CTAM Phase II

#### UNIABDN

- Contributed to CTAM software development, testing and fine-tuning
- Performed sensitivity analysis on CTAM variables
- Lead discussion on GIS mapping and spatial analysis of CTAM data
- Lead discussion on possible stakeholders meeting in Scotland
- Invited Ratana to present CTAM at the Marie Curie Training Program in Crete (May 7, 2007)
- Contributed to the preparation of WP6.3 and WP6.4
- Lead author of one manuscript, and co-authors of the others
- Data collection and development of two case studies for CTAM Phase II in Scotland
- Meeting with key informants in Scotland to discuss CTAM phase II
- Lead author and co-author on manuscripts under preparation on fishers willingness for mobility
- Presentations of manuscript at conference

#### d) Deviations from the workprogram (if any), and corrective actions taken/suggested:

We were planning to develop two other case studies (in the Gulf of California and the Benguela Current LMEs) as part of Phase II. Further, we were hoping to conduct a stakeholder consultation for the North Sea model. But due to some logistic problems related to the organization of these activities, we didn't proceed. Instead, we added the case studies from the Gulf of Thailand and conducted the stakeholder consultations there.

#### e) Deliverables and Milestones

Deliverables and milestones with indication of progress are listed below in Tables S2.1 and S2.2, respectively.

#### f) Dissemination activities during the reporting period

WP6 Overview table

Planned / actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved
May 2007	Lecture at University of La Laguna, Tenerife, Canary Islands	University students, professors, researchers	Spain	40	CDC
May 2007	Lecture at the ECOSUMMER, Marie Curie Training Program, in Heraklion, Crete	University students, researchers	Global	20	CDC, UNIABDN
June 2007	CTAM website update (with Phase II)	University students, professors, researchers, government, managers, environmental organizations, general public	Global		CDC, FishBase, WP1
July 2007	Conference presentation, People and the Sea IV Conference in Amsterdam	University students, professors, researchers	Global	35	CDC
July 2007	Presentation, Coastal Zone'07 Conference in Portland, Oregon	University students, professors, researchers, environmental organizations	Global	45	CDC
Sep 2007	Conference presentation, European Symposium on Marine Protected Areas. Murcia, Spain	University students, professors, researchers	Global	40	UNIABDN
Oct 2007	Seminar, Marine Affairs Program, Dalhousie University, Halifax	University students, professors, researchers, environmental organizations	Global	30	CDC
Oct 2007	Public lecture, Canada Research Chair Lecture Series, Memorial University of Newfoundland, St. John's	University students, professors, researchers, environmental organizations, general public	Canada	85	CDC
Dec 2007	CTAM on EBM Tools Network	University students, professors, researchers, government, managers, environmental organizations, general public	Global		CDC
Jan 2008	Lecture at University of Aberdeen, U.K.	University students	U.K.	15	UNIABDN
March 2008	CTAM website update	University students, professors, researchers, government, managers, environmental organizations, general public	Global		CDC, FishBase, WP1

## WP6 Publications

### Published / in press:

Chuenpagdee, R. and Juntarashote, K. 2008. Challenges in Sustainable Management of Coastal Fisheries: Case Studies of Southeast Asia. *In*: Krishnamoorthy et al. (Eds). Integrated Coastal Zone Management – The Global Challenge. Research Publishing Services: Singapore.

Chuenpagdee, R., Agbayani, E., Atanacio, R., Juntarashote, K., Kay, R., Pierce, G., Pita, C., Traesupap, S., Wang, J. 2007. Coastal Transects Analysis Model. World Wide Web electronic publication. [www.coastaltransects.org](http://www.coastaltransects.org), Version 06/2007.

- Juntarashote, K. 2007. Introduction to Coastal Transects Analysis Model. Proceedings of CHARM's Workshop on 'Successes and Lessons Learned for Future Coastal Resource Management', Krabi, Thailand, August 22-24, 2007.
- Chuenpagdee, R., Sumaila, R., Trinidad, A., and Jentoft, S. 2007. Coastal Connections: Innovative approaches and tools for creating liveable coastal communities. Proceedings of Coastal Zone 07, Portland, Oregon, July 22-25, 2007.
- Chuenpagdee, R., Liguori, L., Palomares, M.L.D., and Pauly, D. 2006. Bottom-up, Global Estimates of Small-Scale Fisheries Catches. *Fisheries Centre Research Report* 14(8). 110p. (Available at <http://www.fisheries.ubc.ca/publications/>)
- Chuenpagdee, R. Social research for sustainable fisheries: evaluating global impact of small scale fisheries. *In*: Christensen and Maclean (eds). Thinking Big about Ecosystem-based Management. Cambridge University Press (Status: revised and accepted).

*Publications related to, benefited from and inspired by INCOFISH*

- Bundy, A., Chuenpagdee, R., Jentoft, S., and Mahon, R. 2008. If science is not the answer, what is? An alternative governance model for the world's fisheries. *Frontiers in Ecology and the Environment* 6(3):152-155.
- Salas, S., Chuenpagdee, R., Seijo, J.C., and Charles, A. 2007. Challenges in the assessment and management of small-scale fisheries in Latin America and the Caribbean. *Fisheries Research* 87 (1): 5-16.
- Charles, T., Salas, S., Chuenpagdee, R., Seijo, J.C. 2007. Preface: Evaluation and Management of Coastal Fisheries in Latin America and Caribbean. *Fisheries Research* 87(1): 1-4.
- Chuenpagdee, R. and Jentoft, S. 2007. Step zero for fisheries co-management: What precedes implementation. *Marine Policy* 31: 657-668.

Submitted:

- Chuenpagdee, R. Traesupap, S., Kungwan Juntarashote, K. Coastal Transects Analysis of Chao Phraya Delta, Thailand *In*: Hoanh et al. (Eds). Managing the Coastal Land-Water Interface in Tropical Delta Systems. (Status: 2<sup>nd</sup> revision)
- Chuenpagdee, R., and Jentoft, S. Governability assessment for fisheries and coastal systems: a reality check. *Human Ecology* (Status: under review)
- Kay, R., Bello, J.P., Juntarashote, K., Pierce, G.J., Pita, C. Travers, A. Wang, J., Chuenpagdee, R. Engaging Stakeholders in Coastal Management through Online Visualisation Tools. *Ocean and Coastal Management Journal*. (Status: 1<sup>st</sup> revision)
- Salas, S., Chuenpagdee, R., Seijo, J.C., and Charles, A. (Eds.). Coastal Fisheries of Latin America and the Caribbean: An Interdisciplinary Perspective. FAO Book Series (Status: under review).

In prep:

- Chuenpagdee, R., Juntarashote, K., Traesupap, S., Agbayani, E., Atanacio, A., Goetting, K., Kay, R.C., Pierce, G.J., Pita, C., and Wang, J. Transects analysis of coastal areas: a simplified approach (To be submitted to *Journal of Environmental Management*)
- Cristina Pita, Graham Pierce, Ioannis Theodossiou. Stakeholders' participation in Fisheries management: Fishers' perceptions of involvement. (To be submitted to *ICES Journal of Marine Science*, September 2008)

See Annex I and II below for summary representations of dissemination activities including all workpackages.

**WP Number: 7** | **WP Name: Simple indicators for sustainable fisheries**

a) Workpackage objectives and starting point of work for the reporting period

Overarching objective: To overcome overfishing by identifying, testing, and implementing simple indicators for sustainable fisheries management for direct use by fishers, fish traders, consumers, managers, and media.

Specific objectives:

1. Identify suitable indicators
2. Establish biological parameters needed for indicators for all relevant species
3. With stakeholders and public, test management by indicators
4. Analyze progress and problems

For this reporting period WP7 began working in month 25 (1<sup>st</sup> May, 2007). Main Highlights of the period are the the launching of fish rulers in Peru, Senegal and the Philippines, the mobile seafood guide, and the retailers seafood guide, all accompanied by intensive media coverage.

b) Progress towards objectives

WP 7 Objectives for the third reporting period included the completion of deliverables 7.4 and 7.5. See section c) for specifics by WP contractor. Overall, WP7 has met all objectives successfully and on time.

c) Work performed by each contractor in WP7 during the reporting period.

IFM-GEOMAR Kiel

- D.7.3: Developed an online seafood guide for mobile phones:  
[www.seafoodguide.mobi](http://www.seafoodguide.mobi)



Figure 2.7.1: The International Seafood Guide for mobile phones, compiles all available seafood advisories and allows consumers to access them through an easy-to-use mobile phone interface. With just a few clicks, users can get advice on whether a certain seafood can be enjoyed without jeopardizing its future as a food source or harming the environment. Clicking on the ruler icon will alert users to the smallest acceptable size for the seafood (whole, headless, or fillet) to be respected in order to assure the fish was not caught before it could spawn. The tool addresses consumers in 17 countries (see flags).

- D.7.4. Continued to analyze fisheries length-frequency data and stock assessment reports with respect to simple, size-based indicators. Represented INCOFISH

and sized-based management in the media, giving several interviews with reporters from print, TV and radio news.

- D.7.5. Submitted remaining indicators papers for publication, some already having been accepted at time of this writing.

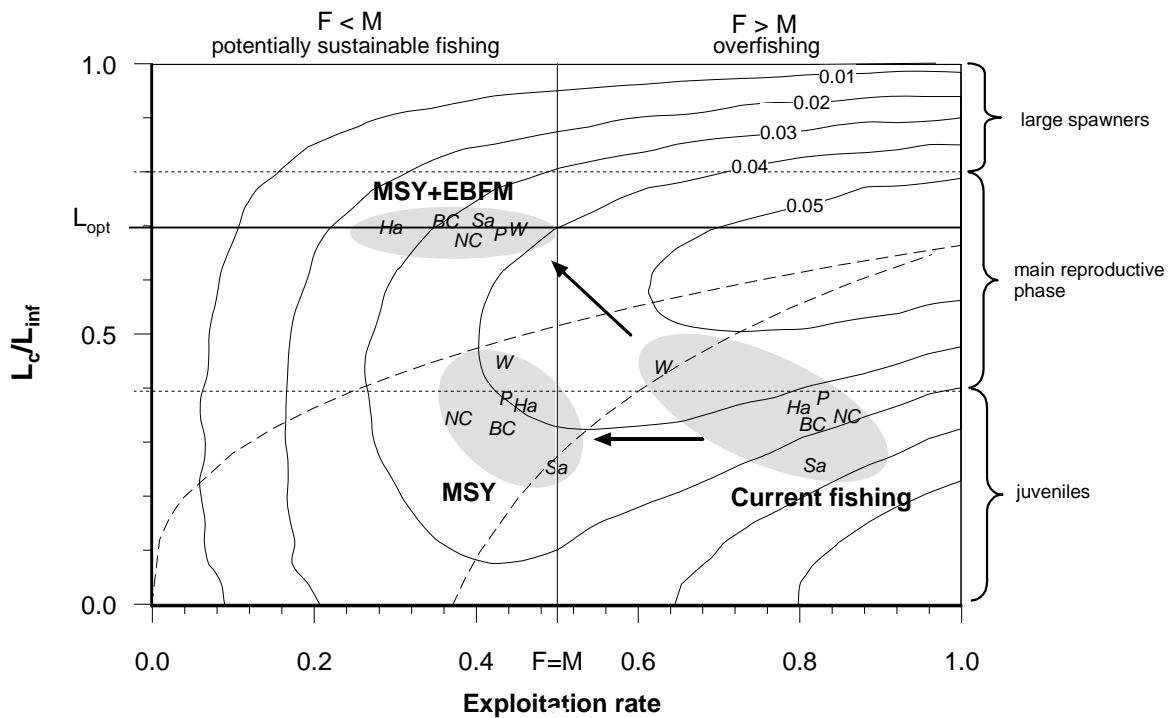


Figure 2.7.2 Isopleth diagram of relative yield per recruit ( $Y'/R$ ) as a function of size at first capture ( $L_c$ ) relative to  $L_{inf}$  ( $L_c/L_{inf}$ ) and exploitation rate ( $E = F/Z$ ), for six ground fish stocks in the North Sea and Baltic under three different fishing scenarios, where NC=North Sea Cod, BC= Baltic Cod, Ha=Haddock, W=Whiting, Sa=Saithe, and P=Plaice. The dashed lines indicate maximum  $Y'/R$  for a given  $L_c$  (bottom) or  $E$  (top). Traditional fisheries management aims for MSY, which should fall between these lines (Beverton and Holt 1957), whereas ecosystem-based fisheries management (EBFM) aims for minimal impact on the stock and the ecosystem, which is achieved at  $L_{opt}$ .

CDF Galápagos

- D.7.5 Published several papers on the reproductive biology and maturity of spiny lobsters, slipper lobsters and sea cucumbers

CABAL Nicaragua

- D.7.2. Collected maturity and length-frequency data on two species in Bluefields Bay
- D.7.4. Applied maturity indicators as part of a larger integrated coastal-zone management and monitoring system being developed for Bluefields Bay. Convinced Nicaraguan fisheries management agency to raise the minimum legal size at first capture of a Snook species in Bluefields Bay based on the results of their work.
- D 7.5. Published a coastal zone management report for Bluefields Bay.

CRODT Senegal

- D7.4: Developed and launched a Senegalese Fish Ruler. Press event was held together with the Senegalese Ministry of Fisheries and WWF Senegal.  
D7.4: Developed a fish-ruler for Senegal including eight important and presently threatened species: *Pagellus bellottii*, *Galeoides decadactylus*, *Sardinella aurita*, *Pomadasys jubelini*, *Cynoglossus canariensis*, *Pseudotolithus senegalensis*, *Arius*

*parkii*, and *Epinephelus aeneus*. The FishBase team in the Philippines provided technical help with the ruler development. A partnership was obtained with the national office of WWF in Dakar for the promotion of the fish-ruler.

- D.7.5: Finalized a publication about use of simple indicators to make a diagnostic on exploitation for some important species in Senegal.

#### IMARPE Peru

- D.7.5: Drafted and submitted a publication “Overfishing and El Niño cause reproductive failure in Peruvian hake, *Merluccius gayi peruanus*”. Also contributed to “global cost of overfishing” publication in progress.

#### MCM-DEAT South Africa

- D7.2: Provided length based indicators as per the spreadsheet template for four major commercial species: *Merluccius capensis*, *M. paradoxus*, *Engraulis encrasicolus*, and *Sardinops sagax*. The only length data immediately available for *M. capensis* and *M. paradoxus* was for the time period 1985-1995. The remainder of the research survey data was collected after 1995 has since been extracted from an old DOS based database and will require considerable manipulation before it can be added to a newly developed Access database.
- D.7.5 Several papers have been published, please see table below. Tracey Fairweather has also offered to take over the lead on the all WP7 indicators paper.

#### MEI Estonia

- MEI, not officially part of WP7, concentrated on contributions to WP2 for the final reporting period.

#### PSU Thailand

- D7.2. Review of bibliography to collect all pertinent biological information for at least 25 species of fishes, 4 species of cephalopods and one species of swimming crab. Continued ongoing biological study for nemipterids in the Gulf of Thailand, looking for trends in our simple indicators.
- D.7.4. Designed and printed a size-at-maturity poster for distribution in Thai fish markets. Applied simple indicators to *Rastrelliger brachysoma* using available length-frequency data from 2002-2005.
- D.7.5: Working on a Thai version of a fisheries indicators review and the all-WP7 paper applying simple indicators to Gulf of Thailand fisheries in order to evaluate the effectiveness of the closed season.

#### UNIABDN UK

- Cristina Pita has been involved in data collection on landings from Scottish waters and the Shetland area. She has also been involved in the analysis on the trends in size and abundance of demersal fish in Scottish waters using data provided by FRS marine laboratory. She has been carrying out Interviews – attitudes of fishermen to an increase in the minimum landing size of species. She has also contributed to the collective WP7 paper on indicator case studies.

#### d) Deviations from the workprogram, and corrective actions taken/suggested:

No deviations to be reported for the 3<sup>rd</sup> project year.

#### e) Deliverables and Milestones

Deliverables and milestones with indication of progress are listed below in Tables S2.1 and S2.2, respectively.

f) Dissemination activities during the reporting period

WP7 Overview table

Planned / actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
April 2007	EU FP 6 project Profet Policy workshop: Represented INCOFISH WP7 and brought simple indicator use for fisheries management in the Baltic to the table	Research, industry	Estonia, Latvia, Lithuania, Poland, Finland, Sweden, Germany, Russia, Denmark	70	MEI
June 2007	Fish size poster for Gulf of Thailand launched	Public, Industry, Media	Thailand	50	PSU
July 2007	MARE People and the Sea Conference, Amsterdam, NL	Research (mostly social-science)	International	25	IfM-GEOMAR
Dec 2007	<a href="http://www.seafoodguide.mobi">www.seafoodguide.mobi</a> launched and made public	Public, Media, Industry	International	?	IfM-GEOMAR, FIN, UNIABDN, CRODT
Jan 2008	Radio Interview: Radio interview with German radio station about Mobile seafood guide and the INCOFISH project in general.	Public	Germany	100s	IfM-GEOMAR
Feb 2008	Interview for Audobon Magazine	Public, Conservationist	USA and other English Speaking	?	IfM-GEOMAR
Feb 2008	<b>Size Matters: How Precautionary Single-Species Management Can Contribute To Ecosystem-based Fisheries Management</b>	Research	International	?	
April 2008	Fish Ruler for Senegal launched	Public, Media, Industry	Senegal	50	CRODT
	Public Television Interview on behalf of launching of fish ruler for Senegal	Public	Senegal	?	CRODT
In progress	Publication: Diagnosis of the state of exploitation of some demersal species in Senegalese waters.	Research, Government	Senegal, other Western Africa	?	CRODT, IFM-GEOMAR

**WP7 Publications**

Published / In press

Fairweather TP, Hara M, van der Lingen CD, Raakjaer Nielsen J, Shannon LJ, Louw GG, Degnbol P, Crawford RJM (2006a) The knowledge base for management of the

- capital-intensive fishery for small pelagic fish off South Africa. *African Journal of Marine Science* 28: 645-660.
- Fairweather TP, van der Lingen CD, Booth AJ, Drapeau L, van der Westhuizen JJ (2006b) Indicators of sustainable fishing for South African sardine (*Sardinops sagax*) and anchovy (*Engraulis encrasicolus*). *African Journal of Marine Science* 28: 661-680.
- Froese, R., A. Stern-Pirlot and K. Kesner-Reyes. 2008. Out of new stocks in 2020: a comment on "Not all fisheries will be collapsed in 2048". Accepted by Marine Policy. PDF <http://filaman.ifm-geomar.de/ifm-geomar/rfroese/NoStocksJMPO-D-08-00017.pdf>.
- Froese, R., A. Stern-Pirlot, H. Winker and D. Gascuel. 2008. Size Matters: How Single-Species Management Can Contribute To Ecosystem-based Fisheries Management. *Fisheries Research* 92:231-241. DOI 10.1016/j.fishres.2008.01.005
- Froese, R., A. Stern-Pirlot, D. Pauly (in Press). "Out of new stocks in 2020: a comment on "Not all fisheries will be collapsed in 2048"" Marine Policy.
- Froese, R., A. Stern-Pirlot and K. Kesner-Reyes. 2008. Out of new stocks in 2020: a comment on "Not all fisheries will be collapsed in 2048". Accepted by Marine Policy. PDF <http://filaman.ifm-geomar.de/ifm-geomar/rfroese/NoStocksJMPO-D-08-00017.pdf>
- Froese, R., A. Stern-Pirlot, H. Winker and D. Gascuel. 2008. Size Matters: How Single-Species Management Can Contribute To Ecosystem-based Fisheries Management. *Fisheries Research* (In press, DOI 10.1016/j.fishres.2008.01.005)
- Hearn A & MV Toral-Granda (2007). Reproductive biology of the red spiny lobster *Panulirus penicillatus* and the slipper lobster *Scyllarides astori* in the Galápagos Islands. *Crustaceana* 80 (3): 297–312.
- Stern-Pirlot, A and R. Froese (2006) Can the knowledge society turn around 500 years of overfishing? 10 pages. In: Proceedings of the Thirteenth Biennial Conference of the International Institute of Fisheries Economics and Trade, July 11-14, 2006, Portsmouth, UK: Rebuilding Fisheries in an Uncertain Environment. Compiled by Ann L. Shriver. International Institute of Fisheries Economics and Trade, Corvallis, OR, USA, 2006. CD ROM. ISBN 0-9763432-3-1
- Toral M.V. & P. Martinez (2007) Reproductive biology and population structure of the sea cucumber *Isostichopus fuscus* (Ludwig, 1875) (Holothuroidea) in Caamaño, Galápagos Islands, Ecuador. *Marine Biology*.
- Wosnitza, C., Ballon M. Overfishing and El Niño cause reproductive failure in Peruvian hake, *Merluccius gayi peruanus*. (submitted) Hearn A & JC Murillo (2008) Life history of the red spiny lobster *Panulirus penicillatus* (Olivier, 1791) (Decapoda: Palinuridae) in the Galapagos Marine Reserve, Ecuador. *Pacific Science* 62 (2).

#### Submitted

- Wosnitza, C., Ballon M. Overfishing and El Niño cause reproductive failure in Peruvian hake, *Merluccius gayi peruanus*. (submitted).

#### In prep

- Changes in size composition of spiny lobster *Panulirus penicillatus* and sea cucumber *Isostichopus fuscus* in the Galápagos Marine Reserve – a combination of overfishing and sporadic recruitment (planned submission date: unknown)
- Global Cost of Overfishing (planned submission date: end of 2007)
- Applying sized-based simple indicators under various fisheries management scenarios (indicators case studies from WP7 members/fisheries). (planned submission date: end of 2007)
- Historical trends in stocks and associated indicators in Scotland. (planned submission date: unknown)
- Trends in mean length-at-maturity of four Peruvian demersal fish species: searching for common indicators (planned submission date: soon)

- Population biology of assessment of [Nemipterus spp.], in the Gulf of Thailand (planned submission date: unknown).

See Annex I and II below for summary representations of dissemination activities including all workpackages.

WP7 would like to thank the Commission for enabling all the valuable work of the INCOFISH participants around the globe. We have high hopes that the tools and knowledge developed during these three years will help toward a marked improvement in fisheries and coastal zone management.

<b>WP Number: 8</b>	<b>WP Name: Valuation of Coastal Ecosystem Products and Services</b>
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a) Workpackage objectives and starting point of work for the reporting period

Overarching objective: To overcome overfishing by providing and analysing economic and social data relevant for sustainable fisheries management.

Specific objectives:

1. Provision of social and economic data to the project database;
2. Valuation of marine ecosystem goods and services;
3. Develop economic and social indicators of ineffective management;
4. Develop policy options for sustainable coastal resources management.

For this reporting period WP8 began working May 1, 2007. Highlights are the many scientific publications, uptake by the media and related impact, culminating in a briefing of the G77 group of developing countries at the United Nations Meeting on 3rd October 2007.

b) Progress towards objectives

Re (1): Work is completed. A report on this as part of Deliverable 1 is available on the INCOFISH portal at [www.incofish.org/Workpackages/WP8/WP8Downloads.php](http://www.incofish.org/Workpackages/WP8/WP8Downloads.php)

Re (2): Work is completed on the valuation of goods and services from the Benguela and Gulf of Thailand (GoT) large marine ecosystems. Ecosystem-economic models of the Benguela and GoT have been developed. Habitat and non-market values from marine ecosystems have been studied and reported in our Second Deliverables papers submitted to the primary literature.

Re (3): WP contractors have developed different indicators: CDC on a public sentiment index for ecosystem management; UNAM on subsidies and a bioeconomic invulnerability index; Primex on a Political sensitivity index, Western Cape and UNAM on poverty index, and UiT on an overcapacity index. The subsidies work is completed, with several papers published in the primary literature.

Re (4): Each project team member worked on at least one policy option derived from the results of their work on this project. These have been compiled into our Deliverable 4 and some of the ideas published in a number of outlets.

c) Work performed by each contractor in WP8 during the reporting period.

UNAM

Workpackage coordination; market and social database; valuation and indices development, contribution to 3<sup>rd</sup> and 4<sup>th</sup> Deliverables, 3<sup>rd</sup> annual and final report.

CDC

Economic and social database; indices development; contribution to 3<sup>rd</sup> Deliverable. Ratana Chuenpagdee presented her work on indicators and CTAM at Coastal Zone 2007 Conference in Portland. Ratana has also been working on poverty indices for Thailand;

PRIMEX-FAME

Non-market valuation; indices development, contribution to 3<sup>nd</sup> Deliverable.

UiT

Institutional data; indices development; Ecopath with Ecosim; habitat valuation; contribution to 3<sup>nd</sup> Deliverable. Abbie Trinidad presented work non market values at the Coastal Zone 2007 Conference in Portland. She has also been developing a draft paper on the same.

Abbie has also been developing a preliminary list of "buzz words" for calculating political sensitivity indices and poverty indices for the Philippines; She has also been working with Work package 1 to develop a visual tool which shows summary information on non-market valuation studies in coastal ecosystems.

UWC

Univ. of Western Cape: social analysis, poverty index; contribution to 3<sup>nd</sup> Deliverable.

d) Deviations from the work program (if any), and corrective actions taken/suggested:

No deviations from the work program are to be reported for the third project year.

e) Deliverables and Milestones

Deliverables and milestones with indication of progress are listed in Tables S2.1 and S2.2, respectively.

f) Dissemination activities during the reporting period (see also Annex I and II below)

WP8 Overview table

Planned / actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved
Oct 2007	Claire Armstrong: Presented; Habitats and fisheries; A missing link? At the SINTEF workshop; Value Creation in the Nordic Countries of Fisheries and Aquaculture in Akureyri, Iceland,	Research	Global: mostly developing countries	80	UiT
Oct 2007	Rashid Sumaila: Gave a briefing to the G77 at the United Nations, Oct. 3; 2007. See attachments; presentation at a workshop on the Economics of Ecosystem Based Fisheries Management, Washington, D.C,	Developing country ambassadors and representatives at the UN	Developing countries	50	UNAM
Oct 2007	Rashid Sumaila, contributed to the cover article for the most recent issue of Conservation Magazine (a publication of the Society for Conservation Biology): see <a href="http://www.conbio.org/CIP/article30713.cfm">http://www.conbio.org/CIP/article30713.cfm</a> ;	Research, policy makers	<b>Global</b>	Large	UNAM
Aug 2007	Our recent paper on ex-vessel prices (Sumaila et al. in <i>Journal of Bioeconomics</i> ) was cited by Steven D. Levitt the famous co-author of <i>Freakonomics</i> : see <a href="http://freakonomics.blogs.nytimes.com/2">http://freakonomics.blogs.nytimes.com/2</a>	Research, policy makers, general public	Global	Large	UNAM

Planned / actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved
	<a href="http://007/08/30/shrimponomics/">007/08/30/shrimponomics/</a>				
Aug 2007	Abbie Trinidad presented work on non market values at the Coastal Zone 2007 Conference in Portland. She has also been developing a draft paper on the same.	Research	Global, mainly North America	Over 100	PRIMEX-FAME
Aug 2007	Ratana Chuenpagdee presented her work on indicators and CTAM at Coastal Zone 2007 Conference in Portland.	Research	Global, mainly North America	Over 100	CDC
March 2007	Rashid convened two special sessions, one on discounting and the other on fisheries subsidies at the North American Association of Fisheries Economists (NAAFE) conference,	Research	Mainly North America	Over 100	UNAM
Feb 2007	Sumaila gave two talks, one at the 2007 AAAS Annual Meeting in San Francisco, on subsidies to deep sea fisheries: <a href="http://www.aaas.org/meetings/Annual_Meeting/">http://www.aaas.org/meetings/Annual_Meeting/</a> . The second at the Woodrow Wilson Centre for International Scholars: <a href="http://www.wilsoncenter.org/">http://www.wilsoncenter.org/</a> on globalization and fisheries in developing countries, Feb 22, 2007.	Research, policy makers, media, general public	Global	Large	UNAM
Jan 2007	Jannike Falk Petersen: Participated in the Arctic Frontiers conference and PhD workshop, Tromsø. Poster presentation "Ecosystem-based modelling for management of the Barents Sea benthos and related fisheries". PhD workshop presentation "Arctic ecosystems -are they vulnerable?"	Research	Arctic countries	30	UiT
Jan 2007	Claire Armstrong: Participated in the Norwegian Economists Annual Conference (Forskermøtet), Tromsø. Presentation: Effects of foreshortening of transferred quota in an ITQ market.	Research	Norway	30	UiT

## WP8 Publications

- Abdallah, P.R. and Sumaila, U.R. (2007). A historical account of Brazilian policy on fisheries subsidies. *Marine Policy* 31, 444-450.
- Ainsworth, C.H. and U.R. Sumaila, 2005. Intergenerational valuation of fisheries resources can justify long-term conservation: a case study in Atlantic cod (*Gadus morhua*). *Can. J. Fish. Aquat. Sci.* 62: 1104–1110.
- Alder, J., S. Hopkins, W. W. L. Cheung and U. Rashid Sumaila (2006). Valuing Marine Habitats: Fantasy or Fact? Fisheries Centre Working Paper #2006-03, The University of British Columbia, Vancouver, BC, Canada.
- Armstrong, C.W. and J. Falk-Petersen (in press). Habitat-fisheries interactions. A missing link? *ICES Journal of Marine Science*.
- Armstrong, C.W. (2007). A note on the ecological-economic modelling of marine reserves. *Ecological Economics* 62, 242-250.

- Bailey, M., Rotinsulu, C., and Sumaila, U.R. (2008) The Migrant Anchovy Fishery in Kabui Bay, Raja Ampat, Indonesia: Catch, Profitability, and Income Distribution. *Marine Policy*, 32, 483-488.
- Berman, M. and U.R. Sumaila (2006). Discounting, amenity values and marine ecosystem restoration. *Marine Resource Economics*. 21 (2): 211-219.
- Cheung, W. and Sumaila, U.R. (in press). Trade-off between conservation and socio-economic objectives in managing a tropical marine ecosystem. *Ecological Economics*.
- Clark, C.M., Munro, G., and Sumaila, U.R. (2007). Buyback, subsidies, the time consistency problem and the ITQ alternative. *Land Economics*, 83(1), 50-58.
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## Media Coverage:

*2008 Media Dissemination by Work Package 8 leader:*

- March 4: National Geographic Strange Days on Planet Earth series [Overfishing Impacts: Interview with Dr. Ussif Rashid Sumaila](#) (video clip)
- March 9: New York Times Editorial [Oceans at Risk](#)
- Summary of AAAS related [media releases](#) on tuna management
- March 3: Globe and Mail [WTO weighs if EI for fishermen is an unfair subsidy](#)
- February 20: Regina Leader Post [Tuna could see cod-like collapse](#)
- February 20: The National Post [World's tuna stocks under seige, say scientists](#)
- February 20: The Vancouver Sun [Conservation measures needed to save tuna: experts](#)
- February 20: Innovations report, Germany [Learning from cod collapse to save tuna](#)
- February 18: UBC.ca [UBC scientist invokes future generations to save tuna populations from collapse](#)
- February 5: The Daily Green [5 Ocean Research Breakthroughs on the Horizon](#)
- February 5: University of Miami Rosentiel School of Marine & Atmospheric Science [2008 Pew Fellowship in Marine Conservation awarded to Dr. Ussif Rashid Sumaila](#)
- February 5: Vancouver Sun [UBC professor wins award to study overfishing](#)
- January 28: Telegraph UK [A fifth of world's fish landings 'are illegal'](#)
- January 21: New York Times [Until All the Fish Are Gone](#)

*2007 Media Dissemination by Work Package 8 leader:*

- December 13: Time magazine [Laying Waste to the Deep Sea](#)

- December: veja.com [Multiplicacao dos peixes \(in Portugese\)](#)
- November 24: The Gazette, Memorial University [Coastal project team negotiates its terms of research](#)
- November 1: UBC Reports [Fishing For Trouble Governments subsidize plundering of oceans](#)
- October 19: Intrafish.com [Aquaculture's growth rate actually is declining](#)
- September 19: Time Magazine: [Fish Farming's Growing Dangers](#)
- July 18: Wall Street Journal Online: [Global Fishing Trade Depletes African Waters](#)
- July 2: Centrepoint: Woodrow Wilson International Centre for Scholars [Fishing for a Secure Future](#)

### Radio

- July 1, 2008: CBC: [Lament for lost way of life in Newfoundland 15 years after cod moratorium](#)
- April 12, 2008: Voice of America News: [Deep-Sea Trawlers Threaten Marine Life](#)  
April 3: Globe and Mail, Canada: [We are fishing our oceans to death](#)

See Annex I and II below for summary representations of dissemination activities including all workpackages.

**WP Number: 9****WP Name: Impacts of ecotourism**a) Workpackage objectives and starting point of work for the reporting periodOverarching objective:

Provide scientific guidelines for management of marine areas where ecotourism activities are being developed.

Specific objectives:

1. To determine the most appropriate criteria for evaluating the effects of marine ecotourism practices in multi-use reserves (carrying capacity and/or LAC)
2. To develop and test chosen criteria with appropriately designed and defined indicator categories
3. To elaborate and implement efficient, cost-effective monitoring and evaluation protocols (integrating biophysical, socio-economic, user perceptions and governance metadata)
4. To assess human impacts on biological communities at specific case study sites and the implications of environmental variability (ENSO, PDO, global warming etc) upon sustainable business practices in the Equatorial Pacific
5. To apply lessons learned to new and existing decision support systems and mechanisms (e.g. coastal zoning etc.) for MPA conservation and management
6. To establish a regional conservation network (Eastern Tropical Pacific) for ecotourism practices within developing frameworks (e.g. Seascape etc.).

Activities for this reporting period started 1<sup>st</sup> May, 2007

b) Progress towards objectives

## Re (1):

Based on the Criteria and Indicator (C+I) System created by WP9 work, a visitor management plan based on the Visitor Experience and Resource Protection management methodology (VERP) was created for the Galapagos Marine Reserve. Representatives of the other MPAs involved in WP9 presented their suggestions of adequate management methodologies to their administrations.

## Re (2):

14 indicators proposed during the second year as part of a regional battery were applied in the field all along 2007, in the four marine protected areas used as case studies, with the objective to test the selected criteria. This counted on the support of the administrations of the areas as well as on the involvement of tour operators.

Out of the 14 indicators 12 were identified to be pertinent, feasible, clear, reliable and comparable when applied in the four MPAs involved. Methodological limitations or deficiencies were analysed and discussed and improvements were suggested.

## Re (3):

Improvements on the monitoring protocols for the 12 indicators selected were made and the step-by-step tool initiated during the second project year was also improved. The tool is available at [www.incofish.org/Workpackages/WP9/Tourism\\_Impact.php](http://www.incofish.org/Workpackages/WP9/Tourism_Impact.php). Later, the step-by-step tool will be moved to the website of the Marine Corridor of the Eastern Tropical Pacific (CMAR). Therefore, the tool and all WP9 products will be available for the general public and marine area administrations worldwide after Incofish finishes.

## Re (4):

Biophysical indicators directed to determine cause/effect relationships between human behaviour and damages on the marine environments and animal reactions were applied systematically during 2007.

Re (5):

Theoretical contexts for establishing threshold values were stated as well as a context for management responses. In Galapagos, those contexts were transformed into specific threshold values and management responses that have started to be implemented by the Public Use Unit of the Galapagos National Park. The four Marine Protected Areas created Codes of Conduct to be directed to tour operators and guides as a specific management response that seeks to diminish effects of visitors on animal behaviour and substrate damages.

Re (6):

WP9 members participated in the second meeting of the Tourism Network led by the Marine Corridor of the Eastern Tropical Pacific (CMAR). As a result, the C+I System is now being implemented in Coco's Island Marine Conservation Area, Costa Rica, as part of a commitment by the network to implement the C&I System in all the marine areas of CMAR.

Since all WP members worked closely as technical advisors to government authorities and user groups in each National Park, INCOFISH WP9 activities were closely linked to a variety of ongoing projects with management outcomes and key contacts in the respective National Park Services. These included interactions with other NGOs such as WWF, CI, Mar Viva, WildAid, or TNC. Where compatible goals exist we hope to continue to increase the project audience at the level of the Eastern Tropical Pacific.

#### c) Work performed by each contractor in your WP during the reporting period

##### Charles Darwin Foundation (CDF)

developed systematic field work on the application of monitoring protocols of Conservation and Visitor Satisfaction aspects on *Aggressor*, *Sagitta*, *Sky Dancer*, *Alta*, *Mary Ann* and *Evolution* live-a-board ships. Socio-economic and management indicators were measured considering information from 2004 to 2007. A six-month monitoring report and a final annual monitoring report were made including information for 14 indicators proposed in an original regional battery developed by WP9 at the end of 2006 but, also, four additional indicators specifically determined as pertinent, feasible, clear, comparable and reliable for Galapagos were applied. In the annual report, the condition for each of the 18 indicators was diagnosed according to threshold values specifically defined for Galapagos, and a concrete management response was suggested for each indicator.

This exercise was not only made in terms of testing the applicability and value of the System of Criteria and Indicators (C&I) proposed by WP9 but was part of the integration of the whole process in the Galápagos National Park tourism management system and, hence, counted on the absolute support of the Public Use Unit of the Galapagos National Park Direction.

A Visitor Management Plan for Ecotourism activities in the Galapagos Marine Reserve was made based on the Visitor Experience and Resource Protection methodology. It involved the development of a participatory process with tour guides and dive masters as well as scientists to characterize the 83 marine visit sites of the Galapagos Marine Reserve as the framework for this plan that will guide the application of the C&I System. Threshold values, with specific application to the Galapagos Marine Reserve were included in the plan for the 18 indicators defined as appropriate according to the adaptation of C&I System of WP9.

A presentation of the C&I System was made in the II Congress of National Parks and other Protected Areas of Latin America, held in Bariloche, Argentina, from September 29<sup>th</sup> to October 8<sup>th</sup>. A Code of Conduct created from the information generated through the C&I system was officially included as part of the official training courses offered by the park to more than 300 natural and SCUBA diving guides. A printed version of this Code will be distributed among tour guides, dive masters and tour operators and a digital version will be included in the National Park's website in 2008.

CDF represented WP9 in the 4<sup>th</sup> Steering Committee Meeting held in Kiel, Germany, on February 21<sup>st</sup> and 22<sup>nd</sup>. CDF was in charge of producing three scientific papers based on the information generated through the C&I system and of making significant improvements to a Step-by-step-tool to be uploaded at Incofish site and created as a practical tool for the application of the C&I system by the administrations of marine areas around the world.

### Fundacion Malpelo

Work carried out by the staff of Fundacion Malpelo focused on gathering data related to the 14 indicators of the Criteria & Indicator (C&I) System that were proposed to be tried at the two areas belonging to the Colombian territory, Sanctuary of Fauna and Flora Malpelo and Gorgona National Natural Park. Nearly 50% of tourism activities were monitored including diving, trailing, fauna and landscape watching, that are carried out at these two protected areas, identifying the applicability of each indicator based on first hand data. Likewise, secondary data were revised for certain indicators that required office work, which was obtained from archives of Colombian National Natural Parks. The evaluation of all indicators was done jointly with other members of WP9 from Ecuador and further work was carried out to integrate this impact assessment methodology as part of tourism management actions at the protected areas that are part of the Tropical Eastern Pacific Marine Corridor (CMAR).

Finalized the "Code of Good Practise" for marine park Malpelo. The code is a guide that contains several recommendations for each activity that takes place in Malpelo. The code has been implemented in the tour cruises, explaining to tourists and tour operators the recommendations to avoid undesirable impacts on the protected area. In general, all the tour operators are using the code and with the document, we hope to involve the total of tourist when we can not accompany a cruise. Some recommendations have been implemented for several years, but especially in the three years of the INCOFISH project have been adjusted, improved and others recommendations incorporated as new part of the code).

### The Institute of Applied Ecology (USFQ-ECOLAP)

developed topics of discussion concerning management of the protected area, gave advice to tourism operators, park rangers, local government tourism authorities and natural guides. Information was generated through environmental education, governance processes, conflict resolution, and comparison of biological biodiversity between visit sites and extracting zones, as well as fisheries management.

The management tool "Limit of Acceptable Change" (LAC) was applied for Machalilla National Park as a way to unify the VERP methodology (part of LAC's family methodologies). LAC is anticipated to be a system that will help mature and reinforce the management capacity of the area until a more complete tool can be used.

Even though the management processes in Machalilla are just starting, the significant involvement of local key actors (operators, guides, administrator) reveal a great potential to continue monitoring field work and to adapt to new processes, as well as to make progressive adaptations to the products generated by Incofish.

The INCOFISH members of the four Marine Protected Areas participated in the 3<sup>rd</sup> Workshop of WP9 developed in Machalilla, Ecuador, from January 14<sup>th</sup> to 20<sup>th</sup>, 2008. The regional battery of Criteria and Indicators originally suggested at the end of 2006 was then redefined with only 12 indicators out of 14, because two indicators were considered non pertinent and unfeasible by three or all of the four MPAs used as study cases. The monitoring protocols related to those 12 indicators were improved and theoretical contexts for the threshold values as well as contexts for management responses related to each of them were proposed.

A Code of Conduct for each of the four MPAs was created counting, in each case, with the participation of representatives of the administrations, tour operators and guides to guarantee its future application. Additionally, five scientific publications derived from WP9 work and data were produced and submitted to international journals.

d) Deviations from the workprogram and corrective actions taken/suggested:

No deviations are to be reported for the third year of the project.

e) Deliverables and Milestones

Deliverables and milestones of WP9 with indication of progress are listed in Tables S2.1 and S2.2, respectively.

f) Dissemination activities during the reporting period

WP9 Overview table

Planned / actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved
Sept 2007	Oral Presentation in the II Latin American Congress of Protected Areas, Bariloche, Argentina	Guides and tour operators	International Ecuador	International, with emphasis in Latin Americans and local at the level of Galapagos and Machalilla	CDF, ECOLAP
May 07 – April 08	Direct e-mailing	Government Environmental Authorities, guides and tour operators	Ecuador	Local at the level of Galapagos and Machalilla	CDF, ECOLAP

**WP9 Publications**

Cubero-Pardo P. 2008. Code of Conduct for Ecotourism Activities in Visit Sites of the Galápagos Marine Reserve. Official Document of the Galapagos National Park Direction directed to Operators, Guides and Visitors. Charles Darwin Foundation. Pp. 25. (English digital version and Spanish Printed Version).

Cubero-Pardo P., H. Zambrano-León, L. Chasqui-Velasco, C. Martínez-Iglesias, P. Herrón-Pérez y G. Reck 2007. Contribución al manejo de turismo en ecosistemas marinos: Criterios e Indicadores para Evaluar el Impacto del Ecoturismo en Áreas

- Marinas Protegidas. II Congreso de Parques Nacionales y otras áreas Protegidas. Bariloche, Argentina. Pp. 9. In press in Congress Proceedings.
- Cubero-Pardo P. Behavioral responses of marine megafauna to scuba diving tourism in the galapagos marine reserve. Submitted.
- Cubero-Pardo P., P. A. Herrón-Pérez and F. González-Pérez. Assessment of the effect of scuba diving on sharks in two Marine Protected Areas of the Eastern Tropical Pacific. Submitted.
- González-Pérez F. and P. Cubero-Pardo. *In prep.* Efecto a corto plazo de actividades turísticas en el comportamiento de fauna representativa de las Islas Galápagos, Ecuador.
- Martínez-Iglesias C. Assessment of the effects of Marine Ecotourism on whales in the Machalilla National Park, Ecuador. Submitted.
- Zambrano-León H., C. Martínez-Iglesias, P. Herrón-Pérez, L. Barreto y P. Cubero-Pardo. Indicadores de impacto para evaluar el efecto del ecoturismo en áreas marinas protegidas. Submitted.

See Annex I and II below for summary representations of dissemination activities including all workpackages.

<b>WP Number: 10</b>	<b>WP Name: Legal Instruments</b>
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a) Workpackage objectives and starting point of work for the reporting period

Overarching objective:

The WP analysed the national and international legal framework with a focus on sustainable use of marine living resources, both in overfished and surplus regions, taking into account legal structures as they relate to increasing pressure on resources, options for managing of resources, and options for sharing of benefits.

Work for this reporting period started 1<sup>st</sup> May 2007 (month 25). Highlights are the completion of in-depth analyses of the legal framework applying to fisheries in Europe and in six developing countries, leading to a new 'legal clinic' approach towards solving the many apparent contradictions and shortcomings. To assure wide availability, these results will be published in a book distributed by IUCN.

b) Progress towards objectives

Objective: Analysis of legal structures relating to increasing pressure on resources and options for managing of resources:

Major achievements during this reporting period were:

- Completed D 10.2a (Brazil country report) - APRENDER, UNI HB
- Advanced D 10.2b (Nicaragua country report) - CABAL, S.A., UNI HB
- Completed D 10.2c (Mexico country report) - UNI HB (via subcontract)
- Completed D 10.3a (Namibia country report) - UNAM2, UNI HB
- Completed D 10.3b (Kenya country report) - UNI HB (via subcontract)
- Completed D 10.4 (Indonesia country report) - UNI HB (via subcontract)
- Completed D 10.5 (EU report) and D 10.6 b) (Allocation and management of EEZ fisheries resources: an in-depth legal analysis in comparative perspective) - UNI HB
- Completed D 10.6 a) (Summary comparison of national legal instruments for the promotion and management of marine fisheries), D 10.7 (Allocation and management of EEZ fisheries resources: an in-depth legal analysis in comparative perspective) and D 10.8 (Overall synthesis; recommendations) - UNI HB

c) Work performed by each contractor in your WP during the reporting period.

UNI HB

- Organised and held a side-event to the European Conference on Maritime Policy on 'Sea-Use Planning in the EU Coastal and Exclusive Economic Zones' in Bremen on 2 May 2007.
- Communication with other WPs and external institutions.
- Scientific research on, and advancing of deliverables.
- Coordination and supervision of all deliverables.
- Addressed miscellaneous administrative tasks.
- Dissemination activities (see section 3.)

APPRENDER

Completed D 10.2a (Brazil country report).

UNAM

Completed D 10.3a (Namibia country report).

CABAL S.A

Advanced D 10.2b (Nicaragua country report).

d) Deviations from the workprogram (if any), and corrective actions taken/suggested:

Deliverable D 10.2b (country report Nicaragua) could not be submitted in time. A draft was produced and commented by WP 10 coordinators, but the final version is still to be completed. Submission is to be expected by end of June 2008. D 10.2b was a complimentary additional commitment. It was not part of the Incofish contract and did not require funding from the Incofish budget.

e) Deliverables and Milestones

Deliverables and milestones with indication of progress are listed in Tables S2.1 and S2.2, respectively.

f) Dissemination activities during the reporting period

WP10 Overview table

Planned/actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved
Continuing	WP 10 web-sites <ul style="list-style-type: none"> <li>• INCOFISH portal</li> <li>• New FEU (UNI HB) portal, <a href="http://www.feu.uni-bremen.de/en/projects.html">http://www.feu.uni-bremen.de/en/projects.html</a></li> </ul>	(Environmental) jurists, academics, fisheries managers	Coastal states	?	UNI HB, Fishbase
May 2007	Side-workshop to the European Conference on Maritime Policy: 'Sea-Use Planning in the EU Coastal and Exclusive Economic Zones'	Professionals (IOs, academics and administrative staff)	Belgium, Germany, Netherlands, Portugal, UK	50	UNI HB
May 2007	Presentation at the conference 'Sustainable Development in National and International Law. 20 years after Brundtland', held in Oslo on May 2 and 3	Academics, professionals	USA, Canada, Norway, Denmark, Sweden, Germany	50	UNI Oslo
October 2007	Seminar 'Introduction to the law of the seas'	PhD students of Graduate School 'Global Change in the Marine Realm' (GLOMAR), University of Bremen	World-wide	15	UNI HB
March 2008	Presentation and consultancy at international conference on the evaluation of fisheries on seahake, 24-28 March 2008, Lima, Peru	Academics, professionals	Peruvian and international	50	IMARPE Lima

**WP10 Publications**

- Kries, C. von, and Gerd Winter, Meeresnutzungen und Meeresökosysteme als Rechtsproblem (Uses of seas and marine ecosystems in legal perspective), 20 pages, to be submitted to "Natur und Recht".
- Markus, T., Promotion and management of marine fisheries in the European Union, Europa Law Publishing (Groningen), 250 pages, in process of editing
- Markowski, M., International requirements national implementation of offshore fisheries management, Europa Law Publishing (Groningen), 230 pages, in process of editing
- Pestke, S., Die Zulassung von Offshore-Windenergieanlagen (The legal regime of offshore wind energy installations), Nomos Verlag (Baden-Baden) 2008, 280 pages
- Wille, D., Rechtsprobleme des Integrierten Küstenzonenmanagement (Legal Aspects of Integrated Coastal Zone Management), Nomos Verlag (Baden-Baden) in process of editing.
- Winter, G., *A fundament and two pillars*. The concept of sustainable development 20 Years after the Brundtland Report, in: Hans-Christian Bugge, Christina Voigt (eds.) Sustainable development in international and national law, Europa Law Publishing (Groningen) 2008, pp. 25-45.
- Winter G., Marion Markowski, Till Markus (eds.) A legal clinic for marine fisheries management. With case studies on Brazil, Mexico, EU, Namibia, Kenya, and Indonesia. IUCN (Bonn), 500 pages, 2 volumes, in process of editing.

See Annex I and II below for summary representations of dissemination activities including all workpackages.

<b>WP Number: 11</b>	<b>WP Name: Project Management</b>
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a) Workpackage objectives and starting point of work:

Overarching objective:

The “Management” workpackage provides review, assessment and management for the INCOFISH project. It also maintains close contact with the Commission, through regular informal reports and visits as needed or opportunities arise.

Specific objectives:

1. Review and assess INCOFISH results and progress;
2. Supervise activities to achieve objectives and provide deliverables in good quality and on time;
3. Disperse, use, and account for resources as contracted;
4. Coordinate activities so that objectives of work packages come together to reach the overall goal of INCOFISH, i.e., sustainable use of coastal zones.

Work for this reporting period commenced in month 25, 1<sup>st</sup> May 2007. Highlights are the high level of scientific accomplishments and the efficient administration of a project involving 35 contractual partners in 22 countries worldwide. Meanwhile INCOFISH has been rated a ‘star’ project by EC officers, and a special feature on INCOFISH has been produced by EuroNews Futuris, with 22 broadcasts in 7 languages. Also, INCOFISH was one of the few projects show-cased by the Commission at the Conference on Biological Diversity in Bonn on 19 May 2008.

b) Progress towards objectives

Re (1): The 4<sup>th</sup> Project Steering Committee Meeting was held in February 2008 at the site of the coordinator. Presentations by WP leaders and project management may be found at [http://www.incofish.org/Aboutus/INCPPTShow.php?p=INCOFISH\\_PPTshow](http://www.incofish.org/Aboutus/INCPPTShow.php?p=INCOFISH_PPTshow). Monthly short progress reports by all work packages were assembled and edited by WP11 and disseminated by e-mail to all members and partners and to the scientific officer of INCOFISH. This has proven useful in keeping all members up-to-speed with regards to INCOFISH activities. A 3<sup>rd</sup> semi-annual report was prepared and shared with all members and the Commission in December 2007. Furthermore, the third periodic report was assembled, edited and submitted on time.

Re (2): During the reporting period WP11 participated in the final INCOFISH workshop of WP 9. WP11 contributed regularly to ICZM services on the INCOFISH portal and updated the “About us” page. Also, the deliverables due in the reporting period D1.3, D1.4, D1.5, D1.6, D1.7, D2.2, D2.3, D2.4, D3.4, D3.5, D3.6, D4.3, D4.4, D4.5, D5.2, D5.3, D5.4, D5.5, D6.3, D6.4, D6.5, D7.4, D7.5, D8.3, D8.4, D8.5, D8.6, D9.3, D9.4, D10.2, D10.3, D10.4, D10.5, D10.6, D10.7 and D10.8 were carefully evaluated and commented upon.

Re (3): The INCOFISH 3<sup>rd</sup> installment arrived in November 2007 at the account of IFM-GEOMAR and was immediately transferred to the accounts of INCOFISH contractors countries. With one exception (CABAL) no complaints were received from partners. After transferring the third installment the partner complaint to never having received the second installment of 676,11 € sent out in January 2007. Since the money was never returned to the bank account of IfM-GEOMAR and since the partner did not file a complaint on time, the money could not be located anymore even though banks at both sides made several efforts to trace it. Financial reports (Form C) for this third annual

report and audit certificates for the three years project duration have been assembled from all contractors.

Re (4): Synergy between work packages was encouraged, especially though cross-WP participation in workshops; this has worked very well and all WPs are well connected with at least one or two other WPs.

c) Deviations from work program and corrective actions taken.

The following issues arose after the signature of the contract that might require a rider or even an amendment to the INCOFISH contract.

We now have remaining funds of ca. 55 000 Euro for audits. However, these were declared in their own 'Audit' budget category. Realizing that audit certificates will have to be obtained through subcontracts, we have submitted two requests for an amendment to the contract asking permission to bring the 'Audit' category under the 'Subcontracts' category. Two official requests have been submitted to the Commission during the reporting period, one in June 07 and an updated one in March 08 (due to delayed reaction by the Commission to the first request).

Apart of this pending issue a series of budget shifts between partners were agreed upon by the Steering Committee, in the first place to cover publication costs of country reports of workpackage 10 "Legal instruments for sustainable fisheries" and additional programming costs of workpackage 1 "Data, Tools, and Outreach". Details are provided in the 3<sup>rd</sup> year's management report.

d) Deliverables and Milestones

Lists of deliverables and milestones with indication of progress are available in Tables S2.1 and S2.2, respectively.

f) Dissemination activities during the reporting period

see Annex I and II below

**Table S2.1: INCOFISH deliverables showing delivery date, indicator of success and lead contractor.**

\* Indications of date refer to month after project start.

Deliverables due during 1<sup>st</sup> reporting period; due during 2<sup>nd</sup> reporting period, due during 3<sup>rd</sup> reporting period.

WP no.	Del. no.	Deliverable name	Date due*	Actual / Forecast delivery date*	Indicator of success	Evidence by end of reporting period 3	Lead contractor
1	D1.1	<a href="#">Free online access</a> to all data relevant to this project	19	19	Web portal available and working.	Web portal available and working at <a href="http://www.incofish.org">www.incofish.org</a> .	FIN
	D1.2	<a href="#">Data Archive for all relevant data of D1.1</a> not archived elsewhere (database)	19	19	Database with archiving function for ICZM data available online.	Database with archiving function for ICZM data available online at <a href="http://www.incofish.org/Results/Data.php">www.incofish.org/Results/Data.php</a>	FIN
	D1.3	<a href="#">Online ICZM tools</a> including <a href="#">coastal transects</a> , and special step-by-step tools for common ICZM tasks	25	25	Available on INCOFISH portal.	Available on INCOFISH portal at <a href="http://www.incofish.org/Results/Tools.php">http://www.incofish.org/Results/Tools.php</a> .	FIN
	D1.4	<a href="#">Electronic maps</a> for all relevant marine organisms	25	25	Electronic maps available on portal.	More than 5000 maps available at <a href="http://www.aquamaps.org">www.aquamaps.org</a> or <a href="http://www.incofish.org/Results/Maps.php">www.incofish.org/Results/Maps.php</a> .	FIN
	D1.5	<a href="#">Internet portal running</a>	13	13	Internet portal running including Forum, Data Upload and Links at <a href="http://www.incofish.org">www.incofish.org</a> .	Internet portal running including Forum, Data Upload and Links at <a href="http://www.incofish.org">www.incofish.org</a> .	FIN
	D1.6	Maintenance of portal, uploading of WP data & tools	36	32	Improved version of web portal available; more than 10.000 visitors to ICZM tools & data per month; more than 100 citations in Google Scholar ( <a href="http://scholar.google.com">scholar.google.com</a> ).	Portal statistics by April 30 08: - Server visits: 12.689 (Unique visitors: 10.060) - Seafoodguide.mobi Visits: 1.583 (Unique visitors: 1.252). - Citations in Google Scholar: 69 - Google search for "INCOFISH" results in 38.500 pages	FIN
	D1.7	Scientific publications	36	36	At least five papers published or submitted	Two scientific papers published, alongside with numerous outreach publications (see above under "dissemination activities" of WP1 or <a href="http://www.incofish.org/Results/Publications.php">www.incofish.org/Results/Publications.php</a> ).	All WP members

WP no.	Del. no.	Deliverable name	Date due*	Actual / Forecast delivery date*	Indicator of success	Evidence by end of reporting period 3	Lead contractor
2	D2.1	Historical data relating to selected key aquatic resources (stocks) in particular large marine ecosystems.	19	19	Creation of online database containing data of the change in stock abundance over time of various species in at least 10 LMEs.	Datasets comprising historical data relating to stock abundance in 10 LMEs are available online. <a href="http://www.hull.ac.uk/incofish/DataStore/DataStore.htm">www.hull.ac.uk/incofish/DataStore/DataStore.htm</a>	UHULL
	D2.2	Derived from D2.1, baseline data for the respective stocks and LMEs, for utilisation in WPs 4, 5, 7 and dissemination through WP 1.	25	25	Analyses conducted and baseline data available to indicated WPs.	Analyses have been conducted and baseline data are available to indicated WPs. <a href="http://www.hull.ac.uk/incofish/DataStore/DataStore.htm">www.hull.ac.uk/incofish/DataStore/DataStore.htm</a>	All WP2 partners
	D2.3	Population of databases, interactions with WPs 1, 3, 4, 7, report on baseline data and analysis	34	34	Report available on INCOFISH portal.	16 Datasets covering 10 LMEs disseminated via the INCOFISH WP2 Data Pages website. Data made available to indicated WPs. <a href="http://www.hull.ac.uk/incofish/BackflashAnimations/BackflashAnimations.htm">www.hull.ac.uk/incofish/BackflashAnimations/BackflashAnimations.htm</a> . For the report see D11.3 and at <a href="http://www.incofish.org/Workpackages/Wp2/WP2ObjDelMiles.php">www.incofish.org/Workpackages/Wp2/WP2ObjDelMiles.php</a> .	UHULL
	D2.4	Scientific publications	34	34	At least five scientific papers published or submitted.	At least 15 scientific manuscripts published. (see above under "dissemination activities" of WP2 and at <a href="http://www.hull.ac.uk/incofish/AboutWP2/AboutWP2.htm">www.hull.ac.uk/incofish/AboutWP2/AboutWP2.htm</a> )	All WP members
3	D3.1	Standardized electronic maps with predicted distribution (likelihood of occurrence) for all coastal zone species relevant to this project (web-based maps)	13	13	Maps, with species distributions, available on INCOFISH portal.	8.000 Maps available at <a href="http://www.aquamaps.org">www.aquamaps.org</a> and / or <a href="http://www.incofish.org/Workpackages/Wp3/WP3ObjDelMiles.php">www.incofish.org/Workpackages/Wp3/WP3ObjDelMiles.php</a> .	NRM

WP no.	Del. no.	Deliverable name	Date due*	Actual / Forecast delivery date*	Indicator of success	Evidence by end of reporting period 3	Lead contractor
	D3.2	Before-After maps with predicted distribution before and after a certain point in time	19	23	Tool for creation of Before-After maps available, with examples for more than 10 key species.	Before-After Tool is available for 3.419 species at <a href="http://www.aquamaps.org">www.aquamaps.org</a> and / or <a href="http://www.incofish.org/Workpackages/Wp3/WP3ObjDelMiles.php">www.incofish.org/Workpackages/Wp3/WP3ObjDelMiles.php</a> .	NRM
	D3.3	Maps with predicted seasonal distribution	26	24	Maps available on INCOFISH portal.	Seasonal maps are available for 994 species at <a href="http://www.aquamaps.org">www.aquamaps.org</a> and / or <a href="http://www.incofish.org/Workpackages/Wp3/WP3ObjDelMiles.php">www.incofish.org/Workpackages/Wp3/WP3ObjDelMiles.php</a> .	NRM
	D3.4	Dynamic maps where species distribution is predicted from the occurrence of the respective niche in space and time as predicted by physical models of the oceans (web-based maps)	31	31	Maps available on INCOFISH portal.	Over 100 predicted 2050 Maps are available at <a href="http://www.aquamaps.org">www.aquamaps.org</a> and / or <a href="http://www.incofish.org/Workpackages/Wp3/WP3ObjDelMiles.php">www.incofish.org/Workpackages/Wp3/WP3ObjDelMiles.php</a> .	NRM
	D3.5	Further population of maps, interactions with WPs	34	34	Final report available and satisfactory.	Over 8,000 maps are available at <a href="http://www.aquamaps.org">www.aquamaps.org</a> . For the report see D11.3 and at <a href="http://www.incofish.org/Workpackages/Wp3/WP3ObjDelMiles.php">www.incofish.org/Workpackages/Wp3/WP3ObjDelMiles.php</a> .	NRM
	D3.6	Scientific publications	34	34	At least five scientific papers published or submitted.	3 papers published and 2 accepted for publication (see under “dissemination activities” of WP3above or at <a href="http://www.incofish.org/Results/Publications.php">www.incofish.org/Results/Publications.php</a> ).	All WP members
4	D4.1	Data relevant for ecosystem modelling disseminated through WP 1	13	15	Ecosystem parameters available through portal for more than 100 ecosystems.	153 Ecopath models with corresponding database available at <a href="http://www.incofish.org/Workpackages/WP4/EcopathCollection.php">www.incofish.org/Workpackages/WP4/EcopathCollection.php</a> .	CICIMAR / All WP members
	D4.2	Ecosystem models available for all INCOFISH ecosystems (models, month 19)	19	19	Models constructed by all contractors within WP4 will be available on the INCOFISH portal.	12 ecosystem models available at <a href="http://www.incofish.org/WorkPackages/WP4/ModelsWP4.php">www.incofish.org/WorkPackages/WP4/ModelsWP4.php</a> .	All WP members

WP no.	Del. no.	Deliverable name	Date due*	Actual / Forecast delivery date*	Indicator of success	Evidence by end of reporting period 3	Lead contractor
	D4.3	Spatial ecosystem models available for all selected LME's (models, month 25)	25	25	Spatial models based on D4.2 available on INCOFISH portal.	Report with spatial models available on INCOFISH portal at <a href="http://www.incofish.org/Workpackages/WP4/WP4ObjDelMiles.php">www.incofish.org/Workpackages/WP4/WP4ObjDelMiles.php</a> .	CICIMAR / All WP members
	D4.4	Further development of models, interactions with WPs, final report	34	36	Final report available and satisfactory	Final report available and satisfactory, see <a href="http://www.incofish.org/Workpackages/WP4/WP4ObjDelMiles.php">www.incofish.org/Workpackages/WP4/WP4ObjDelMiles.php</a> .	CICIMAR All WP members
	D4.5	Scientific publications	34	34	At least five scientific papers published or submitted.	50 papers published / in press; 10 submitted (see above under "dissemination activities" of WP4 and / or at <a href="http://www.incofish.org/Results/Publications.php">www.incofish.org/Results/Publications.php</a> ).	All WP members
5	D5.1	MPA review	16	19	Review available on INCOFISH portal, including links to relevant partners and data sources.	Review available at <a href="http://www.incofish.org/Workpackages/WP5/WP5ObjDelMiles.php">www.incofish.org/Workpackages/WP5/WP5ObjDelMiles.php</a> .	UNEW
	D5.2	Model based analysis of MPA size and placement	28	28	Report produced and available on INCOFISH portal.	Report produced, modified version published as FCRR 15 (6) <a href="http://www.fisheries.ubc.ca/publications/reports/report15_6.php">http://www.fisheries.ubc.ca/publications/reports/report15_6.php</a> and at <a href="http://www.incofish.org/Workpackages/WP5/WP5ObjDelMiles.php">www.incofish.org/Workpackages/WP5/WP5ObjDelMiles.php</a> .	UNEW
	D5.3	Conceptual model for MPA planning	31	31	Concept for MPA planning available on INCOFISH portal together with "web wizard" and access to relevant data.	Tool available on-line <a href="http://www.aquamaps.org/tools/aquamaps/tools/mpa/details.htm">http://www.aquamaps.org/tools/aquamaps/tools/mpa/details.htm</a>	UNEW
	D5.4	Final Report on WP5	34	34	Final Report available and satisfactory.	Final report available and satisfactory, see <a href="http://www.incofish.org/Workpackages/WP5/WP5ObjDelMiles.php">www.incofish.org/Workpackages/WP5/WP5ObjDelMiles.php</a> .	UNEW
	D5.5	Scientific publications	34	34	At least five scientific papers published or submitted.	6 papers published / in press (see under "dissemination activities" of WP5 above and at <a href="http://www.incofish.org/Results/Publications.php">www.incofish.org/Results/Publications.php</a> ).	All WP members

WP no.	Del. no.	Deliverable name	Date due*	Actual / Forecast delivery date*	Indicator of success	Evidence by end of reporting period 3	Lead contractor
6	D6.1	Report on 'Concepts and tools for ICZM, with a special focus on stakeholder involvement'	13	13	Review of ICZM tools available on INCOFISH portal.	Review of ICZM tools available at <a href="http://www.incofish.org/Workpackages/WP6/WP6ObjDelMiles.php">www.incofish.org/Workpackages/WP6/WP6ObjDelMiles.php</a> .	IGS
	D6.2	Coastal Transects Software to classify and display common typology of coastal cross-sections	17	17	Prototype of software available on INCOFISH portal.	CTAM was successfully launched at CZAP Conference in Batam; report describing CTAM model available at <a href="http://www.incofish.org/Workpackages/WP6/WP6ObjDelMiles.php">www.incofish.org/Workpackages/WP6/WP6ObjDelMiles.php</a> . See also <a href="http://fishbase.sinica.edu.tw/report/t/home.htm">http://fishbase.sinica.edu.tw/report/t/home.htm</a> .	CDC/ UNIABDN
	D6.3	Decision-making framework based on coastal transect analysis and related software	25	26	-Decision framework and related data and software available on portal.	CTAM Phase II is completed and ready for public use at <a href="http://www.incofish.org/Workpackages/WP6/WP6ObjDelMiles.php">www.incofish.org/Workpackages/WP6/WP6ObjDelMiles.php</a> . See also <a href="http://fishbase.sinica.edu.tw/report/t/home.htm">http://fishbase.sinica.edu.tw/report/t/home.htm</a> .	CDC, UNIABDN, IGS, in collaborati on with FishBase and WP1
	D6.4	Testing of framework, interactions with other WPs, final report	34	36	Final report available and satisfactory.	Four case studies completed (three for the Gulf of Thailand and one for the North Sea), with stakeholders consultation. Report available at <a href="http://www.incofish.org/Workpackages/WP6/WP6ObjDelMiles.php">www.incofish.org/Workpackages/WP6/WP6ObjDelMiles.php</a> .	CDC, UNIABDN  CDC in collaborati on with WP8
	D6.5	Scientific publications	34	36	At least five scientific papers published or submitted.	1 online publication, 5 papers published, 1 book chapter published, four papers submitted, one book chapter submitted (see under "dissemination activities" of WP6 above) and at <a href="http://www.incofish.org/Results/Publications.php">www.incofish.org/Results/Publications.php</a> .	All WP6 members

WP no.	Del. no.	Deliverable name	Date due*	Actual / Forecast delivery date*	Indicator of success	Evidence by end of reporting period 3	Lead contractor
7	D7.1	Review of indicators and selection of suitable, simple indicators	7	7	Selection and justification of simple indicators published on INCOFISH portal.	Selection and justification of simple indicators published at <a href="http://www.incofish.org/Workpackages/WP7/WP7ObjDelMiles.php">www.incofish.org/Workpackages/WP7/WP7ObjDelMiles.php</a> .	IFM-GEOMAR
	D7.2	Database containing necessary biological parameters for application of indicators	13	13	Database with data needed for indicators available online, for more than 500 species.	Parameters are available for over 500 species from <a href="http://www.fishbase.org">www.fishbase.org</a> , Go to "Information by Topic", then to "Maturity" in the "Life history" column.	IFM-GEOMAR/ FIN
	D7.3	Internet-based wizard to help in application of indicators	19	19	Indicator wizards available on portal.	Wizard available for use at <a href="http://www.incofish.org/donteatbabies.php">www.incofish.org/donteatbabies.php</a>	IFM-GEOMAR / FIN
	D7.4	Final report (after testing of indicators with real-world fisheries and stakeholders)	34	34	Final report available and satisfactory.	Fish rulers available at <a href="http://www.incofish.org/Workpackages/WP7/WP7Fishrulers.php">www.incofish.org/Workpackages/WP7/WP7Fishrulers.php</a> Final report available and satisfactory (see under D11.3 and at <a href="http://www.incofish.org/Workpackages/WP7/WP7ObjDelMiles.php">www.incofish.org/Workpackages/WP7/WP7ObjDelMiles.php</a> ).	IFM-GEOMAR  IMARPE, CRODT
	D7.5	Scientific publications	34	34	At least five scientific papers published or in press.	10 scientific papers published / in press (see under "dissemination activities" of WP7 above) and at <a href="http://www.incofish.org/Results/Publications.php">www.incofish.org/Results/Publications.php</a> .	All contractors
8	D8.1	Economic & Social Database with information relevant for ICZM	13	13	Database with social and economic information relevant for ICZM available on INCOFISH portal.	Several socio-economic databases have been created (see report) and are available at <a href="http://www.incofish.org/Workpackages/WP8/WP8ObjDelMiles.php">www.incofish.org/Workpackages/WP8/WP8ObjDelMiles.php</a>	All contractors (CDC)
	D8.2	Valuation of ecosystem goods and services	19	19	First report on valuation of ecosystems available on INCOFISH portal.	Report available at <a href="http://www.incofish.org/Workpackages/WP8/WP8ObjDelMiles.php">www.incofish.org/Workpackages/WP8/WP8ObjDelMiles.php</a> .	All contractors (UNAM).
	D8.3	Analysis of ineffective management: Indicators	25	30	Report and wizard on economic indicators available on INCOFISH portal.	Report available at <a href="http://www.incofish.org/Workpackages/WP8/WP8ObjDelMiles.php">www.incofish.org/Workpackages/WP8/WP8ObjDelMiles.php</a> . Development of Wizard was dropped.	All contractors (Tromsoe).

WP no.	Del. no.	Deliverable name	Date due*	Actual / Forecast delivery date*	Indicator of success	Evidence by end of reporting period 3	Lead contractor
	D8.4	Policy options for sustainable fisheries and coastal management	31	32	Report on policy options available on INCOFISH portal.	Report available at <a href="http://www.incofish.org/Workpackages/WP8/WP8ObjDelMiles.php">www.incofish.org/Workpackages/WP8/WP8ObjDelMiles.php</a> .	All contractors (UNAM).
	D8.5	Final report	34	34	Final report available and satisfactory.	Final report available and satisfactory (see under D11.3 and at <a href="http://www.incofish.org/Workpackages/WP8/WP8ObjDelMiles.php">www.incofish.org/Workpackages/WP8/WP8ObjDelMiles.php</a> ).	All contractors (UNAM).
	D8.6	Scientific publications	34	34	At least five scientific papers published or submitted.	39 papers published (see under "dissemination activities" of WP8 above) and at <a href="http://www.incofish.org/Results/Publications.php">www.incofish.org/Results/Publications.php</a> .	All contractors (UNAM).
9	D9.1	Criteria to determine carrying capacity of MPAs for ecotourism	10	12	Report on carrying capacity available on INCOFISH portal, including links to relevant ecotourism data sources.	Report on carrying capacity available at <a href="http://www.incofish.org/Workpackages/WP9/WP9ObjDelMiles.php">www.incofish.org/Workpackages/WP9/WP9ObjDelMiles.php</a> including links to relevant eco-tourism data sources.	CDF, ECOLAP, Fundación Malpelo
	D9.2	Indicators to monitor impact of ecotourism on MPAs	21	24 / 36	Ecotourism impact report and wizard available on INCOFISH portal.	Report available at <a href="http://www.incofish.org/Workpackages/WP9/WP9ObjDelMiles.php">www.incofish.org/Workpackages/WP9/WP9ObjDelMiles.php</a> and wizard (step-by-step tool) available at <a href="http://fishbase.sinica.edu.tw/INCOFISH/workpackages/wp9/tourism_impact.php">http://fishbase.sinica.edu.tw/INCOFISH/workpackages/wp9/tourism_impact.php</a> .	CDF, ECOLAP, Fundación Malpelo
	D9.3	Testing of concepts and indicators, interactions with WPs	33	36	Final report available and satisfactory.	Final report available at <a href="http://www.incofish.org/Workpackages/WP9/WP9ObjDelMiles.php">www.incofish.org/Workpackages/WP9/WP9ObjDelMiles.php</a> .	CDF, ECOLAP, Fundación Malpelo
	D9.4	Scientific publications	33	36	At least five scientific papers published or submitted.	1 paper in press, 4 submitted, 2 technical reports in press (see above under "dissemination activities" of WP9) and at <a href="http://www.incofish.org/Results/Publications.php">www.incofish.org/Results/Publications.php</a> .	CDF, ECOLAP, Fundación Malpelo

WP no.	Del. no.	Deliverable name	Date due*	Actual / Forecast delivery date*	Indicator of success	Evidence by end of reporting period 3	Lead contractor
10	D10.1	Report on international and national legal commitments to sustainable marine fisheries (with database)	10	8 + 14	Report with database available on INCOFISH portal	Report with database available on INCOFISH portal <a href="http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php">www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php</a> .	UNI HB
	D10.2	a) Report on the promotion and management of marine fisheries in Brazil: focus on participatory approach to MPA management D 10.2a.1 Focus on coastal zone D 10.2a.2 Focus on EEZ	25	25	Report available on INCOFISH portal.	Printed publication in progress (IUCN). Report available on INCOFISH portal. Report available at <a href="http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php">www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php</a> .	APPRENDER
		b) Report on the promotion and management of marine fisheries in Nicaragua: focus on communal approaches outside MPAs with local property rights	13	32	Report available on INCOFISH portal.	Final draft under revision.	CABAL S.A.
	D10.3	a) Report on the promotion and management of marine fisheries in Namibia D 10.3.1 Focus on coastal zone D 10.3.2 Focus on EEZ	25	25	Report available on INCOFISH portal.	Printed publication in progress (IUCN). Report available at <a href="http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php">www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php</a> .	UNAM
		b) Report on the promotion and management of marine fisheries in Kenya: focus on communal approaches outside MPAs and without property rights	-	25	Report available on INCOFISH portal.	Printed publication in progress (IUCN). Report available at <a href="http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php">www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php</a> .	KESCOM
	D10.4	a) Report on the promotion and management of marine fisheries in Indonesia D10.4.1 Focus on coastal zone D10.4.2 Focus on EEZ	25	32	Report available on INCOFISH portal.	Printed publication in progress (IUCN). Report available at <a href="http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php">www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php</a> .	UNI HB
		b) Report on the promotion and management of marine fisheries in Mexico	-	28	Report available on INCOFISH portal.	Printed publication in progress (IUCN). Report (in English and Spanish) available at <a href="http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php">www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php</a> .	UNI HB

WP no.	Del. no.	Deliverable name	Date due*	Actual / Forecast delivery date*	Indicator of success	Evidence by end of reporting period 3	Lead contractor
	D10.5	Report on the promotion and management of marine fisheries in EU in comparison to the other selected countries D10.5.1 Focus on coastal fishery	31	33	Report available on INCOFISH portal.	Printed publication in progress (Europa Law Publishing). Report available at <a href="http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php">www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php</a> .	UNI HB
	D10.6	a) Summary comparison of national legal instruments for the promotion and management of marine fisheries (together with D10.7)	-	33	Report available at INCOFISH web portal.	Printed publication in progress (Europa Law Publishing). Report available at <a href="http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php">www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php</a> .	UNI HB
		b) Allocation and management of offshore fisheries resources: an in-depth legal analysis of instruments in comparative perspective	31	34	Report available at INCOFISH web portal.	Printed publication in progress (Europa Law Publishing). Report available at <a href="http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php">www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php</a> .	UNI HB
	D10.7	Overall synthesis; recommendations	34	34	Report available at INCOFISH web portal.	See D10.6a	UNI HB
	D10.8	Scientific Publications	34	34	At least five scientific papers published or submitted.	6 scientific publications (1 paper, 5 books) in press (see above under "dissemination activities" of WP10) and at <a href="http://www.incofish.org/Results/Publications.php">www.incofish.org/Results/Publications.php</a> .	All contractors
11	D11.1	First Annual Progress Report	13	14	Report delivered to European Commission.	Delivered on time. Scientific report available at <a href="http://www.incofish.org/Aboutus/INCProgReport.php">www.incofish.org/Aboutus/INCProgReport.php</a> .	IfM-GEOMAR
	D11.2	Second Annual Progress Report	25	26	Report delivered to European Commission.	Delivered on time. Scientific report available at <a href="http://www.incofish.org/Aboutus/INCProgReport.php">www.incofish.org/Aboutus/INCProgReport.php</a> .	IfM-GEOMAR
	D11.3	Third Annual Progress and Final Report	36	38	Reports delivered to European Commission.	Delivered on time.	IfM-GEOMAR

**Table S2.2 INCOFISH Milestones showing delivery date and type.** \* Indications of date refer to month after project start.Milestones within 1<sup>st</sup> reporting period; within 2<sup>nd</sup> reporting period, within 3<sup>rd</sup> reporting period.

WP No.	Milestone no.	Milestone name	Date due*	Actual / Forecast delivery date*	Comments	Lead contractor
1	M1.1	First workshop	6	6	Conducted in conjunction with start-up workshop (see M11.1)	FIN
	M1.1.1	Additional workshop	-	13	The scheduling of an additional workshop was considered beneficial for overall performance and improvement of the INCOFISH portal after. Workshop was held in Los Baños, Philippines in May 2006.	FIN
	M1.2	Second workshop	26	22	Conducted in conjunction with mid-term workshop (see M11.4.1)	FIN
2	M2.1	First workshop	5	6	Conducted in conjunction with start-up workshop (see M11.1).	UHULL
	M2.1.1	Intermediate workshop	-	11	Additional milestone; workshop held in Tallin, Estonia, in March 2006, to examine concept of shifting baselines	UHULL
	M2.1.2	Intermediate workshop	-	23	Held in conjunction with mid-term workshop	UHULL
	M2.2	Second workshop	27	27	Setting baselines	CDF
	M2.2.1	Intermediate workshop	-	30	Synthesising results	UHULL
3	M3.1	First workshop, review data body	5	6	Conducted in conjunction with start-up workshop (see M11.1)	NRM
	M3.1.1	Intermediate workshop	-	12	Additional milestone. Not all aspects could be clarified during the Start-up workshop. During the intermediate workshop the WP3 work plan was adjusted to comply with requirement to coordinate with other workpackages and be scheduled to avoid overlap. Was held in Campinas, Brazil, in April 2006.	NRM
	M3.2	Second workshop	27	23	To review maps, tools, etc. Held in conjunction with Mid-Term workshop in Mexico	NRM
4	M4.1	First workshop	5	6	Conducted in conjunction with start-up workshop (see M11.1). Partners learned about rationale of the project, global strategies of the whole project and WP's, first synergies were established. Partners got to know each other.	IfM-GEOMAR
	M4.1.1	Intermediate workshop	-	10	Additional milestone. Workshop organized in cooperation with WP5 in London, UK, in February 2006. The work plan was discussed, study cases defined, as well as criteria for models standardization and comparisons.	UNEW & CICIMAR

WP No.	Milestone no.	Milestone name	Date due*	Actual / Forecast delivery date*	Comments	Lead contractor
	M4.1.2	Overseas consultancy	-	12, 13, 17, third year	Additional milestone. Overseas consultancy for construction of East China Sea ecosystem model consisting of three meetings. Because of poor experience of ECNU and NIES in modelling with the Ecopath with Ecosim suite of programs a particular strategy was developed to guarantee to fulfil deliverable D4.2 for all the partners. It includes an overseas consultancy in three major steps: Two meetings in China (hosted by ECNU) with an Ecopath model constructed as final result. The third step, a meeting in Mexico (hosted by CICIMAR) for model calibration, time simulation based on Ecosim and an introduction to Ecospace (spatial modelling).	ECNU (in collaboration with CICIMAR, UNEW and NIES)
	M4.2	Second workshop	13	17	An Ecosim workshop was organized with the objective to construct dynamic models for all systems represented in WP4.	MCM-DEAT / CICIMAR
	M4.3	Third workshop	19	23	An Ecospace workshop was organized with the objective to construct spatial ecosystem models (deliverable D4.3) until May 2007.	CICIMAR
	M4.3.1	Additional workshop	-	27	Topic: Impact on ecosystems by by-catch mortality of shrimp trawl fishery	
	M4.4	Fourth workshop	30	33	Presentation of ecosystem models, and preparation of meta-analysis.	ECNU, CICIMAR
	M4.4.1	Additional workshop	-	36	Topic: Does fishing affect the strength of trophic interactions in marine ecosystems?	Uni Concepcion
5	M5.1	First workshop	5	6	Conducted in conjunction with start-up workshop (see M11.1)	UNEW
	M5.1.1	Intermediate workshop	-	10	Additional milestone. The project start up meeting in Kiel enabled many of the early issues to be covered, but not all. Therefore, an intermediate workshop has been organized in cooperation with WP4 in London, UK, in February 2006.	UNEW / CICIMAR
	M5.2	Second workshop	19	23	Analysis of spatial models. Held in conjunction with INCOFISH Mid-Term workshop in La Paz, Mexico.	UNEW
	M5.3	Third workshop	25	29	Develop and finalise frameworks for D5.3. This workshop was timed to coincide with an MPA conference of which the INCOFISH project was a partner organiser, allowing more efficient usage of the WP travel budget.	UNEW
6	M6.1	First workshop	6	6	Conducted in conjunction with start-up workshop (see M11.1).	CDC
	M6.1.1	Intermediate workshop	-	9	Additional milestone. Workshop held in Aberdeen, UK, in January 2006.	CDC, IGS, UNIABDN
	M6.1.2	Intermediate workshop	-	13	Additional milestone. Workshop organized in cooperation with WP8 in Bangkok, Thailand, in May 2006.	CDC / UNAM

WP No.	Milestone no.	Milestone name	Date due*	Actual / Forecast delivery date*	Comments	Lead contractor
	M6.2	Second workshop	25	23	Conducted in conjunction with project mid-term workshop (see M11.4.1)	CDC + UNAM
7	M7.1	First Workshop	5	6	Conducted in conjunction with start-up workshop (see M11.1).	IfM-GEOMAR
	M7.2	Second Workshop	20	20	Workshop organized by IMARPE and IfM-GEOMAR in Lima. Launch of fishruler "chikipez" for Peru.	IfM-GEOMAR
	M7.2.1	Additional workshop	-	23	Conducted in conjunction with mid-term workshop (see M11.4.1)	IfM-GEOMAR
8	M8.1	First Workshop	5	6	Conducted in conjunction with start-up workshop (see M11.1).	UNAM
	M8.1.1	Intermediate workshop	-	13	Additional milestone. Workshop held in Bangkok, Thailand, in cooperation with WP6.	UNAM / CDC
	M8.2	Second Workshop	25	23	To assess findings and adjust actions. Conducted in conjunction with mid-term workshop (see M11.4.1).	UNAM
	M8.2.1	Intermediate workshop	-	27	In conjunction with ICZM conference in Oregon, USA	UNAM
	M8.3	Third Workshop		32	Took place from Dec 8 – 11, 2007 in Windhoek, Namibia.	UNAM
9	M9.1	First workshop	5	6	Conducted in conjunction with start-up workshop (see M11.1).	CDF
	M9.1.1	Intermediate workshop	-	12	Additional milestone. Intermediate workshop was held in Bogota in April 2006. Drafting of 1 <sup>st</sup> deliverable with all WP9 partners.	CDF
	M9.2	Second workshop	19	21	To compare results, adapt monitoring protocols and define changes of strategy.	CDF
	M9.3	Third workshop	31	33	To discuss results and prepare final report.	CDF
10	M10.1	First workshop	5	6	Conducted in conjunction with start-up workshop (see M11.1).	UNI BREMEN
	M10.1.1	Intermediate workshop	-	14	Additional milestone, held in June 2006 in Bremen, Germany.	UNI BREMEN
	M10.1.2	Participants meeting	-	23	In conjunction with Mid-Term workshop (see M11.4.1)	UNI BREMEN
	M10.2	Second workshop	29	29	To review and finalize work	UNI BREMEN

WP No.	Milestone no.	Milestone name	Date due*	Actual / Forecast delivery date*	Comments	Lead contractor
11	M11.1	Start-up workshop for all INCOFISH members	5	6	Start-up workshop took place in Kiel, Germany, in October 2005, with 52 participants from 22 countries. All WPs were provided space and time to conduct their 1 <sup>st</sup> WP workshop during the start-up workshop.	IfM-GEOMAR
	M11.2	First Steering Committee meeting	5	6	Held in conjunction with start-up workshop in October 2006 in Kiel, Germany (see M11.1).	IfM-GEOMAR
	M11.3	Second Steering Committee meeting	12	13	Conducted in conjunction with intermediate workshop of WP1 (see M1.1.1).	IfM-GEOMAR
	M11.4	Third Steering Committee	24	24	Conducted in conjunction with mid-term workshop	IfM-GEOMAR
	M11.4.1	Mid-Term Workshop	-	23	Additional milestone, held for all project participants in March 2007 in La Paz, Mexico.	IfM-GEOMAR
	M11.5	Final Steering Committee meeting	34	34	To review WP results, decide on issues related to finalization of project and on continuing activities (e.g. fate of INCOFISH portal).	IfM-GEOMAR

## Section 3 – Consortium management

The project was led by the Project Co-ordinator Rainer Froese with the help of the Project Support Team consisting of the Project Manager Silvia Opitz, half-time Project Assistant Crispina Binohlan, and Webmaster Sven Mohr, all based at IFM-GEOMAR, Kiel, Germany.

The Project Co-ordinator took care of overall project management and chaired the Steering Committee meetings. The Steering Group gave advice to the Project Co-ordinator on management matters. Workshops at the workpackage level as well as contributions to monthly reports served as milestones and 'control points' to review progress and adjust course where needed.

Each workpackage was led by its Workpackage Leader, a senior representative of the Contractor for that workpackage. Several workpackages held their final workshops during the reporting period, attended by all workpackage members, plus invited participants from other WPs.

The organization of work between project participants was regulated by the INCOFISH Consortium Agreement that has been signed by all INCOFISH contractors.

Below is an overview of responsibilities, decision making structures, communication flow, and assessment of progress and results.

### Activities of the Project Co-ordinator

Detailed activities of the Project-Coordinator are available from the monthly INCOFISH progress reports and from the minutes of the Steering Committee meetings. In general, the Project Co-ordinator was responsible for the co-ordination of the project and maintaining contact with the Commission. Particular responsibilities included:

- scientific co-ordination of the entire project, resulting in milestones and deliverables being on time and in good quality;
- chairing the Steering Committee at its third and second meetings in Los Banos, Philippines, and La Paz, Mexico, respectively;
- maintaining contact with the Commission, through email, phone calls and visit to Brussels;
- supervision of the Workpackage Leaders' activities within the project, mainly in reaction to monthly reports, workshop reports, and draft deliverables.
- distribution of funds to partner organisations, which was done directly after the 2<sup>nd</sup> pre-payment arrived at IFM-GEOMAR beginning of January 2006.
- maintenance of a project timetable and register of project events, including meetings, milestones and deliverables (see tables in this document).
- maintenance of consolidated time, expenditure and financial records.
- final preparation and submission of reports and other deliverables to the Commission (see third semi-annual report and this third periodic report).

### Responsibilities of the Workpackage Leaders

Each Workpackage Leader had responsibility for leading his/her respective workpackage. This included:

- scientific and technical management of the workpackage
- two-way communication with the project co-ordinator
- supervision of the activities of the workpackage members within the workpackage
- adherence to the agreed time-lines for milestones and deliverables
- adherence to the budget plan
- two-way communication with the members of the workpackage
- preparation of the milestones, deliverables and financial reports for delivery to the project co-ordinator.

This was overall satisfactory. Only minor problems of work package management arose during the reporting period.

#### Responsibilities of Workpackage Members

Workpackage Members had the responsibility to execute their specific task (including reporting) in the workpackage within a specified time span for which he/she received funding. Workpackage Members also were expected to participate in workpackage meetings and activities, all of which was overall satisfactory.

*Problems of some members are adhered to below.*

#### Financial management and administration

Internal accounting has been maintained by the project co-ordination, based on the accounting and control practices used by the Finance Department of IfM-GEOMAR. INCOFISH WP leaders were briefed on final financial reporting practices (including auditing) during a special session at the 4<sup>th</sup> Project Steering Committee meeting in February, 2008.

#### Decision Making Structures

All INCOFISH decisions so far were reached by consensus at all levels.

#### Assessment of progress and results

The following mechanisms were used for assessment of progress and results:

- Monthly progress reports by workpackages and coordinator
- Semi-annual progress reports by workpackages and by entire project.
- Annual progress reports by workpackages and by entire project.

### **Coordination Reports from WP leaders**

#### WP1 Outreach

WP1 was working in close contact with all Workpackages regarding our cooperation on their outreach plans, web presence, tools development, data submissions and datauploads. WP1 was active in national and international conferences such as Census of Marine Life, CoML, meeting Auckland '07, the Seafood Summit, Barcelona '08, we arranged the Panukat Isda event, Manila '08. For two real-world implementation activities WP1 also collaborated individually with Conservation International, WWF, NFRDI/BFAR in the Philippines on developing individual Fishrulers for regional areas as well as training staff of Bureau of Agricultural Statistics, BAS.

For real-world implementation of INCOFISH tools we also collaborated with Len Garces of the WorldFish Center for the Panukat Isda development and Deng Palomares of the SAUP/ SealifeBase Project for development of seafood guide database. For Aquamaps and FishMapper we collaborated with the Aquamaps team as well as CRIA. For the Promotion of the International Seafood guide we have collaborated with several external partners eg: Seafood Alliance; Europe and USA, Greenpeace International, MSC, WWF International, Sustainable Fisheries Partnership and others.

WP1 was represented in individual workshops of the following Workpackages: WP2 Galapagos June '07 and UK October '07; WP3 February '08, Sweden; WP6 Oregon USA, August '07; WP9 Germany February '08; WP11 Project Steering Committee Meeting, Germany February '08.

#### WP2 Shifting Baselines

The WP2 co-ordinator received regular progress reports from partners, which yielded information for the monthly INCOFISH bulletins disseminated by WP11.

The WP2 data manager at UHULL collaborated closely with WP1 regarding the development of the WP2 database and the dissemination of the historical data collected by WP2 partners.

The WP2 co-ordinator at UHULL collaborated with colleagues at CDF in the organisation of the WP2 workshop 2 that included all WP2 partners and was held in the Galapagos in July 2007.

The WP2 co-ordinator at UHULL organised and hosted the mini-workshop held in Hull in October 2007.

The WP2 co-ordinator at UHULL collaborated with colleagues at UNIABDN in the organisation of the mini-workshop held in Vigo, Spain, in April 2008.

The WP2 co-ordinator at UHULL has collaborated closely with the WP3 coordinator with a view to dataset/GIS mapping sharing options for all WP2 partners. The WP3 coordinator led a workshop session at the 2<sup>nd</sup> WP2 Workshop in July 2007.

The WP2 co-ordinator at UHULL collaborated with WP1 and WP3 in the organisation of a mini-workshop that was held in Stockholm in February 2008.

### WP3 Biomapping

Year 3 has largely been a consolidation period with concentration on principal deliverables led by NRM, and with consultation with other partners. There were no significant changes to responsibilities or WP membership.

Practical activities of the work package have generally followed the planned timeline, increasing the amount of data, number of maps produced, display options and analytical tools for maps. Although resources may have not been available at all times for particular tasks, other non-dependent tasks have been progressed in lieu, such that overall the deliverables should be met. Publication or submission of 5 papers has been secured, though exact timing is still uncertain.

Co-ordination within the WP has been managed mainly through the use of e-mail, including a mail list. Additionally internet telephony has facilitated a number of discussions. Transfer of large files between work package partners has been possible through FTP and postage of CD's/DVD's. Co-operation with other WP's has developed mainly through the project meetings, with subsequent e-mail contact, and with other projects/programmes through web searches and contact by telephone or e-mail. Further interaction was achieved through the Steering Committee meeting in February 2008, and attendance at WP2 workshop in July 2007.

### WP4 Ecosystem Modelling

With the exception of the UNIABDN, whose Ecopath model is still pending, all partners have collaborated as expected. No changes in responsibilities or WP memberships occurred.

Some changes were done to original timetables with respect to the development of the 4th WP4-workshop. Because more time was needed for analysis, the workshop was delayed from October 2007 to January 2008. Because of this, the timetable for deliverables D4.4 and D4.5 was moved from the initially programmed time, February 2008, to April 2008. They were concluded on time.

Communication between WP4 partners has been maintained in different ways; a) through the monthly reports, b) by assisting in joint paper development when necessary, (c) assisting ECNU in the coordination of the 4th programmed workshop, and (d) coordination action for two other small workshops not planned initially.

### WP5 Sizing and Placement of MPAs

There have been no changes to the partners in WP5 during this reporting period. UNEW has employed additional workers for specific task undertaken during the reporting period (report editing and formatting, conducting model simulation runs).

WP5 has completed all deliverables set out in Annex I.

Oversaw the preparation and delivery of D5.2, liaising with all WP members.

Made preparations for the delivery of D5.3 and agreed the strategy and timetable for D5.3 delivery with WP partners. Worked with WPs 3 and 11 on the development and delivery of the on line MPA tool for D5.3, including a visit by Will Le Quesne to Kiel, Germany.

Co-ordinated (and edited) submission of model descriptions by partners from WP4 and WP5 to the FCRR 15(6).

Arranged the WP5 meeting that was held in Murcia. The strategy for D5.3 was discussed and agreed between WP partners at this meeting, and the time scale for delivering D5.3 was defined.

Arranged for WP partners to attend the European Symposium on MPAs, and arranged for some WP members to attend the European Symposium on Ecological Modelling to be held in November.

Discussed with project co-ordinators deviations of delivery times from the original workprogram, and agreed further changes to the work program to make allowance for upstream delays.

Communicated with Villy Christensen (UBC) to arrange modifications to the Ecospace software in accordance with wishes from WP5 partners.

Throughout the project WP5 has worked in close contact with WP4 over the development and analysis of Ecospace models.

### WP6 Coastal Transects

WP6 members contributed to the workpackage activities through their participation at WP meetings and by e-mail correspondence. The following people were involved in the WP activities:

- CDC: Ratana Chuenpagdee, Kungwan Juntarashote, Suphakarn Traesuparp and Javier Bello (post-doctoral researcher), as well as numerous CDC researchers, namely Passara Ratanapisit, Idsariya Wudtisin, Montree Mongkala, Ilada Neamthed, Pisuttipong Suriyakarn, and Wanida Sonmuang, and CDC interns

- IGS: Robert Kay (WP member) + Sarah Gardner (graduate student assistant) + Ailbhe Travers (graduate student assistant)

- UNIABDN: Graham Pierce, Jianjun Wang and Cristina Pita, with David Cooper, Lee Hastie and Jennifer Smith

WP timetable was adjusted for the final deliverables to be submitted on April 30, 2008.

Coordination of WP activities is done mainly by e-mail. WP leader met regularly with CDC research team and was in close communication with WP1 and FishBase team.

### WP7 Simple Indicators

Contributions by WP members are given above with the description of work done by each contractor. There were no official changes to WP membership during this reporting period, although MEI, who is not officially a WP7 partner anyway, didn't work on WP7 activities this reporting period, instead focusing their work on WP2 priorities.

D7.1-7.3 are complete and were completed by their respective due dates—all additions to D7.2 are above and beyond the "indicator of success" for that deliverable. D7.4 and 7.5. are complete as well. No changes need to be made to the barchart.

WP7 Coordinators participated in the 3<sup>rd</sup> project steering committee meeting during this period. The rest of the WP coordination was conducted via email and telephone. FIN of WP1 supplied WP7's Birane Samb of CRODT Senegal with the fish rulers for his press launch. All WP members have been working together remotely on a WP paper on indicator case studies.

### WP8 Valuation of Ecosystem Services

There were no changes in responsibilities and WP membership during the reporting period.

Timetable and status were all met, except for the change in the date of submission of Deliverable 3 and WS8.2.

Arranged many communications electronically and organized our final workshop in Windhoek, Namibia in December 2007.

### WP9 Ecotourism

Gorgona National Natural Park in Colombia hired a new representative and a new technician to be in charge of data collection in that area.

Deliverables 9.3 and 9.4 were delayed by two months according to the timetable.

Given the relative isolation of the WP members, communication was conducted mostly through e-mail, with a meeting held in Bariloche on August 2007 between CDF, Ecolap and Malpelo, under the framework of the II Latin American Congress of Natural Protected Areas and a second meeting held in Cartagena, Colombia, under the 2<sup>nd</sup> Workshop of Tourism Technicians developed by CMAR. After that, the 3<sup>rd</sup> Workshop of WP9 was developed in Machalilla, Ecuador.

Since all WP members worked closely as technical advisors to government authorities and user groups in each National Park, INCOFISH WP9 activities were closely linked to a variety of ongoing projects with management outcomes and key contacts in the respective National Park Services. These included interactions with other NGOs such as WWF, CI, Mar Viva, WildAid, and TNC. Given the compatible goals the aim was to increase the project audience in the Eastern Tropical Pacific.

### WP10 Legal Aspects

Workpackage co-ordination was conducted by UNI HB (Gerd Winter, Till Markus, Marion Markowski).

Changes to the WP membership:

Laode M. Syarif and Evanson Chege Kamau continued to work for WP 10 as sub-contractors.

Germán Ponce Diaz was subcontracted by WP 10 to prepare a country report on Mexico. WP 10 cooperates with Nyawira Muthiga, WP 3, and Joe Ryan, WP 7.

WP 10 has completed its work.

Communication with other workpackages (WP 1, 11).

Communication with external institutions (EC general Directorate on Fisheries; Innovative Fisheries Management (IFM) at Aalborg University; Bundesamt für Seeschifffahrt und Hydrographie).

Co-ordination and supervision of deliverables.

#### WP11 INCOFISH Coordination

See start of Section 3.

Table S3.1: Barchart of project deliverables. The vertical line highlighted in red shows where each WP stands by the end of the third reporting period.

	year 1											year 2											year 3																	
	Months from start of Project																																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36				
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	year 1											year 2											year 3																	
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WP Workpackage, D Deliverable

## Section 4 – Other issues

### Subcontracting costs for financial audits

A query made within the Consortium last year with an updated version this year showed that ca. 55.000 Euros are needed by the end of the project for audits from external auditors in form of subcontracts. In the original budget, funds have been set aside for audits but not declared as subcontracting funds.

A request for a rider to the contract on this topic was prepared and submitted to the Commission in June 07 and repeated in March 08. An official permit from the Commission has recently arrived at the coordinating institution.

### Budget shifts within the INCOFISH Consortium

To make best use of unused funds by certain partners the following budget shifts were approved by the Project Steering Committee meeting and the INCOFISH Consortium:

1. from IfM-GEOMAR to FIN – 31 000 € unused funds for additional programming time of INCOFISH tools, and additional workshops to launch INCOFISH products particularly in the Philippines;
2. from NRM to Uni Bremen – 27 000 € unused funds to cover publication costs of country reports
3. from CICIMAR to Uni Bremen – 10 000 € unused funds to cover publication costs of country reports.
4. from UNEW to UHULL – 8 000 € unused funds to cover workshop costs.
5. from UNEW to UNIABDN – 3 000 € unused funds to cover travel costs.

### **Communications**

Responsibility for flow of communications lied with the Project Co-ordinator (to and from the Commission, and to/from the Workpackage Leaders), and with the Workpackage Leaders (to / from the relevant members of the workpackage). This flow has been maintained by regular meetings, by an electronic portal established for the project, used both for a project-wide repository of documents (including agendas, minutes and technical documents) and for a repository and commentary on the timetable of meetings, milestones and deliverables.

INCOFISH participants communicated mainly by e-mail and through the INCOFISH website ([www.incofish.org](http://www.incofish.org)).

The Project Steering Committee, meeting once per year, met for the fourth time in February, 2008. There were other specific WP meetings that partners and members were attending. The complete list of meetings and workshops is included in Table S2.2 INCOFISH Milestones in the previous section.

### **Use and dissemination of knowledge**

All data, tools and concepts developed by INCOFISH are considered public goods and are made available through the INCOFISH web portal ([www.incofish.org](http://www.incofish.org)). Members of INCOFISH have volunteered to archive data and continue to make tools available beyond the duration of this project. Consortium partners accepted and authorised that the Commission disseminates relevant project information, including summaries and public project results, names and contact details of consortium partners through visual, oral and electronic media.

Incoming day-to-day information on subjects considered to be of interest to INCOFISH objectives were distributed to participants by the management team via e-mail.

A monthly newsletter - initiated in October 2005 – informed INCOFISH participants and colleagues from partner projects on major achievements and working success within the project.

Public participation was and still is envisaged mainly through the INCOFISH web portal where lay-persons can upload data such as observations of species or pollution events, attach their own web sites if relevant to INCOFISH, or discuss issues with experts in the relevant forum. Public awareness was also raised through traditional means such as regular press releases demonstrating success stories and guiding lay-persons to the INCOFISH web portal. Involvement of stakeholders or the public in general was an essential part of work packages 3, 5, 6, 7, 8 and 9. (For examples of success see Section 1 – Major achievements).

### **Benefits to SMEs**

There were two key benefits for the involvement of SMEs in the INCOFISH project. First, was the interaction with leading professionals and institutions in the field globally. This allowed the free exchange of ideas and knowledge between project participants ensuring that the latest trends and issues in the field became known. Second, the interactions allowed SMEs to innovate through the application of lessons learned from INCOFISH to be applied to commercial projects being undertaken by the company.

## Annex I

### INCOFISH Publications by 30<sup>th</sup> April, 2008

#### Publications (published / in press) in peer reviewed journals:

1. Abdallah, P.R. and Sumaila, U.R. (2007). A historical account of Brazilian policy on fisheries subsidies. *Marine Policy* 31, 444-450.
2. Ainsworth, C.H. and U.R. Sumaila, 2005. Intergenerational valuation of fisheries resources can justify long-term conservation: a case study in Atlantic cod (*Gadus morhua*). *Can. J. Fish. Aquat. Sci.* 62: 1104–1110.
3. Araújo, J., Mackinson, S and Hart, P.J.B. 2008. Exploring fisheries strategies for the western English Channel using an ecosystem model. *Ecological Modelling* 210: 465-477.
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5. Arreguín-Sánchez, F., M. Albañez-Lucero, J. A. López-Rocha. 2007. Type of bottoms and catchability spatial distribution as basic criteria to identify a potential MPA to recover the red grouper, *Epinephelus morio*, stock in the Campeche Bank, Mexico. MPA Symposium. Murcia Spain, September 25-28, 2007.
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- La Paz, México. XII Congreso Latinoamericano de Ciencias del Mar, Florianópolis, Brasil, Abril 2007.
10. Arturo Tripp Valdez, Francisco Arreguín Sánchez, Manuel Zetina Rejón y Víctor Cruz Escalona. Análisis de la estructura de la ictiofauna de fondos blandos de las costas de Nayarit, México. Reunión Bianual de la Sociedad Mexicana de Pesquerías: Retos de las Ciencias Acuáticas y Pesqueras en México. 2-4 Mayo 2007, La Paz, Baja California Sur, México.
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  20. Cheng He-Qin and Jiang Hong “Preliminary Study on Fishery Impact by Trophic Structure and Flow analysis in the East China Sea” published in the proceeding of the ICEC-2006. Hong had given a 15 minutes oral presentation in the conference to introduce our INCOFISH work.
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5. [Backflash files](#). The Backflash files are four studies that show how historical recognition of fisheries stock baseline has shifted with time.
6. [Before – After maps with predicted distribution before and after a certain point in time](#)
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10. Brazil ([.pdf, 468KB](#)),
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19. Sri Lanka ([.pdf, 408KB](#))
20. [CRIA Species Mapper](#)
21. [CRIA Mapping Tools](#)
22. [CRIA openModeller](#)
23. [Database search engine](#)
24. Dynamic maps where species distribution is predicted from the occurrence of the respective niche in space and time as predicted by physical models of the oceans.
25. Ecopath Model Collection list
26. Ecopath [WP4 Models list](#)
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29. Fish buying guide “Don’t eat babies” ([www.incofish.org/donteatbabies.php](http://www.incofish.org/donteatbabies.php)).
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36. Kaschner, K., J. S. Ready, E. Agbayani, J. Rius, K. Kesner-Reyes, P. D. Eastwood, A. B. South, S. O. Kullander, T. Rees, C. H. Close, R. Watson, D. Pauly, and R. Froese. 2007 AquaMaps: Predicted range maps for aquatic species. World Wide Web electronic publication, [www.aquamaps.org](http://www.aquamaps.org), Version 08/2007.
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42. [Outreach toolkit](#)
43. [Panukat Isda](#) (Philippine fish ruler)
44. [Press kit](#)

45. [Retailers guide](#)
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## Posters

1. ECNU: East China Sea Ecopath modelling had been shown on the 41st European Marine Biology Symposium hosted by University College Cork, Ireland, during 4th to 8th September, 2006.
2. IFM-GEOMAR: A common sense approach to ecosystem-based fisheries management. Presented in October 2006 at the Bergen conference on the ecosystem approach to fisheries management.
3. IMARPE: "Comparative analysis of the demersal community structure and trophic relations of the Peruvian hake *Merluccius gayi peruanus* and its by-catch of the years 1985 and 2001." Presented at the International Conference about the Humboldt Current System (Nov. 7<sup>th</sup> –Dec. 1<sup>st</sup>, 2006).
4. MCM-DEAT: Jarre, A., Paterson, B., Moloney, C.L., Miller, D.C.M., Field, J.G., Starfield, A.M. 2006b. Knowledge-based systems as decision support tools in an ecosystem approach to fisheries: comparing a fuzzy-logic and a rule-based approach. Poster No. 055, Humboldt Current Conference, 27 November - 1 December 2006, :Lima, Peru. MS, submitted for publication in the Conference Proceedings (Progress in Oceanography), February 2007.
5. MCM-DEAT: Paterson, B., Moloney, C.L., Jarre, A., Fairweather, T., Shannon, L.J., van der Lingen, C.M., Field, J.G. (2006). A fuzzy spin on fishy problems: a fuzzy-logic tool for multicriteria decision-making in the Southern Benguela. Poster No. 056, Humboldt Current Conference, 27 November - 1 December 2006, :Lima, Peru. MS in prep for publication, March 2007.
6. NRM (and other WP3 members) presented Aquamaps ([www.incofish.org/Results/Maps.php](http://www.incofish.org/Results/Maps.php)) to the Brazilian Society of Ichthyologists at their meeting in Itajaí, Santa Catarina, Brazil, in Jan/Feb 2007 (see [www.ebi2007.com/index.php](http://www.ebi2007.com/index.php)).

## Guides

1. Cubero-Pardo P. 2008. Code of Conduct for Ecotourism Activities in Visit Sites of the Galápagos Marine Reserve. Official Document of the Galapagos National Park Direction

directed to Operators, Guides and Visitors. Charles Darwin Foundation. Pp. 25. (English digital version and Spanish Printed Version).

### Newsletter articles

2. Gasalla, M. In - Newsletter: "Diario de bordo – Publicação trimestral do Instituto Oceanográfico, Universidade de São Paulo." Año 2, numero 7 – jul / ago / sept 2006.
3. Sumaila, U.R.. 2007. Briefing at the United Nations on global fisheries. SAUP Newsletter.
4. Sumaila, U.R: 2007. Fisheries Centre at the World Trade Organization. Fishbytes.

### Outreach Material

- Fish ruler Baltic
- Fish ruler North Sea
- Fish ruler Peru (for 5 regions)
- Fish ruler Philippines (Panukat Isda)
- Fish ruler Senegal
- [INCOFISH brochure](#) (English and German)
- Information flyers for all tools
- T-Shirt prints, caps, bags

### Media appearances:

INCOFISH participants can look back on a long series of media appearances in the last year of the project. To get an overview on INCOFISH media appearances within the reporting period please see below or go to [www.incofish.org/News/IncoMed.php](http://www.incofish.org/News/IncoMed.php) and to media appearances of WP8.

1. June 2008: [Pacific Nations Ban Tuna Boats to Stop Cod-Like Stock Collapse](#)  
Conservation areas along migratory routes and near sea mounts, where tuna spawn and feed, will help replenish stocks, Ussif Rashid Sumaila, Director of the ... [more ...](#)
2. June 6, 2008: **INCOFISH Star International Cooperation Project EC** ([.pdf 14.4 KB](#))  
INCOFISH EuroNews video presentation  
<http://www.euronews.net/en/article/06/06/2008/fishing-for-tomorrow/>
3. June 3, 2008: [map CRIA](#), **New GBIF portal launched**  
GBIF (Global Biodiversity Information Facility) has launched its new portal  
▶ <http://www.gbif.org/News/NEWS1212503794>  
GBIF are providing a new tool to create a niche model. They are using openModeller, a framework for niche modeling that is being developed through a project funded by Fapesp, coordinated by CRIA, INPE (Instituto Nacional de Pesquisa Espacial) and Poli  
▶ <http://openmodeller.sourceforge.net/>  
INCOFISH has financed part of the development of openModeller. The framework today has 8 algorithms and one is AquaMaps:  
▶ [http:// www.aquamaps.org](http://www.aquamaps.org)  
Users may select a marine species and specify to run a model using an environmental model within the ocean, ocean layers provided by INCOFISH. Through collaborative work with INCOFISH workpackage 3, pre and post analysis tools were also introduced. The interface that is being used by GBIF was developed through a collaboration between the University of Colorado and CRIA.
4. May 11 2008, The Observer ▶ [How the world's oceans are running out of fish.](#)
5. April 10, 2008: Sharkwater, NDR Germany Interview with Rob Stewart, Dr. Rainer Froese IFM-GEOMAR and more [Download : Sharkwater.mp3 \(6MB\)](#)
6. March 18, 2008: Overfishing Impact: Interview with Dr. Ussif Rashid Sumaila. Dr. Sumaila, director of the Fisheries Economics Research Unit at the University of British Columbia

- Fishery Center, talks about overfishing, its impact on the Ghanaian economy, and the global ramifications of a fish shortage in Africa. See video on YouTube:  
<http://www.youtube.com/watch?v=6Bfmyw-3yys?>
7. March 3, 2008: Globe and Mail ▶ [WTO weighs if EI for fishermen is an unfair subsidy.](#)
  8.  - INCOFISH Seafood guide - Hits 15800
  9.  - "Fisch im Handy" – 1150 Hits
  10. March 2008: [Fisch im Handy in "Bild der Wissenschaft"](#) ▶(pdf, 476 KB)
  11. March 2008: [Fisch im Handy - Slow Food](#) ▶(pdf, 387KB)
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  13. March 2008: [AAAS related release on tuna management](#)
  14. February 20, 2008, Regina Leader Post ▶ [Tuna could see cod-like collapse](#)
  15. February 20, 2008, The National Post ▶ [World's tuna stocks under seige, say scientists](#)
  16. February 20, 2008, The Vancouver Sun ▶ [Conservation measures needed to save tuna: experts](#)
  17. February 20, 2008, Innovations report  
▶ [Germany Learning from cod collapse to save tuna](#)
  18. February 18: UBC.ca ▶ [UBC scientist invokes future generations to save tuna populations from collapse](#)
  19. January 2008 Slow Food: Fisch im Handy ▶(pdf, 1MB)
  20. January 11, 2008, HR1 ▶ [Flossentiere, ökologisch korrekt – Einkaufstipps vom Forscher im Internet \(pdf, KB\)](#)
  21. January 03, 2008, RBB Kulturradio ▶ [Korrekt per Handy](#)
  22. December 2007, Kieler Nachrichten Fisch im Handy ▶(pdf, 1,661KB)
  23. December 14, 2007, n-tv.de ▶ [Entscheidung an der Theke Fisch im Handy](#) ▶(pdf, 123 KB)
  24. December 13, 2007, Presse release IFM-Geomar Fisch im Handy ▶(pdf, 36KB)
  25. December 12, 2007, Eurekalert ▶ [Ancient fish bones reveal the impacts of global warming beneath the sea](#) ▶(pdf, 225 KB)
  26. December 12, 2007 Nature ▶ [All fishing nations must unite to cut subsidies](#) (Sumaila and Pauly) ▶(pdf, 69 KB)
  27. October 31, 2007, CurrentResults.com ▶ [Escaped Fish Destroy Native Ecology](#)
  28. October 06, 2007 ▶ [Gefahr aus der Fishfarm, \(pdf, 194KB\)](#)
  29. July/August 2007 ▶ [Fisheries Centre at the World Trade Organization \(pdf, 319KB\)](#)
  30. July/August 2007 ▶ [The Sea Around Us Project Ne Newsletter \(pdf, 288KB\)](#)
  31. June 5, 2007 BBC ▶ [Fishing destabilizes Black Sea](#) ▶(.pdf, 936KB)
  32. May 2007, Pottkieker 05 ▶ [Love Fish, Mensa streicht bedrohte Fischarten aus dem Speiseplan \(.pdf, 644KB\)](#)
  33. May 26, 2007 Globe and Mail ▶ [A dose of global cod-liver oil](#) ▶(.pdf 24KB)

## Annex II Use and dissemination of knowledge

The Table below gives an overview on dissemination activities of each workpackage (1<sup>st</sup> year, 2<sup>nd</sup> year, 3<sup>rd</sup> year).

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
1	<a href="#">Project web-site</a>	Public, scientific	International	5000	IfM-GEOMAR	11
3	Article mentioning Fish Ruler in "Luebecker Nachrichten" <sup>1</sup>	General Public	Northern Germany	?	IfM-GEOMAR	7
4	Conference contribution (see Annex I: conference contributions).	Research	26 countries	86	CEFAS	3
5	Article on Fish Ruler in German Press <sup>2</sup>	General Public	Germany		IfM-GEOMAR	7
5	Spawning season fact sheet for European fish <sup>3</sup>	Fish wholesalers	Europe	?	IfM-GEOMAR	7
5 and 7	Fish Ruler <sup>4</sup>	General Public	Germany/Europe, other sites TBA	?	IfM-GEOMAR, eventually all WP members	7
7	Communicating European Research Conference <sup>5</sup>	Press and Scientists	Europe	Over 3000 at conference	IfM-GEOMAR	7
7	Indicators review paper <sup>6</sup>	Scientists, Policy Makers, general public	International (on INCOFISH portal)	?	IfM-GEOMAR with collaboration from CDF, MCM-DEAT, UNIABDN and CABAL	7
8	WP6 overview presented at the CDC project website <a href="http://cdc.fish.ku.ac.th/wp6/about_CT.htm">http://cdc.fish.ku.ac.th/wp6/about_CT.htm</a>	General public	n/a	n/a	CDC	6
8 - 13	Fish Ruler outreach project with High School in Kiel	Pupils and General Public	Germany	Fish consumers in Kiel # unknown	IfM-GEOMAR	7
9 - 11	Press releases in newsletter of IOUSP	General public	Brazil	?	IOUSP	4
10	WP 10 web-site, integrated within the FEU web-site, <a href="http://www-user.uni-bremen.de/%7Efeu/frame.html">http://www-user.uni-bremen.de/%7Efeu/frame.html</a>	(Environmental) Jurists	Coastal states	?	UNI HB	10
11	Presentation of Aquamaps	Research	UK	?	NRM	3
11	Oral presentation to 40th Annual	Researchers, fisheries	USA	35	CICIMAR	5

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
	Conference of the California-Nevada Chapter of the American Fisheries Society titled 'Conservation and exploitation in the northern Gulf of California: temporal and spatial simulations of the ecosystem'	managers and government agency representatives				
11	Oral presentation to 6 Postgraduate Week of South Baja California titled 'Conservación y explotación en el norte del Golfo de California: simulaciones temporales y espaciales del ecosistema'	University researchers	Mexico	70	CICIMAR	5
12	Presentation of Aquamaps	Students	Sweden,	20	NRM	3
12	Presentation of Aquamaps	Students	Brazil		NRM	3
12	Media briefing – University Press agency	General public	Brazil	ND	IOUSP	4
12	Conference (two contributions, see Annex I: conference contributions)	Industry, Fishers, Managers. MPA representatives, Federal and state governments, Federal Senate members, scientists, representatives of the ministries of fishing and ecology	Mexico	~ 30 persons	CICIMAR	4
12 + 13	Publications: Two book chapters	Research and Public in general but with technical contents	Mexico	ND	CICIMAR	4
12	Workshop: FAO Workshop on assessment of small pelagics in Northwest Africa	Research	Mauritania, Marocco, Senegal, Gambia, Holland, Russia	20	CRODT	7
3 - 12	Web-site links	WP members, Partners, Researchers, NGOs, Managers and the Public	Thailand and Namibia	Global, Thailand and Namibia in particular	Contractors responsible for linking the INCOFISH web site to theirs	8
Continuous	AquaMaps presented to scientists through personal contact to determine user needs and feedback	Research	Multiple	?	NRM	3
Year 1	Conference	Coastal resource managers in the Benguela countries of Namibia, South Africa and	Namibia, South Africa and Angola	?	UNAM	8

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
		Angola				
Year 1	Primary publications	Global	Namibia; Global	Managers, NGOs, stakeholders	CDC, UNAM	8
Year 1	Project web-site	WP9 members, Partners Technical committee	Costa Rica, Panamá, Colombia, Ecuador	Eastern Tropical Pacific Initiatives.	ECOLAP, Fundación Malpelo, CDF, Parque Nacionales de Colombia	9
Year 1	Direct e-mailing	Government Environmental Authorities, (Marina Mercante, Subsecretaria de Medio Ambiente, Subsecretaria de Turismo)	Ecuador	Local Authorities	ECOLAP/CDF	9
Year 1	Workshops	National Parks Stakeholders, Government Environmental Authorities, National NGO participants	Bi-national (Colombia – Ecuador)	Local stakeholders of NP- Marine – Coastal resources	CDF, ECOLAP, Fundación Malpelo	9
12 - 34	Publications of deliverables on the INCOFISH web-site	Jurists, administrative staff, fisheries managers	Coastal states	ND	UNI HB, APPRENDER UNAM, KESCOM, CABAL S.A.	10
13	Launching of portal at <a href="http://www.incofish.org">www.incofish.org</a>	Researchers, stakeholders, public	Global	Global	FIN	1
13	Project website: <a href="http://www.hull.ac.uk/incofish">www.hull.ac.uk/incofish</a>	General public	Multiple		UHULL	2
13	Presentation at Galapagos National Park Conference	International scientists and managers	Ecuador	60	CDF	2
13	Two presentations of Aquamaps	Students	Brazil		NRM	3
13	Conference presentation on the “small-scale fisheries database”, developed initially for ‘Thinking Big: A Global Look at Fisheries Science’, a symposium to honour Professor Daniel Pauly, for the 13th International Cosmos Prize & his 60th birthday, May 2, 2006, Vancouver, BC, Canada.	Scientists and students	Global	100	CDC	6
13	Workshop in Pattaya-Bangkok	WP6&8 members plus invited guests	Thailand and Namibia	Local Authorities	All	8

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
14	Conference Talk 'The implications to management of the relationship between the spatial extent of MPAs and management regime outside of MPAs'. - International Conference on Coastal Ecosystems, Campeche, Mexico.	Researchers and managers	International	100	UNEW	5
14	Conference Poster 'Towards an integration of the Campeche Bank ecosystem dynamics for ecosystem based fisheries management' – International Conference on Coastal Ecosystems	Researchers and managers	International	100	CICIMAR	4
14	Conference presentation on "Fishermen's perception about government support and attitudes towards management" (Pita, C., Pierce, G. & Theodossiou, I.) at ICES Symposium on Fisheries Management, Galway, Ireland, 27-30 June 2006.	Scientists, students, managers, general public	Global		UNIABDN	6
14	Internet Wizard for Maturity indicators at <a href="http://www.incofish.org">www.incofish.org</a>	General Public	International	?	IfM-GEOMAR and FIN	7
14	WP 10 workshop	WP members, WP 11, ECOST members, external specialists	Brazil, Nicaragua, Namibia, Kenya, Indonesia, EU,	17	UNI HB (responsible) APPRENDER UNAM, KESCOM,	10
15	Conference: Can the knowledge society turn around 500 years of overfishing? Presented at IIFETT conference, Portsmouth UK	Research, Industry, Managers, Public	International	40	IFM-GEOMAR	7
16	Conference	Research	26 countries	86	CEFAS	3
16	Launching of the 'Coastal Transects Analysis Model' and CTAM poster presentation at the Coastal Zone Asia-Pacific Conference (CZAP 2006), Batam, Indonesia, August 29 to September 2, 2006.	Scientists, coastal managers and practitioners	Global	300	CDC, IGS, FIN	6,1
17	Conference poster 'Using MPAs to	Researchers	International	120	UNEW	5

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
	control the age groups targeted by a fishery; can yield be increased?' - 41 <sup>st</sup> European Marine Biology Symposium					
17	Conference poster 'Temporal and spatial ecosystem scenarios towards conservation and exploitation conciliation in the northern Gulf of California' - 41 <sup>st</sup> European Marine Biology Symposium	Researchers	International	120	CICIMAR	4,5
17	Conference poster 'Towards an MPA strategy on the Campeche Bank for ecosystem based fisheries management' - 41 <sup>st</sup> European Marine Biology Symposium	Researchers	International	120	CICIMAR	4,5
17	Technical report on 'Visualization of Coastal Areas using Coastal Transects Analysis Model' (available on INCOFISH portal and CDC website).	Scientists, students, managers, general public	Global		CDC	6
17	E-mail invitation to publicized CTAM was sent widely to coastal practitioners and scientists (including INCOFISH members) and also posted in e-newsletter.	Scientists, coastal managers and practitioners	Global		CDC, IGS, UNIABDN	6
17	Conference presentation on "The importance of including social concerns when designating and implementing marine protected areas" (Pita, C., Pierce, G. & Theodossiou, I.) at the 41 <sup>st</sup> European Marine Biology Symposium. Cork, Ireland, 4-8 September 2006.	Scientists, students	International		UNIABDN	6
17	Fish Ruler: Der Fisch-O-Meter officially launched by Verbraucherzentrale Hamburg	Public, Media, Industry	Germany	thousands	IFM-GEOMAR	7
18	Update of DINARA Web site and link to INCOFISH	General public	Uruguay / multiple	?	DINARA	3
18	Publication	Research	Multiple	?	NRM/CEFAS	3
18	Interview by a Brazilian TV Program called "Mar sem Fim", TV Cultura	General public	Brazil	nationwide	IOUSP	4

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
	Channel					
18	WP6 website was updated with the summary of the WP6 & 8 workshop, coastal database, CTAM poster and PowerPoint presentations at CZAP06.	Scientists, students, managers, general public	Global		CDC	6
18	Poster: A common sense approach to ecosystem-based fisheries management. Presented at the Bergen conference on the ecosystem approach to fisheries management.	Research, industry	International	50	IFM-GEOMAR	7
19	2 Posters presented at Humboldt Current Conference, 27 November - 1 December 2006, :Lima, Peru. 1 MS, submitted for publication in the Conference Proceedings (Progress in Oceanography), February 2007, 1 MS in prep for publication.	Research, Fishing industry, managers	International	300	MCM-DEAT	7
19	Conference: The Humboldt Current System International Conference. Presented "Overfishing and environmental change cause male reproductive failure in Peruvian Hake, <i>Merluccius gayi peruanus</i> "	Research	International	300	IMARPE	7
20	Fish Ruler: "Chikipez" officially launched by IMARPE in Lima, Peru. <a href="#">Media briefing ChikiPez</a>	Public, Media, Industry	Peru	50 at press conference	IMARPE	7
20	Interview by GLOBO RURAL magazine	General public	Brazil	nationwide	IOUSP	4
21	Publication	Research	Multiple	?	CEFAS/NRM	3
21	A one-day expert consultation workshop was held at CDC.	Scientists and researchers	Thailand	10	CDC	6
21	Jannike Falk Petersen: Participated in the Arctic Frontiers conference and PhD workshop, Tromsø. Poster presentation "Ecosystem-based modelling for management of the Barents Sea benthos and related fisheries". PhD	Research	Arctic countries	30	UiT	8

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
	workshop presentation "Arctic ecosystems -are they vulnerable?"					
21	Claire Armstrong: Participated in the Norwegian Economists Annual Conference (Forskermøtet), Tromsø. Presentation: Effects of foreshortening of transferred quota in an ITQ market.	Research	Norway	30	UiT	8
22	Sumaila gave two talks, one at the 2007 AAAS Annual Meeting in San Francisco, on subsidies to deep sea fisheries: <a href="http://www.aaas.org/meetings/Annual_Meeting/">http://www.aaas.org/meetings/Annual_Meeting/</a> . The second at the Woodrow Wilson Centre for International Scholars: <a href="http://www.wilsoncenter.org/">http://www.wilsoncenter.org/</a> on globalization and fisheries in developing countries,	Research, policy makers, media, general public	Global	Large	UNAM	8
22	<a href="#">Press release, ISFG</a>	General public	Global	>1Million	FIN	1
22	<a href="#">Conference, Seafood summit</a>	Research, Industry	N & M America	150	FIN	1
22	<a href="#">Exhibition, ISFG at Seafood summit</a>	Industry ( food, aquaculture and fisheries)	N & M America	100	FIN	1
22	HELCOM Workshop: Represented INCOFISH WP7 and brought simple indicator use for fisheries management in the Baltic to the table.	Research	Estonia, Latvia, Lithuania, Poland, Finland, Sweden, Germany	17	MEI	7
23	<a href="#">Conference, Seaweed symposium, Japan</a>	Research, public	Japan, Asia	200	FIN	1
23	<a href="#">Exhibition, Seaweed symposium, Japan</a>	Research, public	Japan, Asia	200	FIN	1
23	Presentation	Research	UK	20	NRM	3
23	Oral presentation to 40th Annual Conference of the California-Nevada Chapter of the American Fisheries Society titled 'Conservation and exploitation in the northern Gulf of California: temporal and spatial simulations of the ecosystem'	Researchers, fisheries managers and government agency representatives	USA	35	CICIMAR	4,5

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
23	Oral presentation to 6 Postgraduate Week of South Baja California titled 'Conservación y explotación en el norte del Golfo de California: simulaciones temporales y espaciales del ecosistema'	University researchers	Mexico	70	CICIMAR	4,5
23	Seminar on CTAM was given at the joint Biology-Geography seminar series, Memorial University of Newfoundland, St. John's.	Scientists, researchers and students	Canada	50	CDC	6
23	Presentation: Fisheries Sustainability and sustainable seafood (in German). To the heads of the University cafeterias of Schleswig-Holstein, Germany	Industry, Public	Germany	10	IFM-GEOMAR	7
23	Rashid convened two special sessions, one on discounting and the other on fisheries subsidies at the North American Association of Fisheries Economists (NAAFE) conference,	Research	Mainly North America	Over 100	UNAM	8
24	Presentation at COLACMAR Conference, Brazil	International scientists and managers	South America	200	UNAL	2
24	2 Presentations of Aquamaps	Students	Sweden,	20	NRM	3
24	Seminar on CTAM was given as part of the 'Coastal Matters' lecture series, held in Corner Brook, Newfoundland	Scientists, researchers and students	Canada	15	CDC	6
24	Newspaper article <sup>11</sup> Western Star, local newspaper in Corner Brook published an article about CTAM	General	Canada		CDC	6
24	EU FP 6 project Profet Policy workshop: Represented INCOFISH WP7 and brought simple indicator use for fisheries management in the Baltic to the table	Research, industry	Estonia, Latvia, Lithuania, Poland, Finland, Sweden, Germany, Russia, Denmark	70	MEI	7
2006	Publication: Fairweather TP, Hara M, van der Lingen CD, Raakjaer Nielsen J, Shannon LJ, Louw GG, Degnbol P, Crawford RJM (2006a) The knowledge base for management of the capital-	Research, Fishing industry, managers	International	?	MCM-DEAT	7

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
	intensive fishery for small pelagic fish off South Africa. African Journal of Marine Science 28: 645-660					
2006	Publication: Fairweather TP, van der Lingen CD, Booth AJ, Drapeau L, van der Westhuizen JJ (2006b) Indicators of sustainable fishing for South African sardine ( <i>Sardinops sagax</i> ) and anchovy ( <i>Engraulis encrasicolus</i> ). African Journal of Marine Science 28: 661-680	Research, Fishing industry, managers	International	?	MCM-DEAT	7
1 <sup>st</sup> quarter 2007	Due to communication between WP10 and IUCN, the IUCN web-site provides links to the INCOFISH portal.	Professionals and general public	Multiple	?	UNI HB	10
Year 2	Conferences and exhibitions	Primary and secondary schools, guides courses	Ecuador/ Colombia	Local Communities	ECOLAP/CDF/ Fundacion Malpelo	9
Year 2	Media briefing aiming at strengthening common tourism research in Eastern Pacific bioregion	Local authorities and technical and scientific partners	Seascape/ INCOFISH/ other international projects	unknown	ECOLAP/CDF Parques Nacionales/F. Malpelo	9
Years 2&3	Workshops and publications as planned		Namibia, South Africa and Angola	Global	UNAM, UiT, UWC, CDC	8
25	Press release <a href="#">CRIA Mapping tools</a>	Media, Public, Research	International	4000	WP1, CRIA	1
25	Advertisement <a href="#">Parliament Magazine Advertorial CTAM</a>	Media, EU Governance, EU Commission, EU Parliament	EU	200	WP1, WP11, WP7	1
25	2 Presentations of Aquamaps	Students	Brazil	20	NRM	3
25	Presentation to Marine Sciences resreach group University of Essex ,A comparison of no-take zones and traditional fishery management tools'	Scientific researchers	UK	15	UNEW	5
25	Lecture at University of La Laguna, Tenerife, Canary Islands	University students, professors, researchers	Spain	40	CDC	6
25	Lecture at the ECOSUMMER, Marie Curie Training Program, in Heraklion, Crete	University students, researchers	Global	20	CDC, UNIABDN	6

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
25-36	Direct e-mailing	Government Environmental Authorities, guides and tour operators	Ecuador	Local at the level of Galapagos and Machalilla	CDF, ECOLAP	9
25	Side-workshop to the European Conference on Maritime Policy: 'Sea-Use Planning in the EU Coastal and Exclusive Economic Zones'	Professionals (IOs, academics and administrative staff)	Belgium, Germany, Netherlands, Portugal, UK	50	UNI HB	10
25	Presentation at the conference 'Sustainable Development in National and International Law. 20 years after Brundtland', held in Oslo on May 2 and 3	Academics, professionals	USA, Canada, Norway, Denmark, Sweden, Germany	50	UNI Oslo	10
26	Publication (testing modelling system outputs)	Research	Multiple	Global	NRM/CEFAS	3
26	CTAM website update (with Phase II)	University students, professors, researchers, government, managers, environmental organizations, general public	Global		CDC, FishBase, WP1	6
26	Publication (testing modelling system outputs)	Research	Multiple		NRM/CEFAS	3
26	Launching of <a href="#">Fishruler Senegal</a>	Public, resource managers, government	Senegal	>700	CRODT, IfM-GEOMAR, FIN	1,7
26	Fish size poster for Gulf of Thailand launched	Public, Industry, Media	Thailand	50	PSU	7
27	Conference Coastal Zone <a href="#">CZ'07 CTAM II</a>	Research	N &M America	200	WP1, WP6, WP8	1
27	Exhibition Coastal Zone '07 <a href="#">CTAM, INCOFISH Poster</a>	Public, scientific	USA, Canada, Mexico	200	FIN, CDC, UNAM	1,6,8
27	Conference presentation, People and the Sea IV Conference in Amsterdam	University students, professors, researchers	Global	35	CDC	6
27	Presentation, Coastal Zone'07 Conference in Portland, Oregon	University students, professors, researchers, environmental organizations	Global	45	CDC	6
27	MARE People and the Sea Conference, Amsterdam, NL	Research (mostly social-science)	International	25	IfM-GEOMAR	7

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
28	Press release, Aquamaps	General public	Global	>1Million	FIN, NRM	1,3
28	A stakeholder consultation workshop will be organized in Krabi Province, south of Thailand to discuss CTAM model for Ban Don Bay.	Fishers, coastal stakeholders, scientists and managers	Thailand	15	CDC	6
28	CTAM will be presented at the national conference on 'Coastal Habitats and Resource Management,' as part of the EU-funded project, CHARM.	Fishers, coastal stakeholders, scientists	Thailand	250	CDC	6
28	Our recent paper on ex-vessel prices (Sumaila et al. in <i>Journal of Bioeconomics</i> ) was cited by Steven D. Levitt the famous co-author of <i>Freakonomics</i> : see <a href="http://freakonomics.blogs.nytimes.com/2007/08/30/shrimponomics/">http://freakonomics.blogs.nytimes.com/2007/08/30/shrimponomics/</a>	Research, policy makers, general public	Global	Large	UNAM	8
28	Abbie Trinidad presented work non market values at the Coastal Zone 2007 Conference in Portland. She has also been developing a draft paper on the same.	Research	Global, mainly North America	Over 100	PRIMEX-FAME	8
28	Ratana Chuenpagdee presented her work on indicators and CTAM at Coastal Zone 2007 Conference in Portland.	Research	Global, mainly North America	Over 100	CDC	8
29	Press release MPA evaluation tool	General public	Global	>1 Million	FIN, CDF	1.9
29	Fishruler Philippines	Public, resource managers, government	Philippines	>700	FIN, IfM-GEOMAR	1,7
29	Presentation at MPA Symposium, Spain	International scientists and managers	Europe	200	UNIABDN	2
29	Conference talk Croatia	Research	Multiple	50	NRM	3
29	Conference talk Belgium	Research	Multiple	60	NRM	3
29	Conference talk-Spatial simulations of fishery management scenarios of the East China Sea	Scientists, policy officers and fisheries managers	International	50	ECNU	5
29	Conference talk-Simulating a MPA as a strategy for ecosystem-based fishery	Scientists, policy officers and fisheries managers	International	50	CICIMAR	5

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
	management of the red grouper in the Campeche Bank, Mexico					
29	Conference talk-The use of marine protected areas as part of ecosystem based management in Namibia	Scientists, policy officers and fisheries managers	International	50	SAMS	5
29	Conference talk-Managing mobile species with MPAs; the interaction between mobility and fishing mortality	Scientists, policy officers and fisheries managers	International	50	UNEW	5
29	Conference talk-Are bad MPAs any good, or just a new way of making old mistakes	Scientists, policy officers and fisheries managers	International	50	UNEW	5
29	Conference talk: "An evaluation of existing and proposed MPAs in the North Sea using Ecospace", "	Scientists, policy officers and fisheries managers	International	50	CEFAS	5
29	Conference presentation, European Symposium on Marine Protected Areas. Murcia, Spain	University students, professors, researchers	Global	40	UNIABDN	6
29	Paper: Global Cost of Overfishing	Research, Public, Industry	International	?	IFM-GEOMAR	7
29	Paper: case studies applying simple indicators to fisheries with different management and data availability	Research, Public, Managers, Industry	International	?	IFM-GEOMAR with all WP7 partners	7
29	Oral Presentation in the II Latin American Congress of Protected Areas, Bariloche, Argentina.	Guides and tour operators	International Ecuador	International, mostly Latin Americans	CDF, ECOLAP	9
30	Media briefing, Teachers day	Higher education	EU, Philippines	5000	FIN, IfM-GEOMAR	1,7
30	Press release ISFGII	General public	Global	>1 Million	FIN, IfM-GEOMAR	1,7
30	Update of DINARA Web site and link to INCOFISH	General public	Uruguay/multiple		DINARA	3
30	Publication (book chapter)	Research	Multiple		DINARA	3
30-32	Publications	Research	Multiple		NRM/all	3
30	Marine Protected Areas as a tool for ecosystem conservation and fisheries management", "Towards a coherent network of MPAs".	MPA managers, government officials and scientists	UK	60	CEFAS	5
30	Seminar, Marine Affairs Program, Dalhousie University, Halifax	University students, professors, researchers, environmental	Global	30	CDC	6

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
		organizations				
30	Public lecture, Canada Research Chair Lecture Series, Memorial University of Newfoundland, St. John's	University students, professors, researchers, environmental organizations, general public	Canada	85	CDC	6
30	Claire Armstrong: Presented; Habitats and fisheries; A missing link? At the SINTEF workshop; Value Creation in the Nordic Countries of Fisheries and Aquaculture in Akureyri, Iceland,	Research	Global: mostly developing countries	80	UiT	8
30	Rashid Sumaila: Gave a briefing to the G77 at the United Nations, Oct. 3; 2007. See attachments; presentation at a workshop on the Economics of Ecosystem Based Fisheries Management, Washington, D.C,	Developing country ambassadors and representatives at the UN	Developing countries	50	UNAM	8
30	Rashid Sumaila, contributed to the cover article for the most recent issue of Conservation Magazine (a publication of the Society for Conservation Biology): see <a href="http://www.conbio.org/CIP/article30713.cfm">http://www.conbio.org/CIP/article30713.cfm</a> ;	Research, policy makers	<b>Global</b>	Large	UNAM	8
30	Seminar 'Introduction to the law of the seas'	PhD students of Graduate School 'Global Change in the Marine Realm' (GLOMAR), University of Bremen	World-wide	15	UNI HB	10
31	Press release <a href="#">Shifting Baselines</a>	Media, Public, Research, NGO	International	1 Million	WP, WP2, CoML	1
31	Conference <a href="#">CoML '07 Backflash files</a> <a href="#">INCOFISH Poster</a>	Media, Public, Research, NGO	International	200	WP, WP2, CoML	1
31	Census of Marine Life All Program Meeting Auckland, New Zealand	International scientists General public	global	1500	UHULL WP1	2
31	Conference talk Sweden	Multiple	Sweden	120	NRM	3
31	Press release	Multiple	Multiple		NRM	3
31	Conference talk: 'Can marine protected	Scientists	International	50	SAMS	5

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
	areas be used to enhance fisheries in Namibia', workshop on 'Biogeochemical processes and fish dynamics in food web models for end-to-end conceptualisation of ecosystems', held in Trieste, Italy in conjunction with the European Conference on Ecological Modelling					
31	Conference talk: 'INCOFISH adventures with Ecospace' workshop on 'Biogeochemical processes and fish dynamics in food web models for end-to-end conceptualisation of ecosystems', held in Trieste, Italy in conjunction with the European Conference on Ecological Modelling	Scientists	International	50	UNEW	5
31	Conference talk: 'Abundance and trophic interactions in North Sea fishes' at the European Conference on Ecological Modelling, Trieste, Italy	Scientists	International	50	CEFAS	5
32	Press release <a href="#">Fisch im Handy</a>	Media, Public, Industry, Research, NGO, Govt.	Germany	1 Million	WP1, WP7	1
32	WP2 Project website ( <a href="http://www.hull.ac.uk/incofish">http://www.hull.ac.uk/incofish</a> )	General public, researchers, scientists and managers	global		UHULL	2
32	CTAM on EBM Tools Network	University students, professors, researchers, government, managers, environmental organizations, general public	Global		CDC	6
32	<a href="http://www.seafoodguide.mobi">www.seafoodguide.mobi</a> launched and made public	Public, Media, Industry	International	?	IfM-GEOMAR, FIN, UNIABDN, CRODT	7
33	Press release <a href="#">Seafoodguide.mobi</a>	Media, Public, Industry, Research, NGO, Govt.	International	1 Million	WP1, WP7	1
33	Event <a href="#">Seafood Summit '08</a> <a href="#">Seafoodguide.mobi</a> <a href="#">Media coverage</a>	Media, Donors, Industry; Seafood prod. NGOs, Research	International	>250	WP1, Seafood Choices alliance	1
33	Lecture at University of Aberdeen, U.K.	University students	U.K.	15	UNIABDN	6
33	Radio Interview: Radio interview with	Public	Germany	100s	IfM-GEOMAR	7

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
	German radio station about Mobile seafood guide and the INCOFISH project in general.					
34	WP2 Flyers and posters	General public, maritime history students	Maritime Historical Studies Centre, Hull, UK	200+	UHULL WP1	2
34	Interview for Audobon Magazine	Public, Conservationist	USA and other English Speaking	?	IfM-GEOMAR	7
34	<b>Size Matters: How Precautionary Single-Species Management Can Contribute To Ecosystem-based Fisheries Management</b>	Research	International	?		7
35	Advertorial <a href="#">Parliament Magazine</a> <a href="#">Project website</a>	Media, EU Governance, EU Commission, EU Parliament	EU	200	WP1, WP11	1
35	Advertorial <a href="#">Parliament Magazine</a> <a href="#">Seafoodguide.mobi</a>	Media, EU Governance, EU Commission, EU Parliament	EU	200	WP1, WP11	1
35	Press release <a href="#">Panukat Isda</a>	Media, Public, Research, Resource managers, Govt. NGO, LGU	EU, Philippines	4000	WP1, FIN	1
35	Press conference <a href="#">Panukat Isda</a>	National Media	Philippines	25	WP1, FIN	1
35	Exhibition Panukat Isda; <a href="#">INCOFISH tools</a>	Public, Research, Resource managers, Govt. NGO, LGU	Philippines	100	WP1, WP7, FIN, WFC PO, BFAR, CI, WWF	1
35	CTAM website update	University students, professors, researchers, government, managers, environmental organizations, general public	Global		CDC, FishBase, WP1	6
35	Presentation and consultancy at international conference on the evaluation of fisheries on seahake, 24-28 March 2008, Lima, Peru	Academics, professionals	Peruvian and international	50	IMARPE Lima	10
36	Workshop WWF, Panukat Isda	Research, NGO, LGU	Philippines	50	WP1, WP7, FIN, WFC PO, WWF	1
36	Panukat Isda campaign, CI	Research, NGO, LGU	Philippines	250	WP1, WP7, FIN, WFC	1

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
					PO, CI	
36	<a href="#">Training workshop BAS</a>	Research, NGO, LGU	Philippines	20	WP1, WP8, NFRDI, BAS	1
36	Internet Online Toolset launch	Research scientists, marine biologists and managers	global	global	UHULL WP1	2
36	<a href="#">Event Fishruler Senegal</a>	Public, resource managers, Govt.	Senegal	>700	CRODT, WWF	7
36	Public Television Interview on behalf of launching of fish ruler for Senegal	Public	Senegal	?	CRODT	7
25-36	Workshops	Scientists	South Africa, Mexico, Italy, Chile	8	UNIconcepcion, CICIMAR, MCM DEAT, CRDOT, ECNU	4
25-36	Scientific meeting contributions	Scientists	Mexico, Brazil, Morocco, Germany, Spain, USA, China, Sweden, Chile, Finland, Jordan, Italy, Dominican Republic, France	46	WP4 partners	4
25-36	Teaching: Lectures and courses	Students	Uruguay, Mexico, Chile	6	UNIconcepcion, CICIMAR, CEFAS, USP, MCM DEAT, UNIPAD	4
25-36	Formation of students: MSc PhD PostDoc	Students	China, United Kingdom, Brazil, Mexico, South Africa, Italy, Chile	17 8 1	EUCN, CEFAS, USP, CICIMAR, MCM DEAT, UNIPAD, UNIconcepcion	4
25-36	Direct e-mailing	Government Environmental Authorities, guides and tour operators	Ecuador	Local at the level of Galapagos and Machalilla	CDF, ECOLAP	9
Year 3	Conference	Coastal resource managers in the Benguela countries of Namibia, South Africa and Angola	Namibia, South Africa and Angola	?	UNAM	8

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
Continuous	AquaMaps presented to scientists through personal contact to determine user needs and feedback.	Research	Multiple		NRM	3
Continuous	WP 10 web-sites <ul style="list-style-type: none"> <li>• INCOFISH portal</li> <li>• New FEU (UNI HB) portal, <a href="http://www.feu.uni-bremen.de/en/projects.html">http://www.feu.uni-bremen.de/en/projects.html</a></li> </ul>	(Environmental) jurists, academics, fisheries managers	Coastal states	?	UNI HB, Fishbase	10
Beyond Month 36	Contribution accepted for upcoming scientific conferences	Scientists	Spain, Italy, Japan	3	WP4 Partners	4
Beyond Month 36	Publication: Diagnosis of the state of exploitation of some demersal species in Senegalese waters.	Research, Government	Senegal, other Western Africa	?	CRODT, IFM-GEOMAR	7
Beyond Month 36	The 'Shifting Baselines' work will continue through the 'History of Marine Populations' network ( <a href="http://www.hmapcoml.org">www.hmapcoml.org</a> ): the respective tools and databases are already available from one of their members ( <a href="http://www.hull.ac.uk/incofish">http://www.hull.ac.uk/incofish</a> ).	Multiple	Global	?	UHULL	2
Beyond Month 36	The 'Biomapping' work will continue as part of the FishBase ( <a href="http://www.fishbase.org">www.fishbase.org</a> ) and SeaLifeBase ( <a href="http://www.sealifebase.org">www.sealifebase.org</a> ) work; both projects have adopted AquaMaps as their standard maps. Also, the Biomapping team is actively searching for suitable calls to continue the leading work on impact of climate change on species distributions. They are also searching for sponsors to develop the AquaMaps routines into a new service on mobile phones: "What species are currently near me?"	Multiple	Global	?	IfM-GEOMAR, NRM, FIN	3
Beyond Month 36	The standardized ecosystem models compiled and produced by the 'Ecosystem Modelling' team will find a new home with the ECOPATH portal	Multiple	Global	?	UBC	4

Actual / Planned Dates (Month of project)	Type	Type of audience	Countries addressed	Size of audience	Partner responsible / involved	WP no.
	(( <a href="http://www.ecopath.org">www.ecopath.org</a> ).					
Beyond Month 36	The MPA planning tool will remain available from the AquaMaps web page ( <a href="http://www.aquamaps.org">www.aquamaps.org</a> ) and also from FishBase and SeaLifeBase.	Multiple	Global	?	IfM-GEOMAR, FIN	1,5
Beyond Month 36	The Coastal Transects Analysis Model has been included in the database of the Ecosystem-Based Management Tools Network (( <a href="http://www.ebmtools.org">www.ebmtools.org</a> ).	Multiple	Global	?	CDC	6
Beyond Month 36	The data and tools produced by the 'Simple Indicators' Team will remain available through the FishBase and SeaLifeBase web portals, in addition to uptake by NGOs and Government agencies.	Multiple	Global	?	IfM-GEOMAR, FIN, UBC	7
Beyond Month 36	The databases developed by the 'Valuation of ecosystem services' team will be hosted by the Sea Around Us portal, UBC, Canada ( <a href="http://www.seaaroundus.org">www.seaaroundus.org</a> ).	Multiple	Global	?	UBC, UNAM	8
Beyond Month 36	The Code of Conduct for sustainable ecotourism and the step-by-step tools for assessment of marine parks will be hosted and further developed by the Eastern Tropical Pacific Corridor (CMAR) consortium (( <a href="http://www.cmarpacifico.org">www.cmarpacifico.org</a> ).	Multiple	Global and specifically the countries of the Eastern Tropical Pacific Corridor	?	CDF, USFQ, Fundacion Malpelo	9
Beyond Month 36	The 'Legal Instruments' results will be published by IUCN in form of a 500 pages book.	Multiple	Global	?	Uni Bremen	10
Beyond Month 36	The INCOFISH portal itself (( <a href="http://www.incofish.org">www.incofish.org</a> ) will be maintained by IFM-GEOMAR for at least two more years.	Multiple	Global	?	IfM-GEOMAR, FIN	1,11

<sup>1</sup> Fish Ruler: "Der Fischmax" and "The Fishermin" were printed for distribution in Germany and other countries bordering the North Sea and the Baltic, showing size at maturity (also for fillet and headless lengths) so the ruler can be brought to the fish market by consumers to make sure the fish they buy have had the chance to reproduce. The material of the rulers is a flexible and washable PVC. As of January, 2006, the Verbraucherschutzzentrale (consumer rights center) in

Hamburg has taken over the design and distribution of these rulers in Germany, which are now called "Fisch-o-Meter" and plan to distribute them at their offices Germany-wide. In the third phase of WP7, we will create and test similar rulers in partner countries in the tropics.

<sup>2</sup> Spawning season fact sheet for European fish: A printed sheet for fish wholesalers with spawning seasons and maturity weights for common food fish. The wholesalers can refer to this sheet when buying fish from fishermen to ensure they only buy mature fish.

<sup>3</sup> Article in German press about fish rulers: The German wire service wrote an article about the threatened Cod stocks in the North Sea and featured the Fisch-Max as a tool the public can use to help combat this problem. Over 100 newspapers and magazines ran this story and there was much public enthusiasm generated.

<sup>4</sup> Communicating European Research Conference: Rainer presented FishBase and the Fishermin ruler at a press conference, and fish rulers were handed out at a booth shared with ENBI. There were 3000 registered attendees at the conference and ca. 500 rulers were handed out.

<sup>5</sup> Indicators Review: Deliverable 7.1 was to review existing indicators and choose suitable simple ones for implementation by the workpackage. This work was made into a review paper that was published on the INCOFISH website. It will be used also as a basis for a future paper to be published in the peer-reviewed literature.

<sup>6</sup> Fish Ruler outreach project: As part of the German Nat-Working program, in which High School science classes are paired with research institutions in the country, Three students from Gymnasium Wellingdorf in Kiel conducted a research project using the Fisch-Max. They visited 12 markets in Kiel where fish are sold, and measured the fish in order to determine how many undersized fish are for sale. Additionally, they interviewed fish buyers to find out their perceptions and knowledge of problems facing fish stocks in their area and assess their willingness to participate in using the ruler and buying only mature fish. Their final results are still pending.