



incofish

INCO Contract No. 003739

Integrating Multiple Demands on Coastal Zones
with Emphasis on
Aquatic Ecosystems and Fisheries
(INCOFISH)

Instrument:
STREP

2nd Semi-Annual Progress Report

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

The overall objective of INCOFISH is to conduct specifically targeted strategic research in integrated coastal zone management suitable to contribute to the goals set by the World Summit for Sustainable Development in Johannesburg, such as restoring healthy fish stocks and coastal ecosystems by 2015.

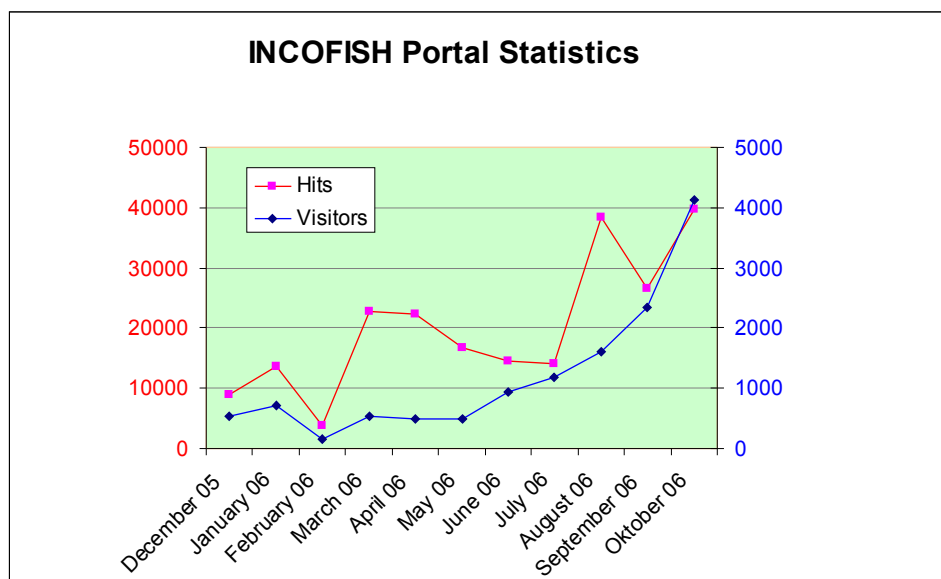
The main achievement during the reporting period was the launch of several new services in the INCOFISH portal at www.incofish.org. These include an improved Species Information Service, a new international Seafood Advisory, a tool to identify invasive exotics for every country in the world, and standardized “AquaMaps” for several thousand species. The usefulness of these tools is confirmed by an exponential increase in visitors, see graph below. Alltogether, four scientific papers have been published by INCOFISH members, 5 have been submitted for publication and more than 60 are in various stages of preparation.

The scientific and technological objectives and achievements of INCOFISH are closely related to the work plan of its 11 work packages and can be summarized as follows:

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.

Major achievement during the reporting period: Successful launching of the INCOFISH portal at www.incofish.org including amongst others a service page with “species information service”, “sea food guide”, “invasiveness wizard”, etc. (D1.5). Since the start of protocolling web statistics in December 2005 the INCOFISH webpage / portal had 22,1322 hits from 13,115 visitors. Numbers are increasing steadily with more services becoming available.



Overcome the 'Shifting Baseline' Syndrome (WP2)

To resolve the “Shifting Baseline” Syndrome in Fisheries, 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 are assembled, collated and analysed to establish baselines against which the current status and restoration goals of selected marine ecosystems can be assessed.

Major achievements during the reporting period: Relevant historical datasets have been assembled and submitted to the INCOFISH portal. Analysis has started. Thirteen scientific publications are in preparation.

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.

Major achievements during the reporting period: Standardized electronic maps with predicted distribution (likelihood of occurrence) for over 4000 coastal zone species relevant to this project are available on the INCOFISH portal (D3.1). One scientific publication is submitted, four are in preparation.

Provide Ecosystem Models (WP4)

INCOFISH provides 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.

Major achievements during the reporting period: Compiled more than 100 Ecopath models of trophic ecosystem networks which are now available at the INCOFISH portal (D4.1). One scientific paper is published, two are submitted one book chapter and 19 scientific papers are in preparation.

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.

Major achievements during the reporting period: Draft Review of MPAs has been produced. Six scientific publications are being produced.

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.

Major achievements during the reporting period: Finalized first phase of Coastal Transects Analysis Model (CTAM) and made it available on INCOFISH portal (D6.2). Five scientific publications are in preparation.

Provide Simple Indicators for Sustainable Resource Use (WP7)

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

Major achievements during the reporting period: Approximately 200 new size at first maturity estimations were retrieved from the peer reviewed and grey literature for entry into FishBase and to be used by WP 7's fish ruler wizard (D 7.2). Local fish rulers are in production in Peru and Senegal, with Galapagos and Estonia soon to follow (part of D.7.4). First version of the Bycatch indicator tool is complete, allowing users to see the percentage of bycatch generated by certain species and gear types (part of D.7.3). One paper has been published, two have been submitted, and two more are in progress (part of D.7.5).

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 then allows valuation of sustainable versus unsustainable management regimes and thus provides the public and politicians with the information needed to combat unsustainable management.

Major achievements during the reporting period: Finalized Economic & Social Database and made it available on INCOFISH portal (D8.1). Two papers have been published, seven are in preparation (one in cooperation with WP7).

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.'

Major achievements during the reporting period: A draft review of adaptive management mechanisms for marine eco-tourism has been prepared. Code of conduct is under development. Two publications are in preparation.

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.

Major achievements during the reporting period: Reviews of legal instruments were finalized for Indonesia and the European Union and are in advanced stage for Brazil, Nicaragua, Namibia and Kenya. (parts of D10.2 and D10.3). Apart of these country reports three more publications are in preparation.

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: Prepared 1st annual report and complementary management report and forwarded both to the European Commission (D11.1). Prepared and submitted request for a rider to the contract. Reviewed deliverables of WPs and made suggestions for improvement. Represented INCOFISH achievements at 3 international meetings and at several occasions in the German media, see www.incofish.org/News/IncoMed.php. A first review of INCOFISH progress was organized at the occasion of the 2nd meeting of the Project Steering Committee in Los Banos, Philippines, in May 2006.

Section 2 - Workpackage Progress

A review of the progress within each of the WPs follows.

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

Overarching objective:

The "Data, Tools, and Outreach" workpackage provides 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.

Work for the reporting period started 1st May, 2006.

b) Progress towards objectives

Re (1) Achieved; see www.incofish.org

Re (2) Infrastructure in place, no data sets received for archiving so far.

Re (3) Partly achieved, data submissions ongoing for tools development: WP2 D2.1 Dataset under submission, implementation and search engine development started, WP3 D3.1 submitted and implemented, anticipating new dataset submissions for D3.2. WP4 D4.1 Submitted and implemented, D4.2 Models partly submitted. WP5 D5.1 draft submitted, WP6 D6.1 and D6.2 submitted and implemented as well as CTAM (alpha version). WP7 D7.2 Data submitted, D 7.3 Tools under development, WP8 D8.1 Dataset submitted, WP9 D9.1 No submissions, WP10 D10.1, D10.2, D10.3, D10.4 submitted and implemented, Ministries guide and Country profiles for India and South Africa implemented. WP11 D11.1 First annual progress report (month 13) Achieved, Part taken in 2nd APStCmeeting, News pages uploaded on portal for outreach and project orientation purposes.

Re (4) Done by CRIA in the previous reporting period, anticipating mapping layers from WP3 to be submitted to CRIA for online implementation and improved project usage of the Species mapper.

Re (5) Achieved; see www.incofish.org

Re (6) Achieved; see www.incofish.org, Forum Tab.

Re (7) Available through FishBase – Fishwatcher tool.

Re (8) Assisted WP2, WP4 and others in building their web presence.

Re (9) Continuously ongoing

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

FIN:

- International Seafood Guide: Phase 1 delivered in September 2006;
- in cooperation with IfM-GEOMAR: Web portal launched and running (D1.5); Species Information Services: Phase 1 delivered in May 2006; D7.1 and D7.2 uploaded on portal;
- in cooperation with IfM-GEOMAR and NRM: Web-based maps running on portal (D3.1);
- in cooperation with IfM-GEOMAR and CICIMAR. Database with relevant data for ecosystem modelling uploaded and implemented on portal (D4.1);
- in cooperation with CDC: ICZM review uploaded on portal (D6.1); CTAM 1st stage implemented on portal (D6.2);
- in cooperation with CDC and UNAM: Database of social and economic information on coastal stakeholders implemented on portal (D 8.1);
- in cooperation with CDF and USFQ: Report on Criteria to determine carrying capacity and LACs for ecotourism uploaded on portal (D9.1);
- in cooperation with UniBremen: Deliverables D10.1 to D10.4 implemented on portal.

CRIA

implemented the aquamaps algorithm in the openModeller library and developed a windows package available for openModeller Desktop which includes the aquamaps algorithm (<http://openmodeller.sourceforge.net/openModellerDesktopDebugVersionSetup.exe>) (contribution to presentation of WP3 results on the portal).

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

None.

e) Workpackage Co-ordination

Communication with other WPs is satisfying. WP1 is following the time table and makes continuous and steady status improvements progressing according to schedule.

Communication and coordination of data submissions, software development and web implementations has been successful for all WPs . Organized workshop 1.1.1 in Los Banos attempting to coordinate all WPs on datasubmissions and tools development with FishBase team, May'06. Meeting with The Fisheries Secretariat in Stockholm to introduce the INCOFISH project and discuss possible development with them, July '06. Meeting with Jonathan Ready and Sven Kullander of WP3 in Stockholm on web implementation and cooperation, July'06. Meeting with Ratana Chuenpagdee of WP6 in Los Banos on CTAM development, August '06. Participated in WS4.2 in Cape Town, September '06. Outreach attempt with WP6, WP2, WP4 and WP5 for Coastal Zone '07 conference submitted for review, October'06. Collaboration attempt with WorldFish Center and Conservation International, Philippines on fisheries management tools review, still under development. Photographic outreach project still under development.

f) Dissemination of knowledge

Overview on WP1 outreach activities

Actual Date	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
May '06	Project web-site	Public, Research	Global	global	WP1
Aug '06	Press release(press/radio/TV)	General public	Philippines	regional	BFAR/Fish-Base
Aug '06	Media briefing	Higher education	Indonesia	300	WP6/WP1
Aug '06	Conference	Research	Indonesia	50	WP6/WP1
Oct '07	Exhibition	Industry (sector agricultural development, fisheries)	Philippines	100	WP1/Fish-Base
Oct '06	Posters (project)	NGO, LGU	Philippines	100	WP1/Fish-Base
Oct '06	Flyers (project)	NGO, LGU	Philippines	100	WP1/Fish-Base

WP Number: 2**WP Name: Shifting Baselines**a) Workpackage objectives and starting point of work for the reporting periodOverarching 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 the period started 1st May, 2006.

(i) Intermediate Activities:

The partners agreed at the Tallinn workshop in March 2006 that WP2 would examine selected species and time periods in eight large marine ecosystems (LME). A further five LMEs were identified as candidates for analysis, as follows:

LME	Species	Period
Baltic Sea	all, especially herring	1752-2000
Benguela	snoek	1815-2001
Caribbean	snappers, sharks, rays	1970-2005
Celtic-Biscay Shelf	herring, haddock	1960-2005
Humboldt Current	demersal species	1950-2005
North Sea	all, especially herring & haddock	1752-2000
Pacific Central	sea cucumber, lobster	1960-2005
SE Australian Shelf	tiger flathead	1918-1957
<i>Candidates for Analysis</i>		
<i>Gulf of Thailand</i>	<i>all species</i>	<i>1950-2005</i>
<i>Gulf of California</i>	<i>all species</i>	<i>1700-2005</i>
<i>Newfoundland/Labrador</i>	<i>cod</i>	<i>1698-1992</i>
<i>Iberian Shelf</i>	<i>abalone, sardine</i>	<i>1700-2000</i>
<i>Black Sea</i>	<i>all species</i>	<i>1500-2000</i>

(ii) Research Activities:

on 1 May 2006, the WP2 partners were engaged in the following research activities:

CDF colleagues were "cleaning" 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, from fishermen had been designed. Trial interviews and interviewer training were taking place.

CEFAS colleagues were collecting data on North Sea catches from the railway traffic returns printed in British Parliamentary Papers, 1880-1910.

IMARPE colleagues were analysing data pertaining to four demersal species to provide evidence for three papers in preparation

MEI colleagues were gleaning historical data from Russian customs books pertaining to catches of herring and other species in the Gulf of Riga.

UNAL colleagues were interviewing fishermen to gain the perspectives of practitioners on change in the fisheries since 1970.

UNIABDN colleagues were collating time series data relating to landings of herring and haddock in Scotland since 1960.

UHULL colleagues were extracting data from the *UK Annual Statements of Trade* relating to fish exports from South Africa – a proxy for information on catches – in the 1815-1900 period.

RUC colleagues were analysing catch, effort and environmental data relating to the eel and herring populations of the Limfjord since the mid-eighteenth century.

(iii) Data Management

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

On 1 May 2006, the database was under development, with sample data and draft metadata submitted by WP2 partners being appraised, revised, tested and entered into the WP2 data framework.

b) Progress towards objectives

Re (1) After investigating the potential of the five candidate LMEs listed in section 1a, the Gulf of Thailand and the Gulf of California were selected for analysis. Historical data pertaining to fishing catch and effort in these LMEs has been assembled by UHULL. This complements the historical data relating to the eight previously selected LMEs listed in section a, which has been submitted by the WP2 partners in draft and final form for incorporation in the WP2 database.

Objective 1 is close to being attained.

Re (2) The WP2 partners are analysing the historical data they have collated in respect of the selected species and LMEs. The data will be disseminated through the INCOFISH website, which is connected to WP2 website and data facility (<http://www.hull.ac.uk/incofish>) developed by UHULL in conjunction with colleagues in WP1.

Metadata has been submitted by each WP2 partner and will be edited by the WP leader before dissemination via the INCOFISH website. The Internet Toolset that will drive the WP2 database search engine is under development in collaboration with WP1.

Objective 2 is close to being attained.

Re (3) Establishing baselines and restoration goals is the next stage in the WP2 research effort. It will be attempted once all the datasets and metadata have been submitted, edited and launched online, and will form the focus of workshop 2 in July 2007.

Objective 3 will be attained by month 34.

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

CDF A total of 170 interviews were completed from June to September in Santa Cruz, San Cristóbal and Isabela. This information will be combined with the scientific information, and used to evaluate the status of the Galapagos fisheries.

CEFAS North Sea catch data gleaned from UK railway traffic returns collated and submitted as dataset to WP2 data manager. One paper published: Pinnegar J.K., Hutton T.P. & Placenti V. (2006) 'What relative seafood prices can tell us about the status of stocks', *Fish and Fisheries* 7 (3): 219-226. One paper submitted: Pinnegar & Engelhard 'Taking the long view: The 'shifting baseline' phenomenon revisited' *Reviews in Fish Biology & Fisheries*.

IMARPE Time-series of the distribution of the 15°C isotherm by depth and latitude off Peru. Evaluation undertaken of time series of length-weight relationship of Peruvian hake, calculating the condition factor to investigate more about the condition of these fish over time. Research & writing of three papers (Benites & Wosnitza, see section a) progressed. Oral presentations and papers prepared for the International Humboldt Conference (Nov 2006), based on the time series compiled for WP 2.

MEI Editing of special volume of *Fisheries Research* progressed, with 12 papers under review. Customs House data transcribed and submitted as dataset to WP2 data manager. Research & writing of one paper (Ojaveer, see section a) progressed.

UHULL Synthetic analysis of data submitted by partners progressed. Research on 'shifting baselines' in Gulf of California LME commenced. One paper submitted: Barnard & Starkey, "A Limited Shelf Life: Britain's North Sea Oil/Gas and Fishing Interests since 1960" *Fisheries Research*. Research & writing of three papers (Phillips, Nicholls, see section a) progressed. WP2 database assimilated with, and connected to, WP1 website. The internet-ready Toolset that will drive the WP2 database search engine is under development in conjunction with WP1.

UNAL Interviews in the northern part of the Caribbean coast completed. Interviews in central and southern areas commenced. Presentation and paper for COLACMAR meeting in Brazil prepared.

UNIABDN Report on fisheries of west Scotland prepared. Paper on long-term change in fish stocks of Moray Firth progressed (Pita).

RUC Research & writing of five papers (Poulsen et al, see section a) progressed. One paper submitted: Poulsen & Holm "A fishery of historical magnitude. Reconstructing the 17th-19th centuries catches of herring, eel, whitefish and plaice in Limfjorden, Denmark" *Fisheries Research*. Data relating to catches & effort in Limfjord eel and herring fisheries collated and submitted as dataset to WP2 data manager.

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

None

e) WP2 Co-ordination activities

WP2 is on schedule to complete all deliverables by their due dates.
 WP2 is on schedule to publish five scientific papers by month 34.

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

The WP2 data manager at UHULL has 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 is collaborating with colleagues at CDF regarding the organisation of WP2 workshop 2, which will be held in the Galapagos in July 2007.

f) WP2 Dissemination Activities

Table: Overview on WP2 outreach activities

Actual Date	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
June 2006	Galapagos National Park Conference	Fishermen and managers	Ecuador	60	CDF
Nov 2006	Humboldt Conference	International scientists and managers	Peru, Chile, Ecuador	200	IMARPE
April 2007	COLACMAR Conference, Brazil	International scientists and managers	South America	200	UNAL
Sept 2007	MPA Symposium, Spain	International scientists and managers	Europe	200	UNIABDN

Planned publications

The following papers are in preparation

Benites & Wosnitza (IMARPE) "Comparative analysis of the community structure of hake and its by-catch between 1995 and 2001"

Benites & Wosnitza (IMARPE) "Changes in the distribution area of Peruvian hake: effect of fisheries"

Benites & Wosnitza (IMARPE) "Patterns of long-term changes in four selected demersal species off Peru"

Ovajeer (MEI) *Fisheries Research* (guest editor, special issue on long-term human impacts on marine ecosystems)

Poulsen (RUC) "Investment structures and the marine environment in the Limfjord pound net fisheries, c. 1690-1830" (for submission to *Scandinavian Economic History Review*)

Poulsen (RUC) & Jakobsen "The flight of the eels - Spatial changes in distribution of Limfjord eel fisheries, c. 1750-1920"

Poulsen (RUC) "The nature of historical regime shifts in Limfjorden"

Poulsen (RUC) "Climate analyses of Limfjord herring vs other European herring fisheries"

Poulsen (RUC) & Ojaveer (MEI) "Long term fluctuations in the eel fishery, c. 1800-2000"

Nicholls & Järnmark (UHULL/FIN) "The philosophy and science of managing historical data" (for submission to *Computing and History*)

Phillips & Starkey (UHULL) "Finding regime shifts in Southeast Australia: using the fish to understand the ecosystem" (for submission to *Fisheries Research*)

Phillips & Starkey (UHULL) "A partial use of historical baselines in fisheries management" (for submission to *Fish and Fisheries*)

Starkey et al (UHULL) "Overfishing: An Age-Old Issue"

g) Synergies with other Projects or Initiatives

Strong synergies exist between INCOFISH WP2 and the History of Marine Animal Populations (HMAP) project, in terms of scientific objectives, research methods, data dissemination and the institutions and personnel engaged in both initiatives.

Synergies exist between INCOFISH WP2 and the EU-funded Marine Biodiversity and Ecosystem Functioning (MarBEF) network of excellence, which has an historical dimension in its socio-economic research theme.

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

The "Biomap" 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.

Starting point of work for the reporting period was 1st May, 2006 (Project month 13).

b) Progress towards objectives

The most recent period has addressed objectives 3 and 5 in particular, preparing an expert verification system for the standardised electronic maps (NRM with WP1), obtaining suitable datasets and advice from oceanographers/climatologists to allow modelling of potential future distributions of species (NRM), and producing multi-species mapping tools (NRM and WP1).

Objectives 1 and 2 had previously been accomplished. However, effort was made in order to add data from other sources in order to provide the most up to date output. This included addition of the OBIS occurrence dataset (NRM and WP1).

Before/After maps according to Deliverable 3.2 should be available online in November 2006 through the AquaMaps system (NRM and WP1).

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

CDF: Input from CDF focussed on providing occurrence data for marine organisms in the Galapagos from the CDF fisheries occurrence database 1997-2003 with further data to be made available shortly. CDF has also started production of a high resolution environmental dataset with which to model distributions of marine organisms at a local scale.

CEFAS: Input from CEFAS towards the modelling procedure has resulted in them taking the lead on a validation paper to justify the AquaMaps system in relation to existing presence only ecological niche modelling programs such as GARP. The previously noted paper 'Modelling the distribution of marine fish in UK waters and the use of validation criteria for model selection' was submitted and went under peer review process. It is currently due for re-submission.

DINARA: Input from DINARA focussed on providing further occurrence data for the Southwest Atlantic Ocean. The sources are surveys carried out by national fisheries research vessels in the Uruguayan EEZ and adjacent international waters. Selection criteria and data quality controls were adopted in order to add those records to existing databases (e.g. FishBase) and to build an institutional database. Environment data (in addition to SST and depth) continued to be included in the institutional database, with salinity completely added and chlorophyll partially added.

KESCOM/WCS: Having resolved the technical issues of the previous reporting periods, this reporting period was spent further compiling occurrence data for coral reef fish and sea cucumber species. They have also been obtaining local environmental data to allow fine scale mapping. Communication with WCS is still relatively limited due to their location and internet connection opportunities.

NRM: Prepared more distribution maps (AquaMaps) together with WP1 through obtaining further occurrence datasets and depth data. Co-ordinated main activities and maintained contact with work package members, mainly by e-mail; Maintained collaboration with WP1 for mapping most recently by providing further environmental layers to WP1 (CRIA); Began a manual for use of AquaMaps with various partners (normal and expert review versions); In combination with CEFAS, made a major effort to select species and produce occurrence subsets and modelled distributions for testing AquaMaps against other presence only models; Took the lead on a paper to demonstrate the use of Before/After maps to show the effects of fishing pressure and spread of invasive species; Lead discussion with oceanographers/climatologists and modellers of primary production on the availability of data for different seasons and for different modelled climate scenarios; Attended meetings of the Global Terrestrial Observation System Biodiversity group (B-GTOS) and Global Earth Observation System of Systems (GEOSS) to represent aquatic organisms (particularly those in the coastal zone).

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

None.

e) Work package Co-ordination

Work package membership has remained intact. Though NRM and CEFAS have contributed most to the deliverables of the work package thus far, finer scale mapping projects of the other work package members are underway and should demonstrate that skills have been transferred and that the information systems can be applied locally.

The timetable represents and incremental growth of maps and tools for analysis of distributions. The WP is generally progressing in line with the timetable.

The co-ordination of the work-package has been maintained chiefly by e-mail (with monthly updates) following the first WP3 workshop, and data being distributed mainly as e-mail attachments. NRM may potentially assist in teaching part of a course on modelling marine distributions for a summer school under the EUROCEANS project (www.euro-ceans.org) . Co-operation with B-GTOS and GEOSS will continue (see NRM activities - section 1c).

f) Dissemination of knowledge

Table: Overview on WP3 outreach activities

Actual Date	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
2006 11	Project web-site	Internet users of AquaMaps	Global	Global	NRM
2006 03 onward	Direct e-mailing	Experts for reviewing maps	Global	15+	NRM
2006 08	E-mail list	AquaMaps developers and biomappers generally	Global	50+	NRM

Planned publications

1. 'Modelling the distribution of marine fish in UK waters and the use of validation criteria for model selection' –submitted to the Journal of Applied Ecology.
2. 'AquaMaps – ecological modelling of native range distributions with expert input' – Ecological modelling.
3. 'Mapping changes in species distributions due to fishing pressure and introductions' – Undecided journal as yet.
4. 'Biodiversity of the oceans' – Undecided journal as yet, but high impact.
5. 'The potential effect of climate change on ocean biodiversity' – Undecided journal as yet, but high impact.

g) Synergies with other Projects or Initiatives

Synergies with INCO Partner Projects: Data is being shared with FishBase and the Sea Around Us Project. Synergies with other Projects or Initiatives: Data is also being shared with OBIS and mapping competence is being shared with GBIF-Sweden and CSIRO-Australia.

WP Number: 4	WP Name: Ecosystem Modelling
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a) Workpackage objectives and starting point of work for the reporting periodOverarching 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-levels 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...).

Main activities aimed at deliverables D4.1 and D4.2 (September and November 2006, respectively) which are directly associated to objectives 1 (make available data for construction of models) and 2 (construct standardized models). Also the organization of the work with WP5 on marine protected areas was planned (objective 3) associated with deliverable D4.3 (spatial ecosystem models). These activities were initiated formally in March 2006. Objective 4 (exploration and analysis within and between models and deliverables D4.4 and D4.5 were not defined in detail at this stage. Starting date for this period was May 2006.

b) Progress towards objectives

Re (1) All partners were involved in Objective 1 (D4.1) guided by partner CICIMAR. Objective and deliverable were finalized.

Re (2) All partners are involved in Objective 2 (D4.2). Important progress was made. This objective and deliverable will be completed by November 2006. In all cases partners have been involved with different intensity in surveying time series data and environmental series. Both are an important part for the modelling progress.

Re (3) Regarding objective 3 (work closely with WP5), partners ECNU, CICIMAR and UNEW have been working with partners within WP5, UNEW and NIES, in the construction of the East China Sea ecosystem model. Also CICIMAR made some progress in the two study cases associated with WP5, the construction of the trophic model of the Campeche Bank (which is almost ready), and the trophic and spatial model for the

Northern Gulf of California (both finished). It is foreseen that partners UNI Concepción, CRODT, UNIPAD, CEFAS-UNEW, USP, besides the previously mentioned partners, will finalize spatial models in collaboration with WP5. This deliverable is expected to be available by February 2008.

Re (4) Regarding objective 4 and D4.4 and D4.5, work is in progress. Partners are presently working on the following models: MCM DEAT - Benguela Current; UNI CONCEPCION - Humboldt Current; CRODT - Senegambian System; CICIMAR - Gulf of California; UNIPAD - Adriatic Sea; UNIABDN - Moray System; CEFAS and UNEW - North Sea; ECNU - East China Sea; CICIMAR- Gulf of Mexico; IOUSP - Southern Brazil Bight; CICIMAR - Campeche Bank; CICIMAR - Northern Gulf of California. The last two are being constructed as part of WP5 commitments.

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

CRODT: Senegambian system

The main task was the development of the Senegambian model. During this period essential work was the compilation of relevant data for model construction. Fisheries statistics has been also compiled for the artisanal and industrial fisheries. The model is now well balanced.

ECNU: East China Sea

Ecosystem model of the East China Sea was constructed based on surveyed data during 1997. Model required a strong effort by participants since they have not background on the use of Ecopath with Ecosim suite of programs. A strong effort was made also in working closely with other partners, CICIMAR (WP4) and UNEW (WP4 and WP5) for modelling process. In order to continue with modelling process, a database is being developing on the environmental forcing (as primary production), group biomass, fishing effort and CPUE for the East China Sea dynamic model.

UNIPAD: Adriatic Sea

The functional groups of the lower trophic network were decided following the classical subdivision into major groups: greater detail was focused on the microbial loop that is considered to play a key role in the Northern Adriatic trophic network. Fishes have been subdivided in 11 groups making a statistical analysis of their diet. Cetaceans and sea birds were included too. Data collection come from a survey on literature, statistical data from national institutes and port authorities, field data coming from recent surveys, expert knowledge and some guess estimates. The work was carried out in collaboration with the department of Biology of the University of Padua (Prof. M. Rasotto and Dr. C. Mazzoldi). LASA strongly collaborate with deliverable D4.1 (searching and organization of information). Concerning meta-analysis (objective 4) of trophic networks, LASA proposed to analyse a huge set of calibrated trophic network in order to study universal scaling.

MCM DEAT: Benguela system

Intensive modeling of the southern Benguela has been undertaken. A revised and improved model of the southern Benguela ecosystem for 1978 has been constructed and used for comparative purposes across time periods.

Updated time series of catch, abundance and effort data from 1950 onwards were collated. Detailed time series fitting simulations have been underway with sensitivity testing of model fitting to available time series completed in July-September. Work is currently underway to improve EwE model fits to time series data, especially for small pelagic fish, by means of incorporating environmental time series as environmental drivers of ecosystem dynamics. A workshop was held in Cape Town from 19-22 May 2006 to tackle the southern Benguela ecosystem time series from a different perspective, to define periods of ecosystem change using principle component analyses, to apply a new graphical representation to detect ecosystem changes over time, and to throw some light on the processes involved and how the ecosystem functioning has changed (direct inputs to WP 4). Best and updated time series were carefully collated and a collaborative project initiated with Norwegian partners, which is underway and will extend over the next 12 month period

IOUSP: Southern Brazil Bight

Data culling, compiling and processing, in order to parameterize the South Brazil Bight model. Model contains 33 functional groups and 6 fishing fleets. Modelling the South Brazil Bight ecosystem (23-28° S). A balanced final version model.

CEFAS: North Sea

Cefas have continued to work on construction and documentation of the North Sea model. The model is now complete and in the progress of being parameterised in Ecosim. An outcome of modelling workshop in Capetown was that a new model was constructed to represent the period 1973. This will allow for investigation of regime shifts. The technical report is in progress so that the model can be officially made available. Tentative papers were planned at the second workshop and these will be pursued as soon as the

model is documented. Work has begun on collation of data and analysis for construction of a spatial model by March 2007.

UNEW: East China Sea and North Sea

The WP4 activities I have been involved in are assisting ECNU (and NIES) to prepare the East China Sea Ecopath model. In addition UNEW traveled to ECNU, Shanghai, for 5 days in the beginning of June to provide additional assistance with the Ecopath model.

UNI CONCEPCION: Humboldt Current

Trophic model based on Ecopath has been actualized and improved; for this surveys information activities were displayed to identify and collect new and better data. The group is analyzing benthic biomass data from marine protected areas to be incorporated into the model. Particularly a strong effort is being developed in concentrate information on the jumbo squid stocks to be particularly included in the new model. This group is working in the organization of a potential paper focused on ecosystem indicators within a meta-analysis framework.

CICIMAR:

Models for the Gulf of California and Gulf of Mexico are being constructed / improved. They are integrated models constructed from several independent models. The Campeche Bank and the Northern Gulf of California, are being constructed as part of the collaborative work within WP5. In addition alternative spatial modelling (not Ecopath based) particularly on the Campeche Bank is being developed. These models (red grouper distribution and habitat; and spatial population dynamics) will complement to Ecospace (red grouper is the major fishery reason to explore MPAs in the Campeche Bank).

Gulf of California ecosystem

Model is being constructed from two previous models from the Northern and Central-East Gulf of California ecosystems. Information is being added from the Central-West region. Model contains about 100 functional groups conserving the identification of origin. About 15 fleets are being also considered. A compilation of environmental series and fishing related time series is under development. Dr. Salvador Lluch-Cota from the CIBNOR (La Paz, Mexico) is collaborating in this task. Currently a database of historical catch records for the last 50 years is available

Gulf of Mexico ecosystem

Model is being emphasizing benthic ecosystems of the Mexican continental shelf of the Gulf of Mexico. This is an integrated model that is being constructed from the about six different models and contains more than 100 functional groups (even when it is under review). Time series of fisheries data and environmental series are being collected. Currently a database of historical catch records for the last 50 years is available.

Northern Gulf of California

The trophic model for the Northern Gulf of California was constructed. Model contains almost 40 functional groups. Time series of relative abundance and environmental series were culling and incorporated into the model. Habitats were identified and an Ecospace model was constructed.

Campeche Bank

An integrated model for the Campeche Bank ecosystem was constructed, collecting missing information and improving input data. Model comprises the north continental shelf of Yucatan and the Campeche Sound systems. Time series of fisheries and environmental data are being collected at this scale.

Alternative modelling

There are some advances in spatial modelling based on neural nets modeling applied to the red grouper fishery on the north continental shelf of the Yucatan peninsula. At this stage, association between types of bottoms with stock abundance was established using neural network analysis. Some useful information related to MPAs emerged regarding habitat preference during reproductive aggregation, as well as for juvenile fish. Spatial and time series of environmental data are being collected with the aim of habitat identification. A PhD student is involved full time in this research.

There are also some results showing the spatial distribution of catchability of the red grouper on the continental shelf of Yucatan. Currently there are available annual and seasonal patterns showing catchability behavior, particularly on the light of reproductive aggregation and concentration of juvenile fishes. A PhD student is involved full time in this research.

UNIABDN: Moray System

The process of model construction is still at data collection stage. Partner argues they are limited by time, that they depend on other data holders to provide information (at their convenience). It is also argued insufficient funds to support people for the project.

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

IOUSP: A potential conflict is prevented with the deliverable D4.3 related to spatial analyses. IOUSP suggested a closer collaboration with partners but two actions failed due to constraints in budget availability. Alternatives are being analyzed.

UNIABDN: Contribution to deliverable 4.2 is delayed since model is still under construction and data are still being collected.

e) Workpackage Co-ordination

No changes in responsibilities and within the WP4 occurred in the period.

Timetable of WP4 is carried out as programmed. Up to now no significant changes are expected.

During the third week of May 2006 both, the 2nd meeting of the Steering Committee and the WP1 workshop were developed. In the first case the work was focused on the advances of the WPs activities, as well as the preparation of the 1st Incofish Annual Report. In the second case the workshop was aimed to discuss and agree on ways to interact with WP1 for deliverables commitments and activities to improve communication and diffusion of the project outputs.

After a meeting of Rainer Froese with Villy Christensen and Daniel Pauly in early May 2006 at the Fisheries Centre from the UBC, Canada, collaboration between INCOFISH and Sea Around Us projects was agreed. This agreement involves particularly WP4 and WP5. Planned work involve particularly Dr. Villy Christensen (Ecopath and Ecosim suite of programs developed and expert in ecosystem modeling) who agree in participate and advice on Ecosim and Ecospace modeling, as basic tools for WP4 and WP5. Workshop on Ecosim was programmed and developed in September 2006) and on Ecospace is programmed by March 2007.

CICIMAR, MCM DEAT and CEFAS organized the 3rd WP workshop in September 2006 in Cape Town. Of particular relevance was collaboration with the Sea Around Us Project, and particularly with Dr. Villy Christensen. The workshop focused on Ecosim dynamic modelling emphasizing the use of time series data and environmental forcing. Along with the workshop activities such as training, exploration of new developments, fitting time series, review of policy search routines were practised, as well as discussions about underlying concepts associated to the modelling process. Other relevant aspect during the workshop were the direct interaction with WP1 regarding the presentation of WP4 products on the incofish portal, and its interaction with Ecopath.org portal. With exception of UNIABDN, all WP4 partners were present in the workshop, plus 9 external guests.

ECNU, CICIMAR, UNEW and NIES continue the coordination with ECS modeling process. Two meetings were developed in ECNU, Shanghai, China, one in UNEW, Newcastle, UK; and one in CICIMAR, La Paz, BCS, Mexico. Meetings were successfully developed. Next meetings (for dynamic and spatial modeling) are programmed for May 2007..

Interaction with other WPs

WP 1 - Data, tools and outreach.- Deliverable 4.1 about 140 Ecopath models uploaded into the Incofish portal. Details to ultimate presentation in the portal are being worked by WP4

WP 5 - MPAs, Marine Protected .- WP4 has been worked close to WP5 (ECNU, CICIMAR, UNEW and NIES partners) as described above.

WP6: LASA collaborated with 2 coastal questionnaires to the ICZM consultation executed by WP6

WP 7 - Sustainability indicators.- some actions were initiating concerning collaboration in one paper as well as culling data to prepare a fish rule.

WP 8 - Valuation of Ecosystem. Some discussions during the Cape Town workshop acted as a first advance in further collaboration, particularly on management.

WP 10 - Legal instruments. A document concerning description of legal instruments within this framework continues under preparation.

WP 11 - We initiated organization of the 2nd Semi-annual meeting to be held in La Paz, Baja California Sur, Mexico. At the local level WP4 initiated such organization.

f) Dissemination of knowledge

Table: Overview on WP4 outreach activities

Actual Date	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
3-5 October	Fishery Committee for the Eastern Central Atlantic - 18th Session	Research and administration	Countries of Fishery Committee for the Eastern Central Atlantic/FAO	Researcher and fisheries administration	CRODT
4-8 Sep	Conference and Poster on 41 st European Marine Biological Symposium (41 st EMBS,)	Researcher	Cork, Ireland	300	ECNU, CICIMAR & UNEW
Jul/ago/sep	Newsletter of the Instituto Oceanográfico University of São Paulo	General Public	Brazil		USP
26-29, June	Nine Conferences: International Conference on Coastal Ecosystems: Towards an integrated knowledge for an ecosystem approach for fisheries	Research	Mexico	?	CICIMAR
September 4-8,	Conference: 41 European Marine biology Symposium at University of Cork, Ireland	Research	Ireland	?	CICIMAR
September 26-28	The Bergen Conference on Implementing the Ecosystem Approach to Fisheries.	Research	Norway	?	UNI Concepción
September 5-6	Two Conferences: Technical Workshop "Present state of the common hake (<i>Merluccius gayi</i>) stock and its fishery in Chile".	Research	Chile		
June 23	EUROCEANS Summer School on Ecosystem Oceanography	Training	Denmark		MCM DEAT

Planned publications

1. (tentative title) Impact of fishing on marine ecosystems: structure, functioning and organization. (Journal: Nature. Author leading F. Arreguín-Sánchez)
2. (tentative title) Metabolic scaling relations in marine ecosystems trophic networks (Journal: Science or Nature. Author leading Luca Palmeri)
3. (tentative title) Searching global ecosystem patterns. Journal: Nature. (Author leading F. Arreguín-Sánchez)
4. (tentative title) Key upwelling ecosystem processes response to the overfishing in a global scale. (Journal to be defined. Author leading Cheng Heqin)
5. (tentative title) Fishing and climate: comparison of model based indicators. Journal to be defined. Author leading Kathryn Lees)
6. (tentative title) The impact of bycatch on marine ecosystems (Journal: Nature. Author leading F. Arreguín-Sánchez)
7. (tentative title) Average mutual information as an indicator or trends in fisheries (Journal to be defined. Author leading Manual J. Zetina-Rejón)
8. (tentative title) Mapping key species in world food webs (Journal to be defined. Author leading Hugo Arancibia & Sergio Neira).

9. (tentative title) Study on Fishery Impact by Trophic Structure and Flow analysis in the East China Sea. (Journal to be defined. Author leading Cheng Heqin)
10. (tentative title) A trophic network model for the evaluation of sustainable fishery in the Northern Adriatic sea (Journal suggested: Ecological modeling. Author leading Luca Palmeri)
11. An ecosystem-based fisheries management scenario for the South Brazil Bight using a simulation model (Journal suggested: Ecological Modelling. Author M.A. Gasalla)
12. Fitting and validating models to different time series data – what does it tell us about the robustness / usefulness of models (Journal to be defined. Author leading Mackinson et al.)
13. A step-by-step examination of forcing factors driving changes in marine ecosystems (Journal to be defined. Author leading Mackinson et al.)
14. Searching for model-based indicators of regime shifts. (Journal to be defined. Author leading Mackinson et al.)
15. An integral trophic model of two interdependent ecosystems at the Southern Gulf of Mexico. (Journal: Ecological Modelling. Author leading Manuel J. Zetina-Rejón.
16. The collapse of the pink shrimp, *Farfantepenaeus duorarum*, fishery in the Campeche Sound, Mexico: a history revealed. Journal Fish & Fisheries. Authors: Francisco Arreguín-Sánchez, Manuel Zetina-Rejón, Mauricio Ramírez-Rodríguez, Victor Hugo Cruz-Escalona
17. Ecosystem based management: finding ways to make compatible exploitation and conservation in the Northern Gulf of California. Journal Fish & Fisheries. Authors: Diego Lercari-Bernier and Francisco Arreguín-Sánchez.
18. Spatial distribution of catchability for the red grouper *Epinephelus Morio*, fishery on the Campeche Bank, Mexico (Journal: Fisheries Research. Authors: Jorge Alberto López-Rocha and Francisco Arreguín-Sánchez)
19. Spatial distribution of the red grouper, *Epinephelus morio*, on the Campeche Bank, Mexico, in relation with type of bottoms. Journal: Fisheries Research. Authors: Mirtha O. Albañez-Lucero and Francisco Arreguín-Sánchez.
20. An investigation on the effect of shrimp-trawl by-catch mortality on benthic ecosystems. Authors: Francisco Arreguín-Sánchez, Manuel J. Zetina-Rejón, Victor H. Cruz-Escalona, Diego Lercari-Bernier, Pablo del Monte-Luna, Victor H. Galván-Piña. Submitted to: North American Journal of Fisheries Management.
21. Exploring management strategies to optimize harvesting of fisheries in the Central Gulf of California ecosystem. Authors: Francisco Arreguín-Sánchez, Susana Martínez-Aguilar and Juana López-Martínez (partially supported by Incofish). Submitted to Ecological Modelling.
22. Preliminary Study on Fishery Impact by Trophic Structure and Flow analysis in the East China Sea. Proceedings of the meeting. The Second International Conference on Estuaries & Coast (ICEC-2006).
23. Shannon, L.J., Coll, M., Cury, P., Neira, S., Roux, J.-P. The role of small pelagic fish in the ecosystem. Climate Change and Small Pelagic Fish. Book chapter, in preparation

g) Synergies with other Projects or Initiatives

- ECNU had close communication with the coordinator team of the INCO partner project PASARELAS during the end of September, and we are now planning further research on the SDSS with our Chinese colleagues.

- WP 4 is cooperating with the “Sea Around Us Project” on use and application of Ecopath with Ecosim suite of programs as well as on Ecopath models data base.

- IOUSP: “Modelling the marine ecosystem of the outer shelf, slope and oceanic area off South Brazil (23-33°S / 100-1000m depth / 1996-2002 period)”. University of São Paulo Instituto Oceanografico (IOUSP) and Foundation University of Rio Grande (FURG) initiative through REVIZEE National Program, Brazil.

- CICIMAR: Two project in the Gulf of California on the impact of shrimp trawling fishing on ecosystems (SEMARNAT-CONACyT, 2002-C01-1231 and SAGARPA-CONACyT 2005-1-12004)

WP Number: 5

WP Name: Marine Protected Areas

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

Overarching 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 was 1st May 2006.

b) Progress towards objectives

During the reporting period the main activity for WP5 has been preparation of the deliverable 5.1 review of MPAs. This work has involved UNEW, NIES and CICIMAR. A draft version of the report has been completed. The final version of the report will be submitted during November 2006. A draft manuscript on 'MPAs and marine spatial management in the East China Sea' has been prepared by NIES and UNEW on the basis of the report. The draft manuscript is undergoing final revisions prior to submission to an international journal.

WP5 has been assisting WP4 with preparation of spatial models required for analysis of MPA impacts for deliverable 5.2. NIES and UNEW have been assisting ECNU with preparation of the East China Sea model. CICIMAR have been working on preparation of the Campeche Bank model.

Preparations have been made to include analysis of spatial models of the northern Benguela upwelling and the Gulf of Thailand for deliverable 5.2, extending the scope of deliverable 5.2 beyond the initial work plan specified in technical annex I.

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

Contractor	Work Performed
UNEW	<ul style="list-style-type: none"> • Preparation of D5.1 review report, including preparation of the North Sea section, introduction and conclusions. Coordinating the inputs of various WP5 members on their respective case study LMEs and compiling the final review. • Assisting ECNU with preparation of the East China Sea Ecopath model, including a visit by Will Le Quesne (UNEW) to ECNU. • Coordinating with WP4 on work towards deliverable 5.2. • A paper has been prepared and submitted: 'A comparison of no-take zones and traditional fishery management tools for managing site attached species with a mixed larval pool'. • Attended two international scientific conferences, International Conference on Coastal Ecosystems (Campeche, Mexico, June), and European Marine Biology Symposium (Cork, Ireland, September). An oral presentation was made at the first conference and a poster presentation at the second. • Assisting NIES with preparation of the draft manuscript on MPAs and spatial management in the East China Sea. • Initiating a review of movement and dispersal by marine organisms to assist with the development and interpretation of models for deliverable 5.2. • Attended the joint WP4- WP5 Ecosim workshop in Cape Town, September 2006. • Attended the WP1 and project steering committee meeting in Los Banos, Philippines, May. • Workpackage coordination and administrative tasks. • Initial preparations made for an Ecospace workshop to be held with WP4 in La Paz, Mexico in March 2007.
CICIMAR	<ul style="list-style-type: none"> • Construction of an integrated model of the Campeche Bank ecosystem, collecting

- missing information and improving input data/
- Preparation of the Campeche Bank ecosystem MPA review for deliverable 5.1.
- Attended two international scientific conferences, International Conference on Coastal Ecosystems (Campeche, Mexico, June), and European Marine Biology Symposium (Cork, Ireland, September). An oral presentation was made at the first conference and two poster presentations at the second conference.
- Attended the joint WP4- WP5 Ecosim workshop in Cape Town, September 2006.
- NIES
 - Preparation of the review of spatial management and MPAs in the East China Sea for the deliverable 5.1 review.
 - A draft manuscript on 'MPAs and marine spatial management in the East China Sea' has been prepared.
 - Assisting ECNU with data collection for the East China Sea Ecopath model, specifically collecting data on effort, landings and CPUE by Chinese fleets in the East China Sea, and bioeconomic data related to these fleets.
 - Assisted ECNU, CICIMAR and UNEW with preparation of a paper on the analysis of the East China Sea ecopath model.
 - Attended a meeting at ECNU in May with the WP4 members of ECNU and two experts on East China Sea fishery resources for a seminar on the development of the East China Sea Ecopath model.
 - Held a meeting at NIES in August with ECNU (WP4) to consider the fishery data requirements for the East China Sea ecopath model.
- CEFAS
 - CEFAS were not required to provide inputs to WP5 during this reporting period, although John Pinnegar has been liaising with WP3 and WP4 over preparation of the North Sea model.

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

WP5 has been delayed in submitting the final version of deliverable 5.1. A draft report has been submitted, and the final version of the report is due to be submitted during November. The delay was due to slow responses from CICIMAR and NIES in relation to requests for information and clarifications from UNEW.

NIES has been continuing providing additional support to WP4 for the development of the East China Sea Ecopath model.

The northern Benguela upwelling, and the Gulf of Thailand have been added to the systems to be considered in the analysis for deliverable 5.2. These additions have been made beyond the scope of the workplan for WP5 laid out in technical annex I.

At present WP5 is on target to complete deliverable 5.2 and 5.3 on schedule, however this is dependant upon the model provided by WP4 being available in accordance with the time plan in Annex I.

e) Workpackage Co-ordination

- Two further LMEs have been added for consideration in D5.2. These development and analysis of spatial models for these LMEs will be lead by Sheila Heymans.
- NIES and CICIMAR have been providing inputs for Deliverable 5.1. The inputs were often delayed, and in cases the initial inputs were considered insufficient. This lead to delays in compiling the final report as requests for further information had to be sent out to NIES and CICIMAR.

b) Following the delay of the final submission of D5.1, WP5 is on schedule to provide the deliverables in accordance with the original (corrected) time plan laid out in Annex I.

c) UNEW communicated extensively with all members of WP5 over the preparation of the report for D5.1. This included determining a unified structure for the report, advising WP members where more information was required and requesting clarifications where submissions from WP partners were not clear.

UNEW has been coordinating travel within the WP to arrange meetings to discuss the development of the work and to identify and attend relevant conferences to present work by WP5.

UNEW has been monitoring the progress by WP partners and taking steps to make sure the work is on course to achieve the deliverables according to the specified time plan.

UNEW has been coordinating the close interaction between WP4 and WP5 with regards to developing the models required for the simulation analysis to be conducted by WP5.

f) Dissemination of knowledge

Table: Overview on WP5 outreach activities

Actual Date	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
26-29 June 2006	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
26-29 June 2006	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
4-8 September 2006	Conference poster 'Using MPAs to control the age groups targeted by a fishery; can yield be increased?'- 41 st European Marine Biology Symposium	Researchers	International	120	UNEW
4-8 September 2006	Conference poster 'Temporal and spatial ecosystem scenarios towards conservation and exploitation conciliation in the northern Gulf of California' - 41 st European Marine Biology Symposium	Researchers	International	120	CICIMAR
4-8 September 2006	Conference poster 'Towards an MPA strategy on the Campeche Bank for ecosystem based fisheries management'- 41 st European Marine Biology Symposium	Researchers	International	120	CICIMAR

Planned publications

'A comparison of no-take zones and traditional fishery management tools for managing site attached species with a mixed larval pool' submitted to Fish and Fisheries.

'MPAs and marine spatial management in the East China Sea' (provisional title) draft version has been prepared for potential submission to Conservation Biology.

'Temporal and spatial ecosystem simulations of spatial management in the northern Gulf of California' (provisional title) draft version in preparation for potential submission to Ecological Modeling.

'The potential of MPAs for managing mobile stocks' (provisional title) model analysis in progress for potential submission to ICES journal of Marine Science.

'A new way to make old mistakes; do 'bad' MPAs help fish stocks?' (provisional title) in prep, target journal not yet identified.

g) Synergies with other projects or initiatives

CEFAS has been liaising with the PROTECT project in relation to the 'European Symposium on MPAs' to be held in Spain, September 2007, WP5 intends to be well represented at the symposium.

WP Number: 6

WP Name: Coastal Transects

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 the reporting period was the development of the 'Coastal Transects Analysis Model' (CTAM software), with the discussion at the joint WPs 6&8 workshop in Bangkok and the WP1 workshop in Los Banos, both in May, 2006.

b) Progress towards objectives

The focus of the activities during this reporting period is in the development of CTAM software. With the help of FishBase staff, CTAM Phase I was developed and launched at the third Coastal Zone Asia-Pacific Conference (CZAP06) in Batam, Indonesia, in August 2006. Many participants expressed interest in CTAM and tested the model that was made available in a stand-alone laptop during the poster sessions. A report on the development of CTAM (WP6.2) was delivered in September 2006 (about one month delay). CTAM has now been uploaded on the INCOFISH portal and about 65 records have been entered by users. The preparation is underway in the revision of CTAM (to add interactive features), in the classification analysis, and in the determination of interactions and flows. The activities are led and coordinated by CDC, and supported by other WP members.

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

Contractor	Activity
CDC	<ul style="list-style-type: none"> • Contributed case studies of Mexico and Thailand to WP6.1 • Developed an annotated database of web - resources (including software) and scientific literature (more than 90 scientific articles) on coastal classification systems around the world and interactions between coastal elements and their impact on fisheries productivity. • Contributed to CTAM software development • Populated CTAM with data from literature • Presented CTAM at CZAP06 Conference • Lead author of WP6.2 • Prepared a procedure for cluster analyses (classification routine) • Developed matrix of interactions among coastal ecosystems and human activities • Collected data for the development of the interaction and flow prototype (based on the Gulf of California LME)
IGS	<ul style="list-style-type: none"> • Lead author of WP6.1 • Contributed to CTAM software development • Participated in the launching of CTAM at CZAP06

- UNIABDN
- Mass distribution of news and invitation about CTAM Phase I
 - Developed and processed coastal transect database and GIS maps and analyses
 - Contributed to CTAM software development
 - Contributed two case studies (East and West coasts of Scotland) for WP6.1
 - Interviewed and meeting with fishers and stakeholders at the two study sites in Scotland
 - Prepared a procedure for cluster analyses (classification routine)
 - Presented two papers (see Table 3) at scientific conferences

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

Originally, CTAM Phase I would contain a transect classification routine. Upon discussion among WP members, it was deemed more appropriate to use CTAM to first capture as many data about the coastal areas as possible before running the classification. More interactive features of CTAM have been suggested and thus some additional work is put on implementing that. The new schedule for the release of CTAM has been developed (see Section 2b).

e) Workpackage Co-ordination

WP members have regular discussion by e-mail and face-to-face discussion (mainly within partner organization). There is no major changes in the responsibilities of members.

WP6 is currently running about two months behind schedule, due to the change in the development plan of the software (see Section 1d). As a result, the new schedule of CTAM software development and deliverable is as follows:

- November 2006: Improved CTAM Phase I (with new interactive features)
- January 2007: Incorporation of classification routine
- March 2007: Incorporation of resource flow model
- October 2007: Incorporation of decision-making model

Decisions about WP activities are made mainly through e-mail discussion. Since the workshop in May, the whole team meeting has not taken place. Ratana Chuenpagdee (CDC) and Robert Kay (IGS) met and discuss WP work at CZAP06. WP6 works in close coordination with WP8 and together submitted a proposal for a session presentation (of four papers) at the Coastal Zone 07 Conference in July 2007, Portland, Oregon. The result of paper acceptance is pending. WP8 also contributed a case study of Namibia coastal area for WP6.1

f) Dissemination of knowledge

Table: Overview on WP6 outreach activities

Actual Date	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
May 2006	Conference presentation ¹	Scientists and students	Global	100	CDC
June 2006	Conference presentation ²	Scientists, students, managers, general public	Global		UNIABDN
August 2006	Conference presentations (oral and poster) ³	Scientists, coastal managers and practitioners	Global	300	CDC, IGS
September 2006	Technical report ⁴	Scientists, students, managers, general public	Global		CDC
September 2006	E-mail distribution (about CTAM) ⁵	Scientists, coastal managers and practitioners	Global		CDC, IGS, UNIABDN

Actual Date	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
September 2006	Conference presentation ⁶				
October 2006	WP6 website update ⁷	Scientists, students, managers, general public	Global		CDC

Description of activities:

1. Presentation of 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;
2. Paper presentation, "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;
3. 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;
4. Technical report on 'Visualization of Coastal Areas using Coastal Transects Analysis Model' (available on INCOFISH portal and CDC website);
5. E-mail invitation to publicized CTAM was sent widely to coastal practitioners and scientists (including INCOFISH members) and also posted in e-newsletter (e.g., ICOAST newsletter);
6. Paper presentation, "The importance of including social concerns when designating and implementing marine protected areas" (Pita, C., Pierce, G. & Theodossiou, I.) at the 41st European Marine Biology Symposium. Cork, Ireland, 4-8 September 2006;
7. WP6 website has been updated with the summary of the WP6 & 8 workshop, coastal database (updated with information on institutions), CTAM poster and PowerPoint presentations at CZAP06.

Planned publications

1. Visualizing the coasts with Coastal Transects Analysis Model (envisaged journal: Ocean and Coastal Management)
2. Interactions and flows in coastal areas (envisaged journal: Ecosystems)
3. Transect classification of coastal areas
4. Comparative analysis of interactions and flows in the coastal areas: case studies of Mexico, Scotland and Thailand
5. Exploration of coastal management scenarios using CTAM

g) Synergies with other Projects or Initiatives

E-mail discussion and updates with Maarten Bavinck of the INCO partner project ECOST

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

At the end of the last reporting period (April, 2006), WP 7 was completing deliverable 7.2, compiling a database of necessary maturity information for use by the online wizard. Starting date for the work of this reporting period was 1st May, 2006.

b) Progress towards objectives

Approximately 200 new size at first maturity estimations were retrieved from the peer reviewed and grey literature for entry into FishBase and to be used by WP 7's fish ruler wizard. (D 7.2)

Contractors involved: IMARPE, CDF, CRODT, CABAL, MEI, IFM-GEOMAR, MCM-DEAT

Online fish ruler wizard (fish size buying guide), has been conceptualized, designed, and final implementation is underway. The wizard will be complete by the end of November, 2006. (D.7.3)

Contractors involved: IFM-GEOMAR, FIN (WP 1)

Local fish rulers are in production in Peru and Senegal, with Galapagos and Estonia soon to follow.

Contractors involved: IMARPE, CRODT, CDF, MEI, IFM-GEOMAR (Towards D.7.4)

First version of the Bycatch indicator tool is complete, allowing users to see the percentage of bycatch generated by certain species and gear types. (part of D.7.3)

Contractors involved: IFM-GEOMAR

Three papers have been submitted for peer-review publication, 1 has already been accepted, and several more are in progress. (Towards D.7.5)

Contractors involved: CDF, IMARPE, IFM-GEOMAR, CRODT, MCM-DEAT

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

See item b)

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

No deviations from work program.

e) Workpackage Co-ordination

WP members have contributed as indicated above under item a). The only change in WP membership is the addition of Tracey Fairweather from MCM-DEAT, South Africa who will handle MCM-DEAT's WP 7 responsibilities from now on.

WP 7 is on target time-wise with all deliverables.

WP 7 has been coordinated mostly via email communications during this reporting period. The 2nd WP 7 workshop will be held 4.-7. December, 2006 in Lima, Peru.

f) Dissemination of knowledge

Table: Overview on WP7 outreach activities

Actual Date	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
June, 2006	Internet Wizard for Maturity indicators (INCOFISH Portal)	General Public	International	?	IfM-GEOMAR and FIN
July, 2006	IIFET Conference: Paper: Can the knowledge society turn around 500 years of overfishing	Economists, Policy-Makers, Scientists	International	~40 at talk, 300 at conference	IfM-GEOMAR
May, 2006	Fisch-O-Meter website www.fisch-o-meter.de	General Public	Germany	?	IfM-GEOMAR
May, 2006	Press conference for launch of Fisch-o-Meter	Journalists	Germany	10	IfM-GEOMAR
September, 2006	Meeting with Schleswig-Holstein Angling Club	Angling representatives	Germany	2	IfM-GEOMAR
September, 2006	Conference: Ecosystem Based Fisheries Management Poster and presentation: Common Sense Approach to Ecosystem Based Management	Scientists and Policy Makers	European and North American	~50	IfM-GEOMAR

Publications:

Froese, R., 2006. Cube law, condition factor and weight-length relationships: history, meta-analysis and recommendations. *Journal of Applied Ichthyology* 22:241-253.

Paper on size structure changes of Spiny Lobster population in the Galapagos from the 1970 until present. Accepted for publication in *Crustacea*.

Size matters: A common sense approach to ecosystem-based fisheries management. Submitted to *Fish and Fisheries*.

Paper on the reproductive biology of *I. fuscus* (Sea Cucumber). Submitted.

Global cost of overfishing, hopefully in a "high-impact" journal. Involving most WP 7 partners and WP8. In prep.

g) Synergies with other projects or initiatives

Continued our collaboration with IUCN on the random sample approach towards assessing the status of threat of all major taxonomic groups. IUCN has identified 1500 randomly-selected fish species and the FishBase team will now beef up respective information and assist IUCN in doing status-of-threat assessments for these species.

Members of other INCO Partner Projects have contributed data to the "Global Cost of Overfishing" paper.

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

Overarching objective: To overcome overfishing by providing economic and social data and analysis 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.

WP8 began working May 1, 2006.

b) Progress towards objectives

Tasks worked on and **major achievements made** with reference to planned objectives; identify contractors involved.

- Significant progress made with respect to modelling the Benguela and Gulf of Thailand ecosystem models (Objective (2));
- Gathering cost of fishing and vessel data for the Gulf of Thailand and the Benguela LME EwE models, (Objective (2));
- Developed a rapid assessment framework for sustainable coastal tourism (case studies: Gulf of Thailand and Namibia), (Objective (2));
- Continued work on non-market valuation (Objective (2));
- Continued work on habitat values (Objective (2));
- Continued work on intergenerational discounting (Objective (2));
- Completed a substantial report on fisheries subsidies. A global compendium of national fisheries subsidies will be made available for upload on the Incofish website (Objective 3);
- Primary literature Publications (Objective 5):
 - Sumaila, U.R. and C.W. Armstrong (2006). Distributional and efficiency effects of marine protected areas: A study of the Northeast Atlantic cod fishery. *Land Economics* 82 (3): 321-332;
 - Berman, M. and U.R. Sumaila (2006). Discounting, amenity values and marine ecosystem restoration. *Marine Resource Economics*. 21 (2): 211-219.

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

- Modelling the Benguela and Gulf of Thailand ecosystems: Led by Univ. of Namibia;
- Gathering cost of fishing and vessel data for the Gulf of Thailand: Led by CDC, Thailand;
- Gathering cost of fishing and vessel data for the Benguela LME EwE models: Led by Univ. of Namibia;
- Developed a rapid assessment framework for sustainable coastal tourism (case studies: Gulf of Thailand and Namibia): Led by CDC, Thailand and Univ. of Western Cape, South Africa;
- Non-market valuation: Led by Premix-Fame, Philippines;
- Intergenerational discounting: Led by Univ. of Namibia;
- Habitat values: Led by Univ. of Tromsø;
- Fisheries subsidies: Led by Univ. of Namibia;

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

None

e) Workpackage Co-ordination

All contractors made the expected contribution. Work is progressing as planned! Lots of email, phone and personal contact by many members of the WP during the reporting period.

f) Dissemination of knowledge

Table: Overview on WP8 outreach activities

Actual Date	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
	Press release(press/radio/TV)	General public	Global, Canada, USA	General public (News papers, Radio)	UNAM
	Conference	Research	South Africa, Namibia, Thailand, USA, France, Ghana, Philippines, etc	Huge	All partners
	Exhibition	Industry (sector x)			
	Publications	Journals and book chapters	Global	Huge	UNAM, CDC

Press:

Radio interviews with CBC, Canada.

Conferences:

Sumaila made a presentation on fisheries subsidies at the World Bank, Washington D.C. on October 30th, 2006 (Presentation to be uploaded on the portal;

Claire Armstrong participated at the ISRS European Meeting in Bremen 19-25, September 2006. Presented: The formation of policy for protection of cold-water corals off the coast of Norway;

Sumaila made a presentation on fuel fisheries subsidies at the 136th American Fisheries Society Annual Meeting in the legendary Olympic Village of Lake Placid, NY, 10-14 September 2006;

Sumaila gave a talk in a panel session on the potential benefits of restoring depleted fish stocks at the California and the World Oceans Conference in Long Beach, California, September, 17-20, 2006.

Claire Armstrong presented "Managing a natural reserve with density- independent species flow - a dynamic bioeconomic model" at the IIFET conference in Portsmouth; 11-14th July.

Rashid Sumaila presented 1) "Global ex-vessel fish price database" and 2) "Tacit cooperative management of the resources of the Benguela large marine ecosystem" at the IIFET conference in Portsmouth; 11-14th July.

Ratana Chuenpagdee and Rashid Sumaila participated in a meeting on fisheries governance in Amsterdam from July 17-19.

Publications:

Sumaila, U.R. and C.W. Armstrong (2006). Distributional and efficiency effects of marine protected areas: A study of the Northeast Atlantic cod fishery. *Land Economics* 82 (3): 321-332.

Berman, M. and U.R. Sumaila (2006). Discounting, amenity values and marine ecosystem restoration. *Marine Resource Economics*. 21 (2): 211-219.

Planned publications:

- Joint publication with WP7 on the global cost of overfishing
- Values from marine ecosystems;
- Habitat-fishery interactions and values;
- Discounting & future generation values;
- Ecosystem models that explore the consequences of ineffective management;
- Socio-economic indicators (subsidies, in particular) of ineffective fisheries management ;
- Policy paper: On how to manage fisheries for the benefit of both current and future generations.

g) Synergies with other projects or initiatives

Collaboration with INCO Partner projects ECOST and PASARELA.

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

Provision of 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)

Using the definitions and criteria for best sustainable tourism practices in the case study reserves of each WP member (as developed in the 1st workshop), participants began to adapt general biophysical, social and economic indicators to the needs of their specific locality, working closely with Reserve managers and with marine tourism operators to gauge their effectiveness in preparation for the 2nd workshop planned in December 2007. Work for this period started on 1st May, 2006.

b) Progress towards objectives

Summarised below with contractors highlighted

1. Draft manuscript prepared among WP members with fundamental definitions, concepts and development of adaptive management mechanisms for marine eco-tourism (criteria) (CDF, Fund.Malpelo, ECOLAP).
2. Prototype monitoring protocols from 1st workshop put into practice within each MPA with tour operators, tourist and local Reserve managers (CDF, Fund.Malpelo, ECOLAP). Local data bases compiled.
3. Appropriate code of conduct for the various types of marine tourism in development with reserve managers for discussion in the 2nd workshop.
4. Advances within the project presented to analagous systems within the Eastern Tropical Pacific (Costa Rica / Panama).

c) Work performed by each contractor in WP9 during the reporting period.

CDF, USFQ/ECOLAP, Fundación Malpelo

- Analysis of baseline information for indicators completed with an accompanying evaluation to determine the feasibility of long term implementation in the Galapagos Marine Reserve (GMR). Ten criteria and 16 indicators were selected as applicable to the RMG and a total of 7 new marine tourism sites in the GMR were evaluated (SCUBA diving, snorkeling, panga-ride and hikes to watch marine animals) using the monitoring protocol under development. Fundación Malpelo with Parques Nacionales Naturales de Colombia continued the sub-selection, and evaluation of the criteria and indicators proposed while providing information to evaluate the effectiveness of indicators to other WP members, gaining new access to international tourism boat operations visiting Malpelo, while USFQ/Ecolap completed their preliminary analysis of monitoring results from the recent Machalilla National Park high tourism season complementing a historical revision (2002-2005) of over 22000 records. 8 criteria and 22 indicators were selected as applicable to the MNP at the first year.
- Determination of tourism objective/ important fish species for each WP member Reserve.
- Development of common marine tourism management strategies with Reserve managers.

- Marine community monitoring (counterpart) of 65 near coastal sites (17 active marine tourism sites) for major subtidal species groups at 2 depth strata comparing artesanal fisheries, tourism no-take, and protected no-take areas.
- Preparation of materials for 2nd workshop: Regional Code of Conduct document (second planned publication) for each Reserve, a standardised format for monitoring protocols, revision of indicator matrices for each Reserve.

CDF

GIS representations under development for marine tourism monitoring.

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

Work program remains as originally planned. Deliverable D9.3 depends in part upon the dynamics of the Park Services involved, although so far we have had no notable delays.

e) Workpackage Co-ordination

CDF marine tourism investigator P. Cubero is well integrated within the project and leading developments locally in Galapagos with WP coordinators G. Reck (concept development), S. Banks (focus upon ecological effects and evaluation mechanisms) and M. Altamirano (focus upon governance, participatory processes and facilitation with Reserve managers and stakeholders) with a scholarship planned for a Ecuadorian student in 2007. ECOLAP and Fundacion Malpelo report no significant change in member roles, although Fundacion Malpelo will look to contract an individual to work within the Gorgona Reserve, Columbia.

Timetable follows original plan with minor modifications to accommodate workshop logistics. Workshop 2 is planned now in Galapagos for December 2006 as opposed to November 2006, and milestones (referenced M9.5-9.7 in section I) have been put back 2 months for a more realistic agenda.

During this period, WP9 arranged an internal meeting with WP members 26-27 August in Quito, Ecuador as an intermediate step between workshops to revise progress, discuss publication responsibilities, species of interest to the tourism industry, layout for the regional code of conduct MS, a uniform structure for the monitoring protocols and a plan for the 2nd workshop.

Regionally (ETP), WP 9 is reasonably advanced amongst its contemporaries, such as new GEF incentives and that presented by large conservation NGOs, and we are developing a strategy to integrate INCOFISH knowledge with these projects where possible and properly accredited.

f) Dissemination of knowledge

Table: Overview on WP9 outreach activities

Actual Date	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
November 2006	Conference	Research and Students	Ecuador	National	University of Azuay, U. of Loja, UISEK
August 2006	Conference	Research and government	Colombia, Costa Rica, Ecuador and Panama	Regional tourism experts (specific)	CI ETP- Conservation Marine Corridor.
June 2006	Workshop	Tourism Operators	Mini-workshop directed to operators in Santa Cruz, Galapagos, and Machalilla National Park	Local	Local sector groups

Planned publications

- Publication 1: Concept MS with global perspective and summaries/ comparisons between case study reserves (Draft MS ready).
- Publication 2: Regional Code of Conduct for Marine based Ecotourism (contributions ready between WP members to be combined during 2nd workshop Dec 2007).
- Themes in development: (1) Participatory processes for developing indicators with stakeholders (2) User perceptions and socio-economic considerations.
- Outreach materials for Reserve managers and local communities etc.

g) Synergies with other Projects or Initiatives

- Together with Fundación Equilibrio Azul and Machalilla National Park, ECOLAP participated, in the name of the Incofish Project, in the Coastal and Marine Cleaning International Day through underwater cleaning and identification of sensitive sites to human intervention and organized the participation of 15 local students as part of an environmental education program for the area.
- US-AID Project “Zonification of the Galapagos Marine Reserve” evaluating the differences in marine communities between take, no-take tourism areas and completely exclusive protected NTZs.
- CDF representation within the Galapagos Participatory Management Committee - Development of sustainable businesses in a multi-use marine reserve.
- WP 9 INCOFISH process has helped strengthen the Galapagos National Park Service Tourism Unit and Machalilla National Park involvement in tourism management forums at the level of the ETP.
- Various linked meetings with all WP members with the marine tourism component of the “Seascape Project” UNESCO, CI, Malpelo Foundation, Colombia National Parks Authority.
- Other synergies where Incofish project advances have been presented include discussions with The Nature Conservancy, DED (Deutscher Entwicklungs), and Jatunsacha NGO.

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

Overarching objective:

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

Work continued in May 2006.

b) Progress towards objectives

Objective	Tasks and major achievements	Contractor
Overview on national legal commitments to sustainable marine fisheries	Completed D 10.1	UNI HB, Fishbase
Analysis of legal structures relating to increasing pressure on resources and options for managing of resources	Successfully held a workshop on <ul style="list-style-type: none"> • co-ordination of country reports • advancing a synthesis on fisheries management systems for coastal zones: forms and conditions of success 	UNI HB (organisation) APPRENDER UNAM2 KESCOM (participants)
Analysis of legal structures relating to increasing pressure on resources and options for managing of resources	Completed D 10.4.1 (Indonesia country report: focus on coastal zone) and D 10.5.1 (EU report: focus on coastal fishery).	UNI HB
Analysis of legal structures relating to increasing pressure on resources and options for managing of resources	Advanced D 10.2a.1 (Brazil country report: focus on coastal zone).	APPRENDER, UNI HB
Analysis of legal structures relating to	Advanced D 10.2b (Nicaragua country report).	CABAL, S.A.,

increasing pressure on resources and options for managing of resources		UNI HB
Analysis of legal structures relating to increasing pressure on resources and options for managing of resources	Advanced D 10.3a.1 (Namibia country report: legal aspects).	UNAM2, UNI HB
Analysis of legal structures relating to increasing pressure on resources and options for managing of resources	Advanced D 10.3b (Kenya country report).	UNI HB
Analysis of legal structures relating to increasing pressure on resources and options for managing of resources	Adapted the topic of D 10.6 to D 10.6 a) Summary comparison of national legal instruments for the promotion and management of marine fisheries, and D 10.6 b) Allocation and management of offshore fisheries resources: an in-depth legal analysis of instruments in comparative perspective	UNI HB

c) Work performed by each contractor in WP10 during the reporting period

Table WP10.2: Work performed by each contractor in WP10

Contractor	Work performed
UNI HB	<ul style="list-style-type: none"> Organised a WP 10 workshop on 2-3 June 2006. Participated in the 2nd Steering Committee Meeting and WP 1 Workshop in Los Banos, Philippines, 15-19 May 2006. Completed the database (D 10.1). Coordination and supervision of deliverables. Scientific research on, and advancing of deliverables. Alignment of the D 10.6 topic. Communication with other WPs, partner projects and external institutions. Addressed miscellaneous administrative tasks.
APPRENDER	<ul style="list-style-type: none"> Participated in the WP 10 workshop on 2-3 June 2006. Advanced D 10.2a.1 (Brazil country report: focus on coastal zone).
UNAM2	<ul style="list-style-type: none"> Participated in the WP 10 workshop on 2-3 June 2006. Advanced D 10.3a.1 (Namibia country report: legal aspects).
KESCOM	<ul style="list-style-type: none"> Participated in the WP 10 workshop on 2-3 June 2006. Advanced D 10.3b (Kenya country report).
CABAL S.A	<ul style="list-style-type: none"> Advanced D 10.2b (Nicaragua country report).

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

WP 10 (UNI HB) felt that information would be wasted if the country reports were simply juxtaposed and not used for a cross-cutting study of legal instruments. Therefore, the topic of D 10.6 was changed from "North/South" relationships: access to resources and benefit sharing' to D10.6 a) 'Summary comparison of national legal instruments for the promotion and management of marine fisheries' and D10.6 b) 'Allocation and management of offshore fisheries resources: an in-depth legal analysis of instruments in comparative perspective'. An essential part of the previous topic, however, is included in the new outline through integration of questions of distant water fishing activities. We expect that the suggested new study will top off and, by its cross-cutting nature, enhance the work conducted by WP 10.

The amendment has been accepted by the INCOFISH Steering Committee as well as the EC Commission.

WP 10 is undertaking efforts to add a further country profile of Mexico to D10.1, following the selection of INCOFISH target ecosystems. WP 4 was contacted on cooperation to this end. It has not yet been clarified whether a respective cooperator in Mexico can be financed by WP 10.

e) Workpackage Co-ordination

WP members' contributions:

Workpackage co-ordination is conducted by UNI HB (Gerd Winter, Till Markus, Marion Markowski). For other contributions, please see 1c).

Changes to the WP membership:

Laode M. Syarif and Evanson Chege Kamau continued to work for WP 10 as sub-contractors. WP 10 cooperates with Nyawira Muthiga, WP 3, and Joe Ryan, WP 7. WP 4 was contacted on cooperation regarding the preparation of a further country profile (D 10.1) of Mexico.

- Held a WP 10 workshop with participation of external specialists.
- Participated in the 2nd Steering Committee Meeting and WP 1 Workshop in Los Banos, Philippines, 15-19 May 2006.
- Co-ordination and supervision of deliverables.
- Communication with other workpackages (WP 1, 4, 11), partner projects (ECOST), and external institutions.

f) Dissemination of knowledge

Table: Overview on WP10 outreach activities

Actual Date	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
Continuing	WP 10 web-sites <ul style="list-style-type: none"> • INCOFISH portal, http://www.incofish.org/Workpackages/WP10/WP10.php • UNI HB portal, http://www-user.uni-bremen.de/%7Efeu/ 	(Environmental) jurists, academics, fisheries managers	Coastal states	?	UNI HB, Fishbase
Month 14	WP 10 workshop	WP members, WP 11, ECOST members, external specialist	Brazil, Namibia, Kenya, Indonesia, EU	17	UNI HB (responsible), APPRENDER, UNAM2, KESCOM

For a full workshop report see

<http://www.incofish.org/Workpackages/WP10/Documents/Workshop%20Report%20WP10.doc>.

Planned publications:

To be offered to ACP-EU Fisheries Research Series:

- Brazil fisheries country report
- Nicaragua fisheries country report
- Namibia fisheries country report
- Kenya fisheries country report
- Indonesia fisheries country report

Publishing organ still to be identified:

- Anthology of country reports
- Promotion and management of marine fisheries in the EU
- Allocation and management of offshore fisheries resources: an in-depth legal analysis of instruments in comparative perspective

g) Synergies with other projects or initiatives

- Pierre Failler (ECOST) participated in the WP 10 Workshop on 2-3 June 2006.
- Contacted IUCN on establishing access to ECOLEX and other databases via the INCOFISH portal.

Section 3 – Project Coordination and Management (WP 11)

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 workpackages come together to reach the overall goal of INCOFISH, i.e., sustainable use of coastal zones.

Work for this reporting period started on May 1, 2006.

b) Progress towards objectives

Re (1): In connection with the intermediate workshop (See Annex II below) of WP1 (Data, Tools and Outreach) the second Project Steering Committee meeting (Milestone M11.3) was held in May 2006 at the site of INCOFISH partner FIN in Los Banos, Philippines, to review and assess progress of INCOFISH. A meeting report was prepared and distributed to WP leaders.

A request for a rider to the contract was prepared and submitted to the Commission in June with respect to an exchange of two contractors in the Consortium.

Monthly short progress reports from all work packages are being assembled, and disseminated to all members and partners. This initiative was started in November 2005.

During the reporting period members of WP11 participated in workshops of WPs 1, 6, 8, 4 and 5. WP11 continued to supervise the development of the INCOFISH portal services and is responsible for style and update of the “About us” page on the portal.

Re (2) The 1st periodic report was prepared and forwarded to the Commission in June 2006.

Also, the deliverables due in the reporting period D1.5, D3.1, D4.1, D6.1, D6.2, D7.2, and D8.1 were carefully evaluated and commented upon. Guidance with regard to deliverables that are due next was given. Members were reminded to plan their publications (50 altogether) early on. WP11 took leadership of one potential high-impact publication and suggested a topic for one other.

Re (3): Since the project as a whole missed to meet the 70% spending threshold by 5 % by the end of the first reporting period due to the late arrival of funds from the Commission, a complementary management report was compiled and forwarded to the Commission beginning of September 2006.

Re (4): Synergy between workpackages is constantly encouraged, especially though cross-WP participation in workshops; this is working very well and all WPs are well connected with at least one or two other WPs. Especially, a list of ecosystems where all WPs would apply their tools and concepts was proposed for discussion and agreement at the second Project Steering Committee.

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

No deviations from the workprogram are to be reported for this period.

d) Dissemination of knowledge

- An English and German version of an INCOFISH flyer was prepared and made available for download on the portal.

- The manager presented INCOFISH at the IIFET Conference in Portsmouth, UK (10th to 14th July).
- On 17 July 2006 the coordinator gave an interview to German TV (ZDF) re tuna fattening in the Mediterranean and the status of the Atlantic tuna stock.
- In the context of the symposium "Future Ocean" in Kiel, Germany, the coordinator gave two interviews on overfishing to German radio (NDR Info, Logo).
- On 16 October the coordinator gave a short statement on German national TV (ZDF Heute Journal) with a contribution about the decline of blue fin tuna in the Mediterranean.
- On 18 October, 16:35 the coordinator was on radio with statements on global and European overfishing, SWR-Kontra.
- The manager presented INCOFISH and its internet portal at the 3rd national workshop for rehabilitation of coastal zones, at IfM-GEOMAR, Germany.
- The manager co-authored a paper together with colleagues from other INCO projects on "Recovering fisheries from crisis or collapse. How to shorten impact time of international research cooperation", to be published in IIFET 2006 Portsmouth conference proceedings.

e) Synergies with other projects or initiatives

- The coordinator visited the "Sea Around Us" project at the Fisheries Centre, University of British Columbia, Vancouver, Canada, to discuss improved coordination of activities between INCOFISH, ECOST and Sea Around Us.
- Contact with the Marine Stewardship Council has been established, thanks to Rashid Sumaila, WP8 leader. Collaboration has started.
During the IIFET conference the manager discussed further co-operation projects with INCO Partner projects CENSOR and ECOST, and with Cornelia Nauen, our former scientific officer.
In Kiel the INCOFISH team had a meeting with representatives of the provincial angling association (LSFV-SH). This organization represents 42 000 members.
- On 30 October the coordinator chaired the founding meeting of SpeciesBase, an initiative to create a FishBase-like information system for all species on earth. This went very well. A SpeciesBase web page will be available soon. This is relevant for the INCOFISH Species Information service (WP 1).

Section 4 - Other Issues

Budget modifications

A recent inquiry within the Consortium showed that up to 60 000 Euros are needed for audits from external auditors in form of subcontracts. In the original budget funds were set aside for audits but not declared as subcontracts. This might require a permission from the Commission. Funds, originally set aside as overheads will become available and will be shifted to personnel funds at the coordinating institution to further strengthen INCOFISH objectives. Apart of this a small amount of 2,500 Euros has been shifted from the coordinating institution IfM-GEOMAR to partner CICIMAR to cover part of the organization of the mid-term workshop to be held at the site of CICIMAR in La Paz, Mexico from 12 to 16 March, 2007.

The revised INCOFISH budget is attached to this report as Annex III.

Extension of the 45 days allowance for final report preparation

Due to the size of the consortium and the distribution of contractors all over the world we anticipate that the 45 days allowance for the preparation of the third periodic report plus the final report after month 36 when the project has terminated will not be sufficient. Thus we are planning to ask the Commission for an extension of the allowance to 90 days based on Article 7.3 of the INCOFISH contract. This allowance should also include the possibility to incur personnel costs used for the preparation of the final report.

Communications

Responsibility for flow of communications lies 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 is being 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. Also, there is a monthly e-mail progress report with short contributions from all WPs.

INCOFISH participants communicate mainly by e-mail and through the INCOFISH website (www.incofish.org).

The Project Steering Committee, meeting once per year, met for the second time in May, 2006, (see previous Section at WP11). If necessary, decisions can be taken by e-mail between meetings.

There are other specific WP meetings that partners and members are attending. The complete list of past and future meetings is attached as Annex II.

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). Members of INCOFISH have volunteered to archive data and continue to make tools available beyond the duration of this project. Consortium partners accept and authorise 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 is being distributed to participants by the management team via e-mail.

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

Public participation 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 is also being 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 is an essential part of work packages 3, 5, 6, 7, 8 and 9. (For examples of success see Section 1 – Major achievements).

Annex I
INCOFISH Deliverables

In green: Deliverables available on INCOFISH portal (www.incofish.org)

WP no.	Deliverable no.	Deliverable name	Date due (month after project start)	Actual/Forecast delivery date	Indicator of success	Lead contractor
1	D1.1	Free online access to all data relevant to this project	19	19	Web portal available and working	FIN
	D1.2	Data Archive for all relevant data of D1.1 not archived elsewhere	19	19	Database with archiving function for ICZM data available online	FIN
	D1.3	Online ICZM tools including coastal transects, and special step-by-step tools for common ICZM tasks	25	25	Web software available on portal	FIN
	D1.4	Electronic maps for all relevant marine organisms	25	25	Electronic maps available on portal	FIN
	D1.5	Internet Portal including Forum, Data Upload, and Links	13	13	Web portal available and working	FIN
	D1.6	Maintenance of portal, uploading of WP data & tools, report on achievements (report)	36	36	Improved version of web portal available; more than 10.000 visitors to ICZM tools & data per month; more than 100 citations in Google Scholar (http://scholar.google.com)	FIN
	D1.7	At least five scientific publications related to this WP to be published or submitted by WP members before the end of the project	36	36		FIN
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.	UHULL
	D2.2	Derived from D2.1, baseline data for the respective stocks and LMEs, for utilisation in WP 4, 5, 7 and dissemination through WP 1	25	25	Analyses conducted and baseline data available to indicated WPs.	UHULL

	D2.3	Population of databases, interactions with WPs 1, 3, 4, 7, report on baseline data and analysis	34	34	Report available on portal	UHULL
	D2.4	At least five scientific publications related to this WP to be published or submitted by WP members before the end of the project	34	34	At least five papers published or submitted	UHULL
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 online with species distributions	NRM
	D3.2	Before-After maps with predicted distribution before and after a certain point in time.	19	19	Tool for creation Before-After maps available with examples for more than 10 key species. Due online in month 19 for all species with significant numbers of occurrence points. The user can define the date for the Before-After cut-off.	NRM
	D3.3	Maps with predicted seasonal distribution	26	26	Maps online	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	31	31	Maps online	NRM
	D3.5	Further population of maps, interactions with WPs	34	34	Final report available and satisfactory	NRM
	D3.6	Scientific publications	34	34	At least five papers published or submitted	NRM
4	D4.1	Uploading 100 ecosystem models	13	13	Models available on portal – 140 models – database uploaded	CICIMAR
	D4.2	Uploading Incofish models	19	19	12 Models available on portal	CICIMAR
	D4.3	Spatial ecosystem models available for all selected LME's	25	25	Uploading models in the Incofish portal (w WP1) – 12 models –	CICIMAR
	D4.4	Further development of models, interactions with WPs, final report	34	34	Technical reports, scientific papers	CICIMAR
	D4.5	At least five scientific publications related to this WP to be published or submitted by WP members before the end of the project	34	34	Scientific papers published, in press and/or submitted	ALL WP members
5	D5.1	MPA review	16	19	Report produced	UNEW
	D5.2	Model based analysis of MPA size and placement	28	28*	Report produced *(assuming models from WP4 produced on time)	UNEW
	D5.3	Conceptual model for MPA planning	31	31	Report and guidance tool produced	UNEW
	D5.4	Report on WP5	34	34	Report produced	UNEW
	D5.5	5 publications	34	34	5 papers published or submitted	All WP members

6	D6.1	Report on 'Concepts and tools for ICZM,	13	13	Report reviewed and revised, available for download at INCOFISH portal and CDC	IGS (with UNIABDN & CDC)
	D6.2	Coastal Transects Software (Phase I)	16	17	- First launching at the third Coastal Zone Asia-Pacific (CZAP06) in Batam, Indonesia, on August 29th was well received. - CTAM Phase I has been uploaded on INCOFISH portal and about 65 records have been entered	CDC (with UNIABDN& IGS)
	D6.3	Decision-making framework (CTAM Phase II)	25		- CTAM Phase II is being developed to include more interactive features, coastal classification and map, prototypes for coastal interactions and flows (to be completed by May 31, 2007)	CDC (with UNIABDN& IGS)
		CTAM Phase II	25	25		
		Decision making routine	28	30		
	D6.4	CTAM Testing and interactions with other WPs, final report	34	34	Site visits to selected case studies	CDC (with UNIABDN& IGS)
	D6.5	Five scientific publications	34	34	Two manuscripts (on coastal transects analysis and coastal interactions and flows) almost ready for submission	CDC (with UNIABDN& IGS)
7	D7.1	Review of indicators and selection of suitable, simple indicators	7	7	Selection and justification of simple indicators published on INCOFISH web site	IFM-GEOMAR
	D7.2	Database (distributed) containing necessary biological parameters for application of indicators	13	13	Database with data needed for indicators available online, for more than 500 species. More than 200 new entries were made to FishBase maturity tables Preliminary Bycatch database was completed	IFM-GEOMAR
	D7.3	Internet-based wizard to help in application of indicators	19	19	Indicator wizards available on portal. Fish Ruler Wizard projected Nov 2006. Draft bycatch wizard implemented Oct. 2006	IFM-GEOMAR in collaboration with FIN
	D7.4	Final report (after testing of indicators with real-world fisheries and stakeholders)	34	34	Final report available and satisfactory.	IFM-GEOMAR
	D7.5	At least 5 scientific publications	34	34	Publications published or in press. Currently there are 4 publications in progress	All contractors

WP no.	Del. no.	Deliverable name	Date due (month after project start)	Actual/ Forecast delivery date	Indicator of success	Lead contractor
8	D8.1	Economic & Social Database	13	13	Material on the web plus publications Outreach (conferences, public lectures, popular articles)	CDC, Thailand
	D8.2	Ecosystem values	19	19	Material on the web plus publications Outreach (conferences, public lectures, popular articles)	UNAM
	D8.3	Analysis of ineffective management: Indicators	25	25	Material on the web plus publications Outreach (conferences, public lectures, popular articles)	UiT
	D8.4	Policy options	19	19	publications Outreach (conferences, public lectures, popular articles)	UNAM
	D8.5	Final report	34	34	Approval of submitted report	UNAM
	D8.6	At least 5 scientific publications	34	34	5 papers in primary literature	UNAM
9	D9.1	REPORT: DEFINITIONS AND CRITERIA: to determine the most appropriate management models and “scope” of ecotourism (Carrying capacity vs. LAC/VIM) for ecotourism in the 4 MPAs under study with global review of ecotourism activities outside of Equ. Pacific	8	9	Model/s identified and concepts and criteria defined.	CDF
	D9.2	REPORT & TOOL: INDICATORS, STANDARDS AND THRESHOLD VALUES : used to monitor impact of ecotourism on selected MPA’s	9 (A) 10 (B) 18 (C)	9 (A) 10 (B) 22 (C)	A: Prototype indicators established B: Monitoring protocols applied in case study systems C: Data formatted for integration into INCOFISH web-portal.	CDF

WP no.	Del. no.	Deliverable name	Date due (month after project start)	Actual/ Forecast delivery date	Indicator of success	Lead contractor
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9 cont.	D9.3	REPORT & TOOL: A RANGE OF ADEQUATE MANAGEMENT RESPONSES : application and evaluation of ecotourism concepts, standards and indicators between WP's and MPA stakeholders and managers (focus)	18-33	18-33	Monitoring system/ Indicator evaluation and feedback process.	CDF
	D9.4	SCIENTIFIC PUBLICATIONS AND DISSEMINATION TO STAKEHOLDER GROUPS Dissemination of results to stakeholders, park administrators and academic community. At least 5 publications submitted between WP members	10-33	10-33	Presentation and exploration of work package goals with local MPA administrators and stakeholders. Publication and diffusion to stakeholders, administrators and academic community (transversal activity).	CDF
10	D10.1	Report on international and national legal commitments to sustainable marine fisheries (with database)	10	8 + 18	Report with database available on INCOFISH portal	UNI HB
	D10.2a.1	Report on the promotion and management of marine fisheries in Brazil: focus on participatory approach to MPA management (coastal zone)	13	20	Publication of country report	APPRENDER
	D10.2a.2	Report on the promotion and management of marine fisheries in Brazil: focus on participatory approach to MPA management (EEZ)	25	25	Publication of country report	APPRENDER
	D10.2b	Report on the promotion and management of marine fisheries in Nicaragua	13	20	Publication of country report	CABAL S.A.
	D10.3a.1	Report on the promotion and management of marine fisheries in Namibia: legal aspects	13	20	Publication of country report	UNAM 2
	D10.3a.2	Report on the promotion and management of marine fisheries in Namibia: empirical study	25	25	Publication of country report	UNAM 2
	D10.3b	Report on the promotion and management of marine fisheries in Kenya	-	19	Publication of country report	KESCOM, UNI HB
	D10.4.1	Report on the promotion and management of marine fisheries in Indonesia: focus on coastal zone	13	18	Publication of country report	UNI HB
	D10.4.2	Report on the promotion and management of marine fisheries in Indonesia: focus on coastal zone	25	25	Publication of country report	UNI HB

	D10.5.1	Report on the promotion and management of marine fisheries in the EU in comparison to the other selected countries: focus on coastal fishery	19	19	Publication of compiled EU report	UNI HB
	D10.5.2	Report on the promotion and management of marine fisheries in the EU in comparison to the other selected countries: comparison of management tools in the coastal zone	19	25	Publication as introduction to envisaged anthology of country reports	UNI HB
	D10.5.3	Report on the promotion and management of marine fisheries in the EU in comparison to the other selected countries: focus on EEZ	26	26	Publication of compiled EU report	UNI HB
	D10.5.4	Report on the promotion and management of marine fisheries in the EU in comparison to the other selected countries: focus on reorientation of structural policy	31	31	Publication of compiled EU report	UNI HB
	D10.6a	Summary comparison of national legal instruments for the promotion and management of marine fisheries	-	25	Publication as introduction to envisaged anthology of country reports	UNI HB
	D10.6b	Allocation and management of offshore fisheries resources: an in-depth legal analysis of instruments in comparative perspective	31	34	Publication of report	UNI HB
	D10.7	Overall synthesis; recommendations	34	34	Report available at INCOFISH web portal	UNI HB
	D10.8	Scientific Publications	34	34	Six scientific papers published or submitted	All contractors
11	D11.1	First Annual Progress Report	13	14	Report delivered to European Commission.	IfM-GEOMAR
	D11.2	Second Annual Progress Report	25	26	Report delivered to European Commission.	IfM-GEOMAR
	D11.3	Third and Final Report	36	38	Reports delivered to European Commission.	IfM-GEOMAR

Annex II

INCOFISH Milestones

Workshops and Meetings per work package with envisaged date, participants, and results

WP no.	Milestone no.	Milestone name	Date due (month after project start)	Actual/Forecast delivery date	Comment	Lead contractor
1	M1.1	First workshop	6	6	Agreed on relevant data, tools, and outreach strategy (WP members, all WP leaders) Conducted in conjunction with start-up workshop (see M11.1)	FIN
	M1.1.1	Intermediate workshop	-	13	This additional milestone was considered beneficial for overall performance and improvement of the INCOFISH portal before launching. Workshop was held in Los Banos, Philippines in May 2006.	FIN
	M1.2	Second workshop	26	26	To review data, tools, portal, outreach (WP members, all WP leaders)	FIN
2	M2.1	First workshop	5	6	Conducted in conjunction with start-up workshop (see M11.1).	UHULL
	M2.1.1	Intermediate workshop	15	11	Additional milestone; workshop held in Tallin, Estonia, in March 2006.	UHULL
	M2.2	Second workshop	27	27	Setting baselines	CDF
3	M3.1	First workshop	5	6	Conducted in conjunction with start-up workshop (see M11.1)	NRM
	M3.1.1	Intermediate workshop	-	12	Additional milestone. 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	27	Review maps and tools	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 (month after project start)	Actual/Forecast delivery date	Comment	Lead contractor
4 cont.	M4.1.2	Overseas consultancy	-	12+13+14	Additional milestone. Overseas consultancy for construction of East China Sea ecosystem model consisting of three meetings. 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	Workshop on advanced modelling with EwE (Ecopath with Ecosim suite of programs)	CICIMAR, MCM-DEAT & CEFAS
	M4.3	Third workshop	19	20	An Ecospace workshop will be organized in March 2007 which will serve as base to construct spatial ecosystem models (deliverable D4.3) until May 2007.	CEFAS, CICIMAR
	M4.4	Fourth workshop	30	30	To present Ecosystem models, and to prepare meta-analysis.	CICIMAR
5	M5.1	First workshop	5	6	Conducted in conjunction with start-up workshop (see M11.1)	UNEW
	M5.1.1	Intermediate workshop	-	10	This additional milestone has been organized in cooperation with WP4 in London, UK, in February 2006. Topic: MPA Case Studies	UNEW / CICIMAR
	M5.2	Second workshop	19	23	Analysis of spatial models	UNEW
	M5.3	Third workshop	25	29	Develop and finalise framework for D5.3. The workshop is being timed to coincide with an MPA conference of which the INCOFISH project is a partner organiser.	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, UNIABDN
	M6.1.2	Intermediate workshop	-	13	Additional milestone. Workshop organized in cooperation with WP8 in Bangkok, Thailand, in May 2006.	CDC / UNAM
	M6.2	Second workshop	25	23	To be conducted in conjunction with mid-term workshop	CDC
7	M7.1	First Workshop	6	6	Conducted in conjunction with start-up workshop (see M11.1).	IfM-GEOMAR
	M7.2	Second Workshop	20	20	Workshop: Timetable for Deliverables and Publications and indicator testing	IfM-GEOMAR

WP no.	Milestone no.	Milestone name	Date due (month after project start)	Actual/Forecast delivery date	Comment	Lead contractor
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. In cooperation with WP6.	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 1st deliverable with all WP9 partners.	CDF
	M9.2	Second workshop	19	20	To compare results, adapt monitoring protocols and define changes of strategy.	CDF
	M9.3	Third workshop	31	31	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). Coordination of deliverables	UNI BREMEN
	M10.1.1	Intermediate workshop	-	14	Additional milestone, held in June 2006 in Bremen, Germany. Workshop Comparing National Legal Approaches to Coastal and Off-shore Fisheries	UNI BREMEN
	M10.2	Second workshop	29	29	To review and finalize work	UNI BREMEN
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 st 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
	M11.4a	Third Steering Committee meeting	24	23	Will be held in conjunction with Mid term workshop.	IfM-GEOMAR
	M11.4b	Mid term workshop for all INCOFISH members	-	23	Excess funds set aside for audits will be used to organize a mid-term workshop where projects results will be presented and the work tuned for the remaining project time.	IfM-GEOMAR
	M11.5	Final Steering Committee meeting	34	34	To wrap up results and prepare the final activity report.	IfM-GEOMAR

Revised INCOFISH Budget (Annex III for 2nd semi-annual report November 2006)

CO= Coordinator, CR = Contractor, in bold = WP leaders, contractors in grey: contract terminated, contractors in green: budget revised

Parti c.Rol e*	Parti c. no.	Participant short name	Work Package	Cost Mode l	Refund of total eligible costs(%)	Type of Personnel	Person Months (w/o subcon tracting)	Personn el (Euro)	Consum ables (Euro)	Worksh ops/Mee tings (Euro)	Travel & Subsiste nce (Euro)	Subcon tracts (Euro)	Audits	Direct Costs (Euro) Total	Indirect costs (Euro)	Total eligible costs (Euro)	Revised distribution of EC grant (Euro)
CO	1	IFM- GEOMAR	7,11	AC	100	1 Project manager (subcontract), project assistant (part-time), 1 webmaster, 1WP7 coordinator	87	321000	10000	190000	54000	355000	55000 (of which 50000 subcon tracts)	985000	115000	1100000	1100000
CR	2	APRENDER	10	AC	100	1 researcher (part-time)	16	33500	0	0	0	0	0	33500	6700	40200	40200
CR	3	IP	4	AC	100	1 researcher (part-time)	0	0	0	0	0	0	0	0	0	0	0
CR	4	CABAL S.A.	7	FC	50	1 researcher (part-time)	16	69000	0	0	0	0	0	34500	34500	69000	34500
CR	5	CDC	6,8	AC	100	1 WP6 coordinator (part-time), 1 assistant coordinator (part- time), 1 researcher	82	240000	0	34000	16000	0	0	290000	58000	348000	348000
CR	6	CDF	2,3,7,9	AC	100	1 WP9 coordinator (part-time), 1 researcher, 3 researchers (part- time)	104	185000	0	21000	6000	0	0	212000	42400	254400	254400
CR	7	CEFAS	2,3,4,5	FC	50	3 researchers (part-time)	34	288700	9000	0	31500	0	0	179868	149332	329200	164600
CR	8	CICIMAR	4,5	AC	100	1 WP4 coordinator, assistant coordinator (part time), 1 researcher (part-time)	70	100000	0	165600	20000	0	0	285600	57120	342720	342720
CR	10	SDU	2	AC	100	1 researcher (part-time)	3	11900	0	0	0	0	0	11900	3400	14300	14300
CR	11	CRIA	1	AC	100	1 researcher	34	60000	0	0	0	0	0	60000	12000	72000	72000
CR	12	CRODT	4,7	AC	100	1 researcher, 1 researcher (part-time)	40	52000	0	0	0	0	0	52000	10400	62400	62400
CR	13	DINARA	3	AC	100	2 researchers (part-time)	16	40000	0	0	0	0	0	40000	8000	48000	48000
CR	15	ECNU	4	AC	100	1 researcher in charge (part time), 2 researchers (part time), 2 PhD students (part time)	64	49500	0	0	0	0	0	49500	9900	59400	59400

CR	16	Uni Bremen	10	AC	100	1 researcher	32	140000	0	10000	4000	9000	0	163000	30880	193800	193800
CR	17	FIN	1	AC	100	1 WP1 researcher in charge, 1 web programmer, 1 data encoder, 1 data base programmer (last 3 with subcontract)	34	135000	0	40000	45000	182400	0	402400	44000	446400	446400
CR	19	IMARPE	2,7	AC	100	2 researchers (part-time)	28	28300	0	0	0	0	0	28300	5660	33960	33960
CR	21	IGS	6	FCF	50	1 researcher (part-time)	10	50000	0	0	0	0	0	50000	10000	60000	30000
CR	22	UNIPAD	4	AC	100	1 researcher (part-time)	12	24000	0	0	0	0	0	24000	4800	28800	28800
CR	23	MCM DEAT	4,7	AC	100	3 researchers (part-time)	23	42000	0	0	0	0	0	42000	8400	50400	50400
CR	24	MEI	2	AC	100	1 researcher (part-time), 1 technician (part-time)	20	36000	0	0	0	0	0	36000	7200	43200	43200
CR	25	UHULL	2	AC	100	1 researcher (part-time)	16	75500	0	34000	6000	0	0	115500	23100	138600	138600
CR	26	NIES	5	AC	100	2 researchers (part-time)	50	43500	0	0	0	0	0	43500	8700	52200	52200
CR	27	NRM	3	AC	100	1 researcher	32	129500	0	34000	30000	0	0	193500	38700	232200	232200
CR	30	PRIMEX-FAME	8	AC	100	1 researcher (part-time)	7	15000	0	0	0	0	0	15000	3000	18000	18000
CR	31	PSU	7	AC	100	1 researcher (part-time)	16	29000	0	0	0	0	0	29000	5800	34800	34800
CR	32	Fundacion Malpelo	9	AC	100	2 researchers (part-time)	46	80000	0	0	0	0	0	80000	16000	96000	96000
CR	33	UNAL	2	AC	100	2 Ph.D.students (part-time)	36	36000	0	0	0	0	0	36000	7200	43200	43200
CR	34	UNAM	8	FCF	50	1 WP8 coordinator (part-time), 2 researchers (part-time)	90	369000	0	50000	12000	0	0	431000	86200	517200	258600
CR	35	Uni Concepcion	4	AC	50	2 researchers (part-time)	16	19750	0	0	0	0	0	19750	3950	23700	23700
CR	36	UNEW	4,5	AC	100	1 researcher, 1 researcher (part-time)	36	143500	0	35500	34000	0	0	213000	42600	255600	255600
CR	37	UiT	8	AC	100	1 researcher (part-time)	10	64000	0	0	0	0	0	64000	12800	76800	76800
CR	38	UWC	8	AC	100	1 researcher (part-time)	5	12000	0	0	0	0	0	12000	2400	14400	14400
CR	39	UNIABDN	2,4,6,7	AC	100	1 researcher (part-time)	22	102000	6000	0	6000	0	0	114000	22800	136800	136800

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CR	41	USFQ	9	AC	100	1 researcher	32	35000	0	0	15000	4000	0	54000	10000	64000	64000
CR	43	KESCOM	3	AC	100	1 researcher (part-time)	16	26750	0	1000	1000	0	0	28750	5750	34500	34500
CR	44	IOUSP	4	AC	100	1 researcher (part-time)	10	18500	0	0	0	0	0	18500	3700	22200	22200
CR	45	RUC	2	AC	100	1 researcher (part-time)	9	25600	0	0	0	0	0	25600	5100	30700	30700
Total							1174	3130500	25000	615100	280500	550400	0	4472668	915492	5387080	4899380