



Contract Number 006539

Acronym: EMPAFISH

“European Marine Protected Areas as tools for Fisheries Management and Conservation”

Instrument:

Thematic Priority: 1.3. Modernisation and sustainability of fisheries, including aquaculture-based production systems

Interim Activity Report

Period covered: from 1 March 2005 to 28 February 2006

Date of preparation: March 2006

Start date of project: 1 March 2005

Duration: 36 months

Project coordinator name: Ángel Pérez-Ruzafa

Project coordinator organisation name: University of Murcia

1. Project objectives and major achievements during the reporting period.

The EMPAFISH project has three general objectives as follows:

I) To investigate the potential of different regimes of MPAs in Europe as measures to protect sensitive and endangered species, habitats and ecosystems from the effects of fishing.

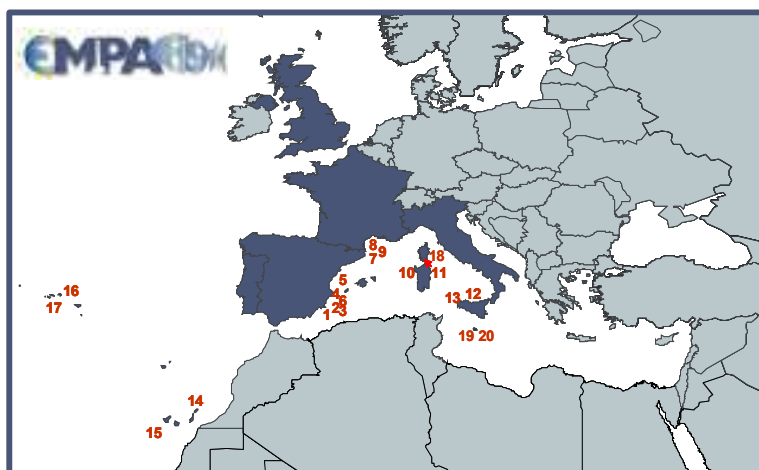
II) To develop quantitative methods to assess the effects of marine protected areas.

III) To provide EU with a set of integrated measures and policy proposals for the implementation of MPAs as fisheries and ecosystem management tools.

The works to be done throughout the project are based on existing data on ecological, fisheries, and socio-economic aspects of already established, well-studied MPAs selected as case studies (Fig.1).

It is to be underlined that most of the data to utilise within this project are issued from previous work performed by the participants in the present project. In addition, some original work is to be done in order to complete gaps in information needed to perform the data analysis in a comprehensive manner.

Figure 1. Location of case studies considered in the EMPAFISH project



- | | |
|---------------------------------------|---|
| 1: Cabo de Palos | 11: Bouches de Bonifacio |
| 2: Tabarca | 12: Ustica |
| 3: San Antonio | 13: Golfo di Castellamare / Trawl ban area |
| 4: Serra Gelada e islotes de Benidorm | 14: La Graciosa |
| 5: Columbretes Islands | 15: La Restinga |
| 6: Anti-trawling zones at SE Spain | 16: Monte da Guia / Faial |
| 7: Medes Islands | 17: Formigas islet / Dollabarat bank |
| 8: Banyuls-Cerbère | 18: Tuscany Archipelago |
| 9: Côte Bleue | 19: 25 NM Fisheries Conservation Zone-Malta |
| 10: Sinis Mal di Ventre | 20: Rđum Majjiesa / Ras ir-Raheb |

Major achievements during the reporting period

- During the first year of the project it has been selected the case studies with data available.
- Ecological, fisheries and socioeconomical data base framework has been already done.
- It has been created the EMPAFISH web page (www.um.es/empafish) from which a number of documents produced within the project is available at different accessibility levels (from confidential to accessible to the general public).
- It has been designed and implemented an interactive table system on line to complete the different ecological data sets.
- Fishery ecological data set has been completed.
- Ecological data set has started to be achieved.
- Questionnaires about socioeconomic actives have been designed and distributed by the most of the partners and they are obtaining many of them full filled.
- A leaflet has been produced
- Two booklets have been produced and at the moment they are being revised by the editorial committed.
- A literature review about economical analysis of MPA has been produced and at the moment it has being revised by the editorial committed.

2. Workpackage progress of the period

The following workpackages has been active during the reporting period:

WP1. Ecological effects of MPAs (Wp leader: Serge Planes, CNRS, France).

WP2. Fishery effects of MPAs (Wp leader: Ricardo Santos, IMAR, Portugal).

WP3. Socio-economic impacts of MPAs (Wp leader: Jean Boncoeur, UBO, France).

According to the technical appendix, the objectives of WP1 and WP2 are to be reached during the 19 first months, and the objectives of WP3 are to be achieved during the 25 first months of the projects.

All of the contractors involved in the WP1, 2, 3 have participated actively in the progress towards objectives.

WP1. Ecological effects of MPAs

Objetives:

- Identifying and quantifying ecological effect of MPA
- Production of a field database for subsequent global meta-analysis and modelling

Tasks:

- List and identify data required
- List and identify case studies to be used as models
- Develop a database model
- Compile field data
- Complete dataset with specific collection and field data
- Meta-analysis exploration

During the first year of the project it has been analysed the data available and it has been designed the database framework.

The following points have been considered in the structure of the Wp1 interactive table accessible on a internal web system:

- Name of MPA
- Study ID
- Before After
- Year (of study)
- Years from MPA creation (add a column reporting year of effective protection –case of Bonifacio or Ustica)
- Temporal replication:
 - Season
 - Time
 - Dummy (T)
 - DATE
- Spatial replication:
 - Location: the largest spatial unit (protected, unprotected, etc.)
 - Sites (within Location)
 - Dummy (within sites)
 - Depth strata
 - Habitat types
- Sampling method (UVC, EXPFISH, SCRAPING, PHOTO)
- Sampling unit size
- Units

- Taxa (put latin names where possible) – a drop-down list will be prepared
- Total abundance (number of indiv.)
- Add one column about cover (%)
- Total biomass (g)
- Mean size (mm)
- Variance of size
- Max. size (mm)
- Juveniles (YOY) – Small – Medium – Large (organise roughly three size classes)

Deviations from the project work programme.

- A booklet (D2) presenting lists of ecological data and MPA was planned for month 3, but it was requested for a delay in achievement of this deliverable and a booklet draft was finalized on month 10 (December 2005). This document requires revision by the editorial committee. The final achievement is expected by month 15.
- A database framework accessible on web system was planned for month 7. The large group (12 contractors) involved in this WP have produced that the discussion about the categories and variables to be included in the database finalized in month 12. Therefore, the fully complete database structure has been achieved in February 2006.
- A fully complete ecological dataset (D10) was planned for month 11 but in the 2nd plenary meeting it was decided that an achievement can not be expected until month 20th Dec 2006.

WP2. Fishery effects of MPAs

Objectives

- To evaluate the different case studies:
 - Differentiated evolution of captures and yields
 - Spatial distribution of fisheries effort

- Management regimes with relevance for fisheries

Tasks:

- Characterisation of regional fishery regimes
- Data compilation and standardization
- Analyses of fisheries trends for selected species
- Analysis of biological parameters (e.g. mean size of the catch, maximum size of the catch, trophic groups, and catch diversity)
- Analyses of trends of the fishing effort
- Other factors
- Effects of the stakeholders behaviour on the management regimes

During this first year was evaluated the progress in the identification of available data for the fisheries analysis from each case study, accordingly to the questionnaire previously sent to each representative of case studies.

The fisheries data base framework accessible on an internal web system and that can be filled on-line has been completed.

It was decided that four cases were not in condition to ensure at least some data for fisheries. It was decided that Bonnifacio, initially not included in WP2, will be part of the analysis using also data from other sources.

It was decided to create four WP2 interactive tables (fleet characteristics, boat characteristics, subsample catch, yield composition) accessible on the internal web system. Databases concerning the data for 'catches and yields' and also for spatial effort of the fleet will provide the data for the analysis of fisheries effects to be reported by WP1 (deliverable 18) and also input WP4 and WP5. Another database concerning fisheries and life history parameters, response specific needs for WP5.

The structure of each interactive table includes the following points:

Fleet Characteristics (the research unit for this table was considered to be a single fleet using a particular gear):

- Associated MPA, Inside Outside, Fleet Type, Gear, Seasonality, Fished Region, Fleet Name, Number of Boats, Mean Hp of Boats (kw), Stdev Hp of Boats (kw), Mean Length of Boats (m), StDev Length of Boats (m), Mean

GRT/TRB, StDev GRT/TRB, Mean No. of Men, StDev No. of Men, Mean number of days, StDev number of days, Area of grounds fished (km²).

Boat Characteristics (the research unit for this table was considered to be a single boat using a particular gear):

- Associated MPA, Inside Outside, Boat Type, Gear, Seasonality, Fished Region, Boat Name, Fleet Name, Length of Boat (m), Hp of Boat (kw), GRT/TRB, Mean No. of Men, StDev No. of Men, Mean number of days, StDev number of days, Area of grounds fished (km²).

Yield Composition:

- Associated MPA, Before/After, Catch/Landings, Frequency, Gear, Species Status, Harvest Region, Geo-reference, Boat Name, Year, Month, Specific Date, Haul, Distance from Centre of the MPA (km), No. Hooks (effort), Length of Net (effort) (cm), No. of Traps (effort), Days (effort), Other (effort), Species Name, Total Weight (kg), Mean Weight of Individuals (kg), StDev of Individuals (kg), Number of Individuals, Mean Length of Individuals (cm), StDev of Length (cm), TL/SL.

Sub-sampled catch:

- Associated MPA, Gear, Spawning Status, Boat, Year, Month, Day, Haul, Latitude, Longitude, Box Reference, Depth (m), Species, Total Length (mm), Standard Length (mm), Weight (kg), Sex, Age.

Fisheries dataset of all MPAs case-studies properly standardized was completed.

Deviations from the project work programme.

- A booklet (D4) synthesizing the different fishery regimes where MPAs are included was planned for month 5, but it was requested for a delay in achievement of this deliverable and a booklet draft was finalized on month 10 (December 2005). This document requires revision by the editorial committee. The final achievement is expected by month 15.

WP3. Socio-economic impacts of MPAs.

It is important to highlight the fact that it is the WP which needs the input of more new data obtained from surveys.

Objectives:

- To identify and survey the socio-economic impacts of MPAs
- For each case-study, 3 main types of costs and benefits will be considered:
 - Consumptive costs and benefits
 - Non-consumptive costs and benefits
 - Institutional costs and benefits
- WP3 will input to WPs4, 5 and 6

In order to reach the above-mentioned objectives, two types of tasks are to be performed:

1. State of the art concerning the economic evaluation of the MPAs (action: WP coordinating team)
2. Case-studies (action: various partners, coordinated by WP coordinating team).

For each case-study, the work to be done may be summed up through the following steps:

1. Qualitative analysis : identify stakeholders groups and potential costs and benefits of MPA for each group
2. Quantitative analysis : identify relevant data needs
3. Compile existing data
4. Identify gaps and decide which ones could be reasonably bridged by field surveys
5. Organise field surveys
6. Implement field surveys
7. Process and analyse results

During the spring of 2005, a questionnaire was sent by WP3 coordinating team to all teams in charge of case-studies in order to precise some characteristics of their case-study and what types of socioeconomic data were available.

In many cases, socioeconomic data needed by WP3 are not available. These data will have to be gathered during the project, in most cases by means of field surveys, realised

by the teams in charge of case-studies and coordinated by WP3 leader. These surveys should cover the three activities most commonly met in the case-studies plus a few activities that are important in some cases.

A methodological guidebook (D9) for field surveys have completed and it is available on web site.

The design of the different questionnaires was discussed during the meetings. 6 questionnaires have been produced and are available on website. These questionnaires have been designed to the following activities: professional fishing (addressed to fishers), diving (two types of questionnaires, one addressed to operators and other addressed to divers), recreational fishing (addressed to individual fishers), and recreational fishing-chartering fishing (two types of questionnaires, one addressed to operators and the other one addressed to customers.

- Each partner responsible of case-studies have choose the questionnaires to implement.
- For diving or fishing charter: the operator and customers' questionnaires need to be implemented together.

Some «special» questionnaires have been adapted to case-studies:

Apartment questionnaire designed for «La Graciosa» MPA.

Submarine path questionnaire designed for the «Côte Bleue» MPA.

Most of partners involved in this WP have distributed the questionnaires and they are obtaining many of them full filled. It has been planned the complete implementation of field surveys concerning recreational uses in spring-summer 2006.

Deviations from the project work programme.

- A literature review about economical analysis of MPA (D5) was planned for month 5, but it was requested for a delay in achievement of this deliverable and a booklet draft was finalized on month 12. This document requires revision by the editorial committee. The final achievement is expected by month 15.

3. Consortium management

To ensure the adequate level of co-ordination and communication among WPs (and other participants in the project), the following tasks have to be done by coordinator group:

- (a) Orientating and completing the general scientific, administrative and financial works and reports to EC.
- (b) Launching a Network at two levels: restricted (among participants) and extensive (i.e. including stakeholders), using internet resources (web page, e-mailing list, etc.), and meetings at different stages (plenary meetings, thematic congress, individual exchanges, etc.).
- (c) Organising a Steering committee to assess the progress of the project.
- (d) Establishing a Reference User Group
- (e) Establishing an Editorial committee aiming at organising and providing guidelines to the published deliverables, both at the scientific (research articles, reviews, etc.) and dissemination (booklets, guides, protocols, DSS, etc.) levels.
- (f) Facilitating co-ordination with other EC projects addressing the ecological and social impacts of fisheries management in EU, through the launching and participation in Clustering initiatives

Contractors

CNRS (Partner 2) requested for an amendment to the contract. This request was submitted to the Commission by the Coordinator team and it was approved:

Information on coordination activities

All decisions has been be taken by agreement of the involved partners; decisions concerning relevant modifications of the work-plan or delays in the achievement of milestones and/or deliverables have been agreed by the consortium in the steering committee.

About minor points or small delays in the work-plan (no longer than three months), decisions involving each workpackage has be taken by the workpackage leader, always with the approval of the co-ordinator and in communication with the whole partnership.

It has been created the EMPAFISH web page (www.um.es/empafish) from which a number of documents produced within the project is available at different accessibility levels (from confidential to accessible to the general public).

The public menu of the EMPAFISH web page has different sections “Description of EMPAFISH” section shows the general and specific objectives, the organization and the description of the different Workpackages. Besides that, it includes a map with the different case studies and their characteristics.

In the “Progress results “area will be included the more important results obtained and in “Press books” it will be shown the different published news related to the project.

During this first year of the project Coordinator group has recommended the importance of using the work area section for internal communication of the EMPAFISH participants. A brief guide to navigate and work in the work area of EMPAFISH was distributed to the partners.

It has been created a tool in the EMPAFISH work area (confidential level) which allows filling the data online. This tool is an interactive table which can be used by WP leaders and participants as follows:

A WP leader can create the interactive tables. Once the different tables for each study case are created, authorized users can start entering data by clicking on the Fill option. The WP leader can see at any time the structure and the data of each table corresponding to each study case but an authorized user can only see the table corresponding to his/her case study.

A first leaflet containing general information about the objectives, work programme, participants, etc has been produced and it is already available on EMPAFISH webpage.

During the first year of the project the following meetings has been held:

1st Plenary meeting (10-12 March 2005, Murcia, Spain).

This first meeting included starting and coordination activities, administrative aspects, constitution of the Steering Committee, elaboration of data base structure to be used at each WP, and presentation of the different case studies and available data. The framework for effective clustering with other EC related projects was designated, and formal contacts with these projects was established.

WP1-3 Joint Sectorial Meeting (6-8 July, 2005, Barcelona, Spain).

WP1 Sectorial meeting (28-30 November 2005, Barcelona, Spain).

WP2-3 Sectorial meeting (14-16 December 2005, Brest, France).

During these sectorial meetings the data available, the design of the database framework, the structure of the booklets have been discussed

Melanie Austen (WP6 leader)

Editorial Committee Constitution. The following partners constitute Editorial Committee:

Melanie Austen

Just Bayle

Serge Planes

Francesc Maynou

Jean Boncoeur

Ruth Higgins

Frederic Vandeperre

Concepción Marcos

Pablo Sánchez Jerez

Paolo Domenichi

Fabio Badalamenti

Philip Smith

Angel Pérez Ruzafa

Fuensanta Salas

Cooperation with other projects.

It has been established a framework of collaboration and coordination with the project “PROTEC” being the co-organization of the European Congress on MPAs one of the more significant aspects.

The European Congress on MPAs will be focus on scientific knowledge on MPAs process but taking into account the socio-economic aspects and their applicability to support policies and management strategies. In this framework an active participation of stake-holders is required and fundamental.

The Congress organizing committee has been constituted by 3 members of EMPAFISH and two members of PROTECT:

EMPAFISH	PROTECT
Angel Pérez-Ruzafa (UMU) Concepción Marcos (UMU) Jean Boncoeur (UBO)	Erik Hoffmann (DIFRES) Ole Vestergaard (DIFRES)

A first notice of the Symposium (to be held in Murcia in September 25th -28th, 2007) was elaborated in collaboration with Protect and was presented in the Australian Meeting on MPAs last autumn.

A first joint meeting of the organizing committee (Protect-Empafish) will be held on Murcia on 2-3 May, 2006.

Annex I. Deliverables and milestones correspondent to the first year of the project

Deliverable List

Del. no.	Deliverable name	WP no.	Date due	Actual/Forecast delivery date	Estimated indicative person-months	Lead contractor
D1	Consortium agreement	0	1	Complete	0.5	1
D2	Network+website +emailing list+continuous updting	0	3	Complete	10	1
D3	Booklet presenting lists of ecological data and MPA considered in the project	1	5	Complete but this documents requires revision of Editorial committee. Achievement expected by month 15	10	2
D4	Booklet synthesizing the different fishery regimes where MPAs are included	2	5	Complete but this documents requires revision of Editorial committee. Achievement expected by month 15	10	10
D5	Literature review: application of cost-benefit analysis to the case of MPAs.	3	5	Complete but this documents requires revision of Editorial committee. Achievement expected by month 15	5	12
D6	Ecological database framewok accessible on an internal web system and that can be filled on-line	1	7	Complete	11	2
D7	Fisheries database framewok accessible on an internal web system and that can be filled on-line	2	7	Complete	11	10
D8	Data base framewok of relevant socio-economic variables	3	7	Complete	11	12
D9	Methodological guidebook for socio-economic filed survey	3	7	Complete	4	12
D10	Ecological dataset including list of data identified for MPA cases studies selected	1	11	Month 14	138	2

Del. no.	Deliverable name	WP no.	Date due	Actual/Forecast delivery date	Estimated indicative person-months	Lead contractor
D11	Fisheries data set of all MPAs case studied properly standarized, including the identification of target, no target, most or less vulnerabled fish species, and compilation information on their life strategies and main biological parameters	2	11	Complete	77	10
D12	Dataset of socioeconomic variables for each case study	3	11	Month 19	34	12
D13	Production and implementation of the leaflet	0	11	Complete	3	1
D14	2 nd Plenary meeting reports	0	13	Complete	3	1

List of Milestones

Milestone no.	Milestone name	Workpackage no.	Date due	Actual/Forecast delivery date	Lead contractor
A	Consortium agreement, Network+website +emailing list, Steering Comitee organised, Cluster formalised	0	3	Complete	1
C	Leaflet produced and disseminated	0	11	Complete	1
D	1st year report, Interim report, RUG established, Editing committee organised	0	13	Complete	1
	Check list of ecological data and MPA considered in the project	1	3	Complete	2
	Ecological Data Base Framework accessible on an internal web system and that can be filled on-line	1	7	Complete	2
	Fieldwork achieved	1	11		2
	Check list of fisheries data and MPA considered in the project	2	3	Complete	10
	Conclusion of fishing data mining and dataset standardization	2	7	Complete	10

Milestone no.	Milestone name	Workpackage no.	Date due	Actual/Forecast delivery date	Lead contractor
	Fully completed fisheries dataset	2	13	Complete	10
	Literature review achieved	3	3	Complete	12
	Check list of relevant socioeconomic variables for each case study	3	7	Complete	12
	Socioeconomical Database framework	3	11	Complete	12