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< Methodological Guidebook For Socio-Economic Field Surveys of MPA users >

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Methodological Guidebook For Socio-Economic Field Surveys of MPA users

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Year 2006



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1. Introduction

This guidebook was primarily aimed at providing methodological assistance to socioeconomic field surveys organised within the framework of the EU funded research project EMPAFISH. More generally, it may provide some useful information to those who intend to implement field surveys in order to assess the economic impact of marine protected areas (MPAs).

This task requires taking into account different types of values. A complete assessment should cover both use values (e.g. net benefit for fishers) and non-use values (e.g. the existence value of biodiversity conservation). For practical reasons, the analysis was limited to use values within the socio-economic work package of EMPAFISH (WP3). These use values may be classified according to various criteria. Three of them are of particular relevance for our subject:

- Distinction between extractive and non-extractive uses of the ecosystem (e.g. fishing *v.* scuba diving)
- Distinction between recreational and non-recreational activities (e.g. sport fishing *v.* professional fishing)
- Distinction between market and non-market activities (e.g. professional fishing or recreational charter fishing *v.* individual recreational fishing)

Combining these criteria makes it possible to elaborate a typology of the various uses of the ecosystem of a MPA. However, it should be underlined that such a typology will not always provide clear-cut boundaries between different types of uses. For instance, considering an activity as “non-extractive” does not imply that it has no impact on the ecosystem. Another example of dubious situations is provided by scuba diving, an activity usually performed with the assistance of diving operators. Some of these operators are commercial businesses, which suggest scuba diving should be regarded as a market activity, just like charter fishing. But others are non-profit organisations, which makes the situation less clear.

Another possible distinction, liable to be of particular importance for economic analysis, is based on the nature of goods and services that are provided by the MPA or with its assistance: are these outputs standardized (e.g. fish landings with no particular mention of their “MPA” origin), or do they bear qualities which, by some way, may be related to the local characteristics of the zone (e.g. diving in a particular environment)? In the first case, the price-elasticity of demand may be considered as infinite, while, in the second

case, the demand curve is likely to have a downward slope. This property makes sense for an analysis of the consequences of the MPA on consumers' surplus, and not only producers' surplus as in the first case.

Whatever the criteria adopted, an economic assessment of use-values of MPAs should be as exhaustive as possible. This may be a difficult task, for at least two reasons. One is due to the nature of the activities that are considered, and the other is related to their geographical scope.

The nature of activities to be considered obviously depends on the MPA under survey. In the case of EMPAFISH, a research project covering a variety of South-European case studies (both in the Mediterranean and in the Atlantic), it proved necessary to investigate not only professional fishing, but also recreational activities (sport fishing, scuba diving, snorkelling...). However, some of these activities are performed informally (to say nothing of illegal activities such as poaching), and usually, in this case, no census or estimation of the main population is available. This is typically the case with sport fishing, an activity which, at sea, usually does not necessitate a fishing license, contrasting with professional fishing or freshwater sport fishing. Snorkelling is also concerned by this problem, except in particular situations (see below).

Another difficulty is related to the geographical scope of the surveys. For instance, in the simple case where a MPA is limited to a no-take zone (NTZ), fishers are not supposed to operate inside the MPA. However, the MPA is expected to impact their activity through transfers of fish biomass between the NTZ and the fishing zone, which raises the question of the area concerned by these transfers. Knowledge in this field is usually scarce and highly uncertain, and the problem is complicated by the fact that the geographical scope of biomass transfers may vary greatly according to species. A further complication may be due to the geographical mobility of fishers themselves (in some cases, the fishing zone surrounding a MPA is not only operated by "local" fishers – a term which anyhow needs some clarification).

In the case of EMPAFISH, it was decided to investigate the following activities:

- Professional fishing
- Sport fishing (charter and individual)
- Scuba diving
- Snorkelling (restricted to visits of submarine trails organised in some MPAs)

The geographical scope of surveys was defined as the MPA (including NTZ and other "protected" zones), plus possibly a surrounding relevant area to be determined in each case by the team in charge of each case study. The surveys were implemented by these teams during the years 2005-2006, and coordinated by the team in charge of the socioeconomic work package (UBO-CEDEM, Brest). Contrasting with the coordination team, the teams in charge of implementing the surveys were mainly composed of marine biologists, and did not involve economists. For the sake of comparability, it was decided to use the same questionnaire for a given activity in the various case studies, leaving the possibility, for the teams in charge of case studies, to add questions of local interest. The coordinating team, on the basis of its own previous experience, elaborated a first draft of these questionnaires. These drafts were submitted to the teams in charge of the case studies, who tested them and proposed modifications that were discussed collectively during WP3 coordination meetings. The questionnaires that are presented in the fourth section of this guidebook are the result of this iterative process.

As regards professional fishing, individual sport fishing and snorkelling, one questionnaire was elaborated for each type of users. In the case of scuba diving and charter fishing, one questionnaire was designed for operators, and another one for their customers. As a result, a total of 7 questionnaires were designed and implemented. However, not all activities were covered in each case study¹, and, for each activity, the number of questionnaires that were filled varies greatly according to the case study. The table below displays the number of questionnaires that were filled in each case study and for each activity.

EMPAFISH socioeconomic field surveys: number of answers

Types of uses Case studies	Fishing				Non-extractive uses			Total
	Professional	Recreational			Scuba diving		Snorkelling (submarine trails)	
		Individual	Charter		Operators	Customers		
			Operators	Customers	Operators	Customers		
Banyuls					11	82	164	257
Benidorm					6	307		313
Bonifacio		10			7	108	17	142
Cabo de Palos	4				4	132		140
Côte bleue		262			17	689	311	1279
Columbretes	21				8	257		286
La Restinga	28	142				159		329
La Graciosa	14	184						198
Malta	184	47			30	250		511
Medes	16				6	147		169
Monte da Guia	51	56	2	20	3	57		189
Sinis	37	25			3	34		99
Tuscany	1				1	63		65
Tabarca					1	108		109
Total	356	726	2	20	97	2393	492	4086

The next section of this guidebook gives a brief overview of the objectives of the surveys, and some general information concerning their implementation. The following section provides additional information concerning the surveys that were implemented by means of face-to-face interviews. The last section presents the questionnaires of the seven surveys.

Designed by the coordinating team, this guidebook was conceived as a practical tool, intended to help people in charge of implementing the EMPAFISH socioeconomic field surveys to solve practical problems, and to avoid methodological mistakes that might generate difficulties or bias in the interpretation of survey results. Besides a few formal improvements, the authors decided to leave it in its original shape and style, hoping that it might provide useful information to other researchers planning similar exercises.

¹ Some activities, e.g. visiting submarine trails, are not represented in all case studies.

2. General overview of the surveys

1. Objectives of the socio economic field surveys

Performing an economic valuation of MPAs requires i) to identify the stakeholders groups (e.g. professional fishers, recreational fishers, diving clubs...), ii) for each group, to identify potential costs and benefits related to the MPA, and iii) to quantify these costs and benefits. One of the difficulties of this exercise is to assess non-market costs and benefits (e.g. benefits of the MPA for recreational fishers). Economists have developed methodologies for this purpose, which necessitate the availability of information of a definite type. For instance, in the case of leisure activities, the implementation of the so-called “travelling cost” method requires data concerning the travelling costs incurred by people visiting the MPA.

In many cases, socio-economic data are not available. That is why we have to collect these data by implementing field surveys. The questionnaires are designed to collect socio-economic information at an individual scale. However, only aggregated data (by homogenous set of users) will be displayed in the socio-economic dataset (Deliverable 12). The aggregated socio-economic data will be used for the purpose of economic analysis (WP3), bio-economic modelling (WP5), and decision process analysis (WP6).

2. Types of surveys

Potentially 7 surveys may be implemented in each case study:

1. Professional fishers
2. Individual sport fishers
3. Charter fishing operators
4. Charter fishing customers
5. Scuba diving operators
6. Scuba diving customers
7. Visitors of submarine trails (snorkelling)

The surveys are limited to users with an activity inside the MPA (including a possible “neighbouring zone”, which should be clearly defined and justified prior to the surveys).

The aim of these surveys is to get homogenous information, allowing relevant comparisons between the various case studies. However, questionnaires may be adapted to local situations when necessary (in this case, please inform WP3 coordinator).

3. Sampling strategy

- **Survey of professional fishers, diving operators and charter fishing operators:** if the size of the population is small enough, an exhaustive survey should be attempted. Otherwise, the quota method should be used, which necessitates a prior knowledge of the structure of the population (by size and by type of activity – a specially important feature in the case of professional fishing).
- **Surveys of customers of diving and charter-fishing operators:** operators should be asked to randomly circulate the questionnaires among their customers. A similar strategy may be applied in the case of visitors of submarine trails, with the collaboration of the MPA management staff.
- **Survey of individual recreational fishers:** quota method (by type of fishing) if possible. If the structure of the main population is unknown (as is probably often the case), a sample of 30 persons at least should be constituted for each type of recreational fishing supposed to be significant in the area.

4. Implementing the surveys

The questionnaires belong to two different categories, according to the way they are to be filled:

1. **One-page questionnaires**, which may be filled by the surveyed persons themselves, without external help:
 - Charter fishing customers
 - Scuba diving customers
 - Visitors of submarine trails (snorkelling)
2. **Longer questionnaires**, which are to be filled by team members in charge of the survey, by means of face-to-face interviews:
 - Professional fishers
 - Individual sport fishers
 - Charter fishing operators
 - Scuba diving operators

The detailed guidelines in the next section have been specifically designed for this second category.

5. How to introduce the questionnaires?

For surveys belonging to the second category (face-to-face interviews), it is important to introduce the questionnaire by a short presentation:

- First, tell who you are (the organisation you belong to – better give the name of your University, for instance, than the name of your department or institute...)
- Explain the reason for the survey: you are involved in a research project concerning the impact of marine protected areas on fishing and recreational activities. Actually, the simplest way you present the project the better. Using the term MPA (Marine Protected Area) at least once in this foreword could be a way to see if the person in front of you is aware of the concept of MPA or if you have to explain it.
- Precise that you are using a questionnaire specifically targeting skippers and / or managers, and that the collaboration of this type of person is highly important for the project.
- Give an approximate duration of the interview.
- Precise that the confidentiality of all information and data will be strictly respected, and that only aggregated data will be used and published.
- Explain that he / she will get the results of the survey (dissemination of synthesis).

6. Reference period

The reference period is normally the year before the survey, except if something exceptional happened during this year (exceptional costs...). In this case, the last “normal” year should be used as the reference period.

7. Definition of two important and frequently used terms

- **Marine Protected Area (MPA):** an area where specific use restrictions apply (in particular concerning fishing), for the sake of ecosystem and natural resources conservation. It may include a no-take zone (fishing and other extractive activities not allowed) and a fishing zone (fishing allowed with specific restrictions). Alternative terms for MPAs, such as “reserves” or “marine reserves” may also be used during the interviews.
- **Professional fishing** (as opposed to recreational, or sport fishing): fishing mainly oriented towards selling catches.

8. What to do with the data you have collected?

After implementing the field surveys, each project partner in charge of a case study is asked to enter the collected data in the ACCESS forms that WP3 coordinator provided him, and to transmit these forms to the coordinator. WP3 coordinator will process survey results and download them into the EXCEL database (D12).

3. Guidelines for face-to-face interviews

This section provides detailed information on how to fill the questionnaires² related to the four surveys that are to be implemented by means of face-to-face interviews, namely:

1. Field survey of professional fishers
2. Field survey of individual sport fishers
3. Field survey of charter-fishing operators
4. Field survey of scuba diving operators

² See questionnaires in section 4 below.

1. Field survey of professional fishers

- *Targeted population: skippers and/or owners of professional fishing boats operating in the area under survey*
- *Duration: from 30 minutes to one hour.*
- *You should have an idea of the structure of the whole population before implementing the field survey (see WP2).*
- *On each questionnaire, please specify the fleet to which the boat belongs.*

- **Q11. Main technical features of your vessel(s)**

In most cases, the skipper is the boat owner and operates only one vessel. If he operates several vessels (“productive units”) during the year, one form per boat should be used from Q12 concerning costs / catches / earnings, but only one form for questions on perceptions (Q14;25;26-33).

If the fisher has a complementary activity of boat-chartering, don’t forget to mention the maximum number of authorized passengers.

- **Q12. Present second-hand value of the boat and fishing gears**

It concerns the fishing boat with all its equipments (fishing gears, electronics...), and the price the fisherman expects to get if he sells his boat today.

If the fisherman has no idea of the second-hand value of the boat, you can ask for the insurance value (in this case, please mention it).

As for Q11, owners of 2 boats should fill two distinct forms.

- **Q14. The main determinants of the fisherman’s choice concerning the fishing area**

This question asks the fisherman to classify the 5 major determinants that he considers the most important, among the 10 proposals, in his choice of a fishing area. The most important factor will be assigned a “1”, the second one a “2”... If asking for the 5 major factors seems to be difficult to achieve, you may ask only for the 3 first factors.

The proposal “*Regulations*” means the regulatory framework that applies to fishing activities in the area (authorization to fish, exclusion of some activities....)

The proposal “*Your experience*” means the experience of the fisherman, and the possibility for a fisherman to go fishing in an area because he is accustomed to go fishing in that place / he has always fished in this area.

The proposal “*To go fishing where other fishermen already fish*” means that the fisherman may be influenced by other fishers in his decision to go into this area: if other boats go fishing in this area, why wouldn’t he go either?

- **Q15. Details on the fishing activity**

We first need an assessment of the *whole annual activity* (all gears), i.e. the total annual number of trips at sea, then, if possible, the % of these trips inside the MPA, and the average duration of these trips, inside and outside the MPA (second column “overall description”). Columns 3 to 5 correspond to the level each of the first 3 gears contributes to the whole fishing activity (when there are several gears). The names of the 3 main species should be mentioned for each of the gears.

- **Q16. Share system**

Professional fishermen usually use the share system to pay the crew (including the skipper, in most cases). It corresponds to a % of the net ex-vessel value of landings, after some so-called “common costs” (e.g. fuel) have been deduced. If fishers you interview do not use this system, try to get the annual value of wages (euros).

- **Q17 – Q18 – Q19 Annual fixed and variable costs**

Q17: Fuel and lubricant consumption is an important part of the running (variable) costs of the vessel. This question will be asked again in Q19b, and that seems redundant. But Q17 is a way to have at least an assessment of the quantity of fuel used, if ever the fishermen are reluctant to answer Q18 & 19.

The fixed and variable costs should be collected in the same way as fishing activity information: first, an assessment of the *annual total costs by category* (boat and fishing gears maintenance and replacement, insurance, ice bait and food, fuel and lubricant...), *then, if possible, the details of these costs by gear.*

Costs should be expressed in euros/year for fixed costs, and euros/trip for variable costs. Fishermen usually have a good idea of these costs, but they may prefer to answer on other bases (for instance annual variable costs instead of costs per trip at sea): *in this case, you should collect the most relevant information, and precise the time unit in use if it differs from the indicated unit.*

- **Q20. Break-even point**

This question is very important to estimate the variable costs per trip. It is necessary to get this information, especially when the fisherman has not precisely answered the questions on detailed costs.

- **Q21, 24. Catches**

The important elements of information that we try to get through this set of questions are:

- an assessment of the *annual turnover* (landings and their average price);
- the *share of catches coming from the fishing zone of the MPA*. The contribution of the three main species to the annual turnover should be collected from the table “detail of your catches”.

When there are a lot of different species, please mention the data for the two most important ones, and use the third line (species 3) to aggregate data on all other species.

- **Q26. Non-fishing income**

It concerns other sources of activity income of the professional fisherman. In particular, some professional fishermen have a complementary charter activity which is defined as a commercial use of the boat (for recreational fishing or for non-extractive uses such as whale watching).

- **Q29. Perceptions of MPAs**

The perception of fish abundance inside and outside the MPA is a way to know if the fisherman thinks that the conservation measures established in the MPA are efficient.

Reminder: in the case of several “productive units”, these questions (Q26 to Q33 ; Q1 to Q12) could be filled only once; for others questions, please use one form per boat.

- **Q31-32. Modification of fishing effort / strategies**

These questions try to appreciate the dynamics of the fleet and the potential phenomenon of report of fishing effort.

2. Field survey of individual sport fishers

- *Targeted population: all kinds of recreational fishers operating in the area under survey, except those fishing from a charter fishing boat.*
- *Duration: from 30 minutes to one hour.*
- *Please mention on the questionnaire the **category** of the interviewed fisher:*
 - o *angling from the shore*
 - o *recreational fishing from a boat*
 - o *spear fishing*
 - o *shellfish gathering (if any)*
- *AND the **geographical origine** (Local / National Tourist / Foreign Tourist).*

- **Q3. Activity**

Q3 asks for the type of activity performed by the fisher when he/she is interviewed. Q4-Q7 refer to the whole activity of fishers (all the year round, whatever the fishing area). If the fisher uses several gears, Q7 asks for a classification of these gears.

- **Q11. The main factors of the fisher's choice of the fishing area**

This question asks the fisher to classify the 5 determinants that are the most important, according to him/her, among the 10 proposals, in his/her choice of a fishing area. The most important factor will be assigned a "1", the second one a "2"... If asking for the 5 major factors seems to be difficult to achieve, you may ask only for the 3 first factors.

"Regulations" means the regulatory framework of fishing activities in the area

The proposal "*Your experience*" means the experience of the fisher, and the possibility for a fisher to go fishing in an area because he/she is used to go fishing in that place, or he/she has always fished in this area.

The proposal "*To go fishing where other fishers already fish*" means that the fisher may be influenced by other fishers in its decision to go in this area: if others go fishing in this area, why wouldn't he/she go either?

- **Q12. Catches**

The question on catches in the first part of the questionnaire (**Q12**) refers to the whole activity of the fisher: *total catches per year* and *detailed contribution of the three main species to the total annual catches*.

The second set of questions on catches in the third part of the questionnaire (**Q27**) refers to the catches in the local fishing area, and the identification of the part of the catches coming from the MPA.

- **Q13. Annual budget dedicated to recreational fishing**

The detailed costs should be asked. If the fisher gives all answers on the different types of costs, then do not ask for the total (the sum of the costs). If significant types of costs appear to have been forgotten in the table, then add these costs beside the table. If the fisher cannot give the detail of the different categories of costs, then ask for the total budget dedicated to this activity.

- **Q14-Q18. If you fish from a boat**

As recreational fishing activities are not always operated from the shore, a special set of questions identified by a frame is aimed at collecting the *information concerning people fishing from a boat*. Among these questions, one is the usual number of persons *fishing simultaneously* from the same boat. The question on the *cost of a fishing trip* on a boat (Q18) is very important.

- **Q19-23. Travel to the fishing area**

Travel time and distance should be filled in two steps:

- First, the *travel time / distance from local accommodation* (home of the local fisher OR place of accommodation of people on holidays) to either the fishing place if the fisher fishes from the shore, or the harbour if he/she fishes from a boat,
- second, the *travel time / distance on the sea if the fisher fishes from a boat*.

These questions are very important to estimate the economic surplus generated by recreational fishing in the MPA (using the Travel Cost Method).

- **Q27. Catches in the fishing area**

In this question, only the share of the catches coming from the fishing zone of the MPA should be collected.

- **Q30. Perceptions of MPAs**

The perception of fish abundance inside and outside the MPA is a way to know if the fisher thinks that the conservation measures established in the MPA are efficient.

- **Q36. Net monthly household income**

This question asks for a *net* income (all income taxes paid) of the *household*. The proposed scale tries to cover all situations, but due to the possible heterogeneity of the targeted fishers (local / tourists from various countries...), this scale may be adapted to local situations (in this case, please precise the new scale).

- **Q38-Q43. If you are visiting the region for a while**

For tourists (people who do not permanently live in the area close to the MPA), it is very important to get information concerning:

- the reason why they have decided to come here
- the type of accommodation
- the duration of their stay
- the number of persons travelling on the same budget
- the total budget

To apply the travel cost method, it is important to know if the existence of the MPA is determinant in the decision to come here.

3. Field survey of charter-fishing operators

- *Targeted population: managers of all kinds of charter-fishing operators with an activity in the area under survey.*
- *Duration: approximately 1 hour*
- *The **category** of the charter operator will be defined ex post, depending on the legal status, the size (staff, number of customers...), unless you can classify operators ex ante (if so, please precise the criteria used).*

- **Q10-Q11. Number of jobs**

The table has been designed for the classification of all kinds of jobs, whereas permanent or seasonal. Its aim is to inventory the whole staff, and one line should be filled per job. The skipper is the captain of the boat operating for fishing charter trips.

- **Q15. Other equipments**

These equipments may be offices / stores to welcome the customers, or any place for storage of boats / fishing gears or equipment, vehicles...

- **Q17. Annual number of fishing trips**

As for gears used and catches, this number should be split into data *inside the MPA* and data *outside the MPA*, as a %. But respondents may find easier to give the actual number of trips. If it is so, please precise the time unit.

- **Q31. The value of fixed costs**

It should be collected in euros on an annual base. It concerns mainly the cost of keeping the boat and fishing equipment operational.

- **Q33. The value of variable costs**

It should be identified in two different units: Euros per year and Euros per trip. Some of the categories of costs cannot be filled in both units, and in that case the most reliable information will be collected.

- **Q37. The main determinants of the fisherman's choice of the fishing area**

This question asks the manager to classify the 5 determinants that he considers the most important, among the 10 proposals, in his choice of a fishing area. The most important factor will be assigned a "1", the second one a "2"... If asking for the 5 major factors seems to be difficult to achieve, you may ask only for the 3 first factors.

- **Q39-Q43. Perceptions of MPAs**

The perception of fish abundance inside and outside the MPA is a way to know if the fisherman thinks that the conservation measures established in the MPA are efficient.

4. Field survey of diving operators

- *Targeted population: managers of all kinds of diving operators (or so-called “diving clubs”) with an activity in the area under survey, whether they are commercial businesses or non-profit organisations.*
- *Duration: approximately 1 hour.*
- *The category of the diving club will be defined ex post, depending on the type of club (commercial or not), the size (staff, number of customers...), unless you can classify operators ex ante (if so, please precise the criteria used).*

- **Q10. Number of jobs**

The table has been designed for the classification of all kinds of jobs, whereas permanent or seasonal. Its aim is to inventory the whole staff and one line should be filled per job.

- **Q12. Usual size of crew**

Please mention the average size of the crew for each boat.

- **Q18. Month of activity**

As for the organisation of the activity, the question here is designed to identify if there is seasonality in the activity.

- **Q19, Q21 & Q22. Number of dives and fares**

Please insist on the distribution of trips at sea and dives inside AND outside the MPA (Q19). Q21 aims at classifying the activity of the clubs in three categories: dive courses (beginner & advanced), and “normal” dives. For each of them, we need to know the “standard price” of one dive, and the annual number of dives. This “standard price” includes rental of basic equipment. Q22 aims at precisising if the club has to pay a tax to have the right to organise dives in the MPA. In this case, the tax is paid by the operator (and possibly charged to his customers).

- **Q28-Q30. Annual fixed and variable costs**

These costs should be expressed in euros on an annual base. They cover mainly the costs of keeping the boat and diving equipment operational.

Both fixed and variable costs should normally be expressed in *euros / year*. We have added the possibility of answering in *euros / trip for variable costs*. Some of the categories of costs cannot be filled in both units, in that case the most reliable information will be collected. If the manager prefers to answer on other bases (monthly...), *you should collect the most relevant information and precise the time unit in use, if it differs from the indicated unit.*

Q29: *Fuel and lubricant* consumption is an important component of the running (variable) costs of the boats. This question will be asked again in Q30c, and that seems redundant. But Q29 is a way to have at least an assessment of the quantity of fuel used, if the manager is be reluctant to answer Q30.

Concerning labour costs: fixed costs take into account the cost of permanent staff (Q28c), while variable costs (Q30a) are about seasonal staff (e. g. hired instructors paid per dive).

- **Q34. The main determinants of the choice of the diving spot**

This question asks the manager to classify the 5 determinants that he considers the most important, among the 10 proposals, in his choice of a diving area. The most important factor will be assigned a “1”, the second one a “2”... If asking for the 5 major factors seems to be difficult to achieve, you may ask only for the 3 first factors.

- **Q38-Q41. Perceptions of MPAs**

The perception of fish abundance inside and outside the MPA is a way to know if the fisherman thinks that the conservation measures established in the MPA are efficient.

4. Questionnaires

This section reproduces the seven questionnaires that were used in the EMPAFISH socioeconomic field surveys³:

1. Professional fishers
2. Individual sport fishers
3. Charter-fishing operators
4. Scuba diving operators
5. Charter-fishing customers
6. Scuba diving customers
7. Visitors of submarine trails (snorkelling)

In this guidebook, the questionnaires are written in English, except for the one concerning visitors of submarine trails, which was only used in French case studies. However, project partners in charge of the case studies also elaborated Spanish, French, Italian and Portuguese versions of the questionnaires. In some cases, they introduced minor changes (usually taking the form of additional questions), with the agreement of WP3 coordinator. These changes are not reproduced here.

³ See section 3 for detailed information on how to fill Questionnaires 1 to 4 during face-to-face interviews. Questionnaires 5 to 7 were designed in such a way that surveyed persons should be able to fill them without external help. They should hold on a recto-verso A4 sheet.

EMPAFISH Questionnaire on Professional Fishing
(Information about individuals will remain strictly confidential)

1. Date: _____
2. MPA Name: _____ 2bis: Fleet category: _____

INFORMATION ABOUT YOUR FISHING ACTIVITY

3. Name and registration number of your vessel: _____
4. Registration port: _____
5. Where do you live? Town: _____ County / Region: _____
6. Are you: Owner of your vessel Co-owner Not the owner
7. How many boats do you own? _____ boats
8. Year of birth: _____
9. Date you started fishing: _____
10. Size of the household: _____ people

11. What are the main technical features of your vessel(s)?

Boat number	Length (metres)	Tonnage (GT)	Engine power (kW)	Annual number of engine operating hours	Year of construction	Year of purchase	Usual crew size (including skipper)	If chartering, Max. no. of authorized passengers (not including crew)
1								
2								
3								

12. According to your estimation, what is the present second hand market-value of your boat and fishing gears? _____ €

13. Average distance between harbour and main fishing grounds (nautical miles)

When fishing inside the MPA	When fishing outside of the MPA
_____ NM	_____ NM

14. What are the 5 major factors influencing your choice of fishing site? Please rank these features from the most important (1) to the least important (5).

	Please rank
Abundance of fish	____ ____
Weather conditions	____ ____
Presence of particular species	____ ____
Regulations	____ ____
Your experience	____ ____
Accessibility / proximity of the fishing area	____ ____
To go fishing where other fishermen already fish	____ ____
Proximity of a marine protected area	____ ____
Few fishers go fishing in this area	____ ____
Few other activities on this area (diving, surfing, sailing...)	____ ____
Other (please specify: _____)	____ ____

15. Details of your fishing activity

	Overall description	Description by gear		
		Gear 1	Gear 2	Gear 3
Gear name				
Main targeted species				
Name of species 1				
Name of species 2				
Name of species 3				
Annual number of trips				
Total number (trips/year)	Trips	trips	trips	trips
% in the MPA	%	%	%	%
Average trip duration (hours / trip)				
When fishing inside MPA	Hours	hours	hours	hours
When fishing outside MPA	Hours	hours	hours	hours

ASSESSMENT OF COSTS

16. In your sharing system, what is the share of the entire crew? _____ %

(in other cases: annual labour costs: _____ €/year)

17. Annual consumption of fuel and lubricant

	Quantity (litres/year)	Value (€/year)
Fuel		
Lubricant		

18. Annual fixed costs (euros per year)

	Global description (€/year)	Description by gear		
		Gear 1	Gear 2	Gear 3
18a. Boat (maintenance and repairs, including engine and electronic equipment)				
18b. Fishing gears (maintenance and replacement)				
18c. Other fixed costs (harbour dues, licence, insurance, management costs)				

19. Variable costs in euros per trip (i.e. costs that are approximately proportional to the number of trips)?

	Overall description (€/trip)	Description by gear		
		Gear 1	Gear 2	Gear 3
19a. Ice, bait and food				
19b. Fuel and lubricant				
19c. Other variable costs please specify:				

20. What would you say is the value of your landings needed for a trip to break even?

_____ €/trip

CATCHES

21. What are your total annual landings (all species)? _____Tons

22. What was the annual value of your landings? _____€/year

23. What percentage of your catches comes from the authorised fishing zone of the protected area? _____%

24. Details of your annual catches

	Name	Landings (tons)	% caught inside the MPA	Average price (€/ kg)	Main gear used
Species 1					
Species 2					
Species 3					

25. Since the creation of the MPA, has your turnover:

- Increased Been stable Decreased

26. Do you have other additional income?

- Yes, an activity income Yes, a pension No

26a. If this is an activity income, please specify:

- from what activity : _____
- the time dedicated to this activity : _____% of your working time
- what are the reasons for this activity ?
 - Impossible to fish (depletion of resources, weather, protected areas...)
 - Other activities are more profitable (tourism, recreational fishing ...)
 - For pleasure: you enjoy practicing other activities
 - Other (please specify: _____)

YOUR PERCEPTION OF MPAS AND YOUR FISHING STRATEGIES:

27. For how many years have you been fishing in the MPA ? _____

28. On the whole, what is the impact of the MPA on your fishing activity?

- Very positive Rather positive No impact Rather negative Very negative

29. What do you think of the following statements

	Fully agree	Rather agree	Rather disagree	Fully disagree	Don't know
The MPA helps to protect biodiversity					
The MPA enhances fish abundance inside the area					
The MPA enhances fish abundance outside the area					
The MPA helps to attract tourists					
The MPA benefits mainly professional fishing					
The MPA benefits mainly recreational fishing					
The MPA benefits mainly scuba-diving					
The zoning system of the MPA helps to reduce conflicts among different types of users					
The MPA helps to reduce illegal fishing					
The MPA is good for the local economy					

30. How are relations with other users?

	Good cooperation	Conflict	No contact
Recreational fishing charters			
Other professional fishermen			
Independent recreational fishermen			
Spear fishers			
Divers			
Jet ski users			
Surfers, windsurfers, kite-surfers...			
Other users (<i>please specify :</i>)			

31. How has your fishing effort changed since the creation of the protected area?

- It increased
- It remained unchanged
- It decreased

31a. If your fishing effort has decreased, do you now spend that time:

- On other activities related to fishing (mending fishing gears, commercialisation...)
- On non-fishing activities

32. Has the creation of the protected area influenced the way you fish?

- Yes
- No

32a. If Yes, how?

- You are targeting other species
- You are no longer fishing in the area of the MPA
- You are fishing close to the boundaries of the MPA
- You are using other fishing gears
- Other (please specify:)

33. Do you have any comments about our questionnaire and survey?

Thank you for your kind cooperation.

EMPAFISH Questionnaire on Recreational Fishing
 (Information about individuals will remain strictly confidential)

1. Date: _____

2. MPA Name: _____

3. Which activity are you being interviewed about today?

- Recreational fishing from a boat Angling from the shore
 Spear fishing Shellfish gathering

YOUR EXPERIENCE OF RECREATIONAL FISHING

4. When do you fish?

- all year round in summer in winter only during holidays other (specify)

5. How long have you been fishing?

- less than one year 1 to 5 years 6 to 10 years 11 to 20 years more than 20 years

6. How many times do you fish per year? _____ Days

7. Among the following gears, please rank the gears you are using, from the most important (1) to the less (2, 3, ...). Leave a blank when you are not using one of these gears.

- Hook and line Nets Pots
 Spear fishing Shellfish gathering Other (specify) : _____

8. Do you belong to a recreational fishing club or association? Yes No

9. Do you read magazines specialising in recreational fishing? Yes No

10. What is your level of fishing expertise?

- Beginner Medium Expert

11. What are the 5 major factors influencing your choice of fishing site? Please rank these features from the most important (1) to the least important (5).

	Please rank
Abundance of fish	_
Weather conditions	_
Presence of particular species	_
Regulations	_
Your experience	_
Safety (e.g. shelter from wind)	_
Accessibility / proximity of the fishing area	_
To go fishing where other fishermen already fish	_
Proximity of a marine protected area	_
Few fishers go fishing in this area	_
Few other activities on this area (diving, surfing, sailing...)	_
Other (please specify: _____)	_

12. What are your total catches per year, and the detail for the three main species?

	Name	Catches kg / year
Species 1		
Species 2		
Species 3		
All species	All species	

13. What is your annual budget dedicated to recreational fishing?

	In euros
Fishing gear (maintenance, replacement)	€
Licences, insurance, specialised magazines...	€
Boat: maintenance, fuel and lubricant, harbour costs...	€
Fees paid to fishing charters	€
Fishing tours (travelling and subsistence expenditures included)	€
Total	€

If you are fishing from a boat:

14. Do you own a fishing boat? Yes No

15. If yes, what are the main technical features of your vessel?

15a. Length: _____ metres

15b. Power: _____ kW

15c. Tonnage: _____ GT

15d. Max. number passengers: _____ people

15e. Date of purchase: ____

15f. Year of construction: ____

16. Usual number of persons fishing simultaneously from the same boat? _____ people

17. You use this boat: only for recreational fishing
 mainly for recreational fishing
 mainly for non-fishing activities

18. What is the average cost of a fishing trip on your boat? _____ €/trip

THE AREA YOU ARE FISHING TODAY

19. This fishing area is:

Your usual area One of your fishing areas among others Not your usual area

20. How many times do you fish in this particular area, per year? _____ days

21. What part of your annual catches come from this particular area? _____%

22. How long did it take you to travel to this fishing area?

	Duration (mn)	Distance
By car / bicycle / foot (from your living place here to this fishing area or to the harbour if you are fishing from a boat)	_____ minutes	_____ km
By boat (from harbour to fishing area)	_____ minutes	_____ miles
Total transportation time from your home / holiday accommodation to your fishing area	_____ minutes	

23. Do you think this travelling time is:

	By car / bicycle / foot	By boat
A waste of time	<input type="checkbox"/>	<input type="checkbox"/>
A leisure time	<input type="checkbox"/>	<input type="checkbox"/>
No opinion	<input type="checkbox"/>	<input type="checkbox"/>

24. Why did you choose this fishing area?

Famous fishing area	<input type="checkbox"/>	Proximity of a marine protected area	<input type="checkbox"/>
Tourism area	<input type="checkbox"/>	Other (specify) : _____	<input type="checkbox"/>

PERCEPTION OF THE MARINE PROTECTED AREAS AND FISHING STRATEGIES:

25. Did you know of the existence of the MPA? Yes No

26. Do you fish inside the authorized fishing zone of MPA? Yes No

26a. If yes, for how much of your fishing time: _____%

26b. If no, how far from the MPA are you fishing: _____ miles

27. What are your catches in this fishing area?

	Name	Catches kg / year	% caught in the MPA
Species 1			
Species 2			
Species 3			
All species			

28. Did the existence of the MPA influence your choice to come fishing here?

Highly Moderately Not at all

29. On the whole, what is the impact of the MPA on your fishing activity?

Very positive Rather positive No impact Rather negative Very negative

30. What do you think of the following statements?

	Fully agree	Rather agree	Rather disagree	Fully disagree	Don't know
The MPA helps to protect biodiversity					
The MPA enhances fish abundance inside the area					
The MPA enhances fish abundance outside the area					
The MPA enhances catches					
The MPA benefits mainly professional fishing					
The MPA benefits mainly recreational fishing					
The MPA benefits mainly scuba-diving					
The zoning system of the MPA helps to reduce conflicts among different types of user					
The MPA helps to reduce illegal fishing					
The MPA is good for the local economy					

31. How are relations with other users?

	Good cooperation	Conflict	No contact
Professional fishers			
Other Recreational fishers			
Spear fishers			
Divers			
Jet ski users			
Surfers, windsurfers, kite-surfers...			
Other users (<i>please specify</i>)			

PERSONAL INFORMATION CONCERNING THE FISHER :

32. Gender: Female Male

33. Year of birth : _____

34. How many people live in the same household? : _____ persons

35. Professional occupation:

- Farmer
- Craftsman or shop keeper
- Manager, senior civil servant, doctor, lawyer, professor...
- School teacher, other white collar worker
- Employee
- Blue collar worker
- Student
- Retired

36. What is your net monthly household income (all taxes paid)?

- Less than 1200 €
- 1201– 1800 €
- 1801– 2400 €
- 2401– 3600 €
- 3601– 4800 €
- 4801– 6 000 €
- More than 6 000 €

37. Where do you live?

Country..... Region City:.....

If you are visiting the region for a while:

38. How important was recreational fishing in your decision to come here?

- Decisive Moderate Low or no role

39. Your accommodation here?

- Hotel..... Family or relatives... Leisure boat.....

Camping ground..... Holliday resort..... Other (specifiy) : _____

Rented house..... Your own property...

40. How did you travel here?

- Car Plane Train Boat Other
(specify: _____)

41. How long is your stay here (number of days)? _____ days

42. How many relatives are travelling with you (on the same budget)? _____ people

43. What is your budget for your stay here (all included, for you and the people travelling with you)? _____ €

44. Do you have any comments on our questionnaire survey?

Thank you for your kind cooperation

EMPAFISH Questionnaire for charter fishing operators
(Information about individuals will remain strictly confidential)

1. Date: _____
 2. MPA name: _____

WHO ARE YOU?

3. Name of the fishing charter operator: _____
 4. Date of establishment: _____
 5. Legal status:
 Commercial business
 Non-profit organisation

6. Manager's name: _____
 7. Year of birth: _____
 8. When did you start this job: _____
 9. Home port: _____

10. Number of jobs, including manager (one line per person)

	Nature of job	Full time or part time, as a % of a full time job	Wage earner? (Yes /No)	Number of months of work per year
Permanent	1.			
	2.			
	3.			
	4.			
Seasonal	1.			
	2.			
	3.			
	4.			

11. Is the skipper a wage earner? Yes No

12. How many boats do you run? _____

13. What are their technical characteristics?

Type of boat	Length (metres)	Tonnage (GT)	Engine power (kW)	Annual no. of engine operating hours	Year of construction	Year of purchase	Crew size	Max. no. of authorized passengers (not including crew)

14. According to your estimation, what is the present second hand market-value of your boat(s) and fishing gear? _____ €

15. Do you have the use of other premises or equipment?

Premises for customers	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Buying <input type="checkbox"/>	Renting <input type="checkbox"/>	Size:
Premises to store equipments	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Buying <input type="checkbox"/>	Renting <input type="checkbox"/>	Size:
Other (vehicles...)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Buying <input type="checkbox"/>	Renting <input type="checkbox"/>	

DESCRIPTION OF YOUR CHARTER ACTIVITY:

16. How many months of activity (linked to charter fishing) per year? _____

17. How many trips at sea do you organise a year? :

Number of trips per year	Number of customers per year	% of trips in the MPA (as a % of the total number of trips at sea)	Fare charged to customers (fare per trip)
			€

18. What are the main types of fishing gear?

Name of the gear	Number of trips / year	% of trips in the MPA (as a % of the total no. of trips)	Main targeted species

19. Average duration of a trip at sea (hours)?

When fishing inside the MPA	When fishing outside the MPA
_____ hours	_____ hours

20. What % of customers bring their own fishing equipment? _____ %

21. How is your fishing activity organised over the year?

	Number of months / year	Crew size	Number of trips per month	Number of customers per trip	Average duration of a trip at sea
Low season					
High season					

22. Nature of the trips

- Day trips
- Night trips
- Both

23. Apart from fishing, do you offer any other activities or products to your customers?

- Yes
- No

23a. If yes, please indicate their nature:

- Sightseeing trips at sea (without fishing)
- Observation of marine mammals
- Fishing equipment rental
- Boat rental
- Other (please specify) _____

24. Is fishing your only professional business?

- Yes
- No

24a. If no, please specify:

- the nature of your other business(es) : _____
- the share of your working time devoted to it (them) : _____% of your total working time

25. Are you a former professional fisherman?

- Yes
- No

26. Who are your customers?

	as a % of the total number of customers
Residents (local)	
National tourists	
Foreign tourists (specify main country of origin : _____)	

27. What weight of fish do you and your customers catch per year? _____kg

28. What % of the total catch comes from the MPA? _____%

29. What do you do with the fish?

- Shared among customers (customers keep their own fish for free)
- Sold for your profit
- Donated
- Other, please specify _____

30. What are the main species caught?

Name	Quantity (kg/year)	% of catch coming from the MPA	Ex-vessel price (€/kg)

COSTS

31. Annual fixed costs

	Euros / year
31a. Boat (maintenance and repairs, including engine)	
31b. Fishing gear (maintenance and replacement)	
31c. Other fixed costs (harbour dues, licence, buildings, insurance, management costs, advertising, etc..)	
Total	

32. Annual consumption of fuel and lubricant

	Quantity (litres/year)	Cost (€/year)
Fuel		
Lubricant		

33. Variable costs (i.e. costs that are approximately proportional to the number of trips)

	Euros / year	Euros / trip
33a. Total labour cost		
33b. Ice, bait and food		
33c. Fishing consumables (hooks, lines...)		
33d. Fuel and lubricant		
33e. Selling costs (auction taxes, etc.)		
33f. Other variable costs (please specify: _____)		

34. How many customers do you need for a trip to break-even? _____customers / trip

FISHING ZONES

35. How many fishing sites do you visit regularly?

Inside MPA	Outside MPA

36. Average duration of the journey from harbour to the main fishing sites?

	Duration	Distance
Fishing sites inside the MPA	_____ minutes	_____ nautical miles
Fishing sites outside the MPA	_____ minutes	_____ nautical miles

37. What are the 5 major factors influencing your choice of fishing site? Please rank these features from the most important (1) to the least important (5).

	Please rank
Abundance of fish	_
Weather conditions	_
Presence of particular species	_
Regulations	_
Your experience	_
Safety (e.g. shelter from wind)	_
Accessibility / proximity of the fishing area	_
To go fishing where other fishermen already fish	_
Proximity of a marine protected area	_
Few fishers go fishing in this area	_
Few other activities on this area (diving, surfing, sailing...)	_
Other (please specify: _____)	_

38. How are relations with others users?

	Good cooperation	Conflict	No contact
Other fishing charter operators			
Professional fishermen			
Independent recreational fishermen			
Spear fishers			
Divers			
Jet ski users			
Surfers, windsurfers, kite-surfers...			
Other users (please specify : _____)			

YOUR PERCEPTION OF MPAs:

39. For how many years have you been fishing in the MPA? _____

40. On the whole, what is the impact of the MPA on your fishing activity?

Very positive Rather positive No impact Rather negative Very negative

41. What do you think of the following statements?

	Fully agree	Rather agree	Rather disagree	Fully disagree	Don't know
Tourists come here mainly because of the MPA					
Tourists come here mainly for fishing					
Fishing inside the MPA matters to your customers					

42. What do you think of the following statements?

	Fully agree	Rather agree	Rather disagree	Fully disagree	Don't know
The MPA helps to protect biodiversity					
The MPA helps to enhance fish abundance inside the area					
The MPA helps to enhance fish abundance outside the area					
The MPA helps to attract tourists					
The MPA benefits mainly professional fishing					
The MPA benefits mainly recreational fishing					
The MPA benefits mainly scuba-diving					
The zoning system of the MPA helps to reduce conflicts among different types of user					
The MPA helps to reduce illegal fishing					
The MPA is good for the local economy					

43. Do you inform your customers of the existence of the MPA?

- Yes
 No

44. Do you inform your customers about specific regulations concerning ecosystem conservation and minimum landing size of fish inside MPAs?

- Yes
 No

45. Do you discard catches under the minimum size?

- Yes
 No

46. Would you agree to distribute a questionnaire about recreational fishing and MPAs to your customers?

- Yes
 No

47. Do you have any comments about our questionnaire and survey?

Thank you for your kind cooperation.

EMPAFISH Questionnaire for Diving Operators
(Information about individuals will remain strictly confidential)

1. Date: _____
2. MPA Name: _____

WHO ARE YOU?

3. Name of your Diving Centre: _____
4. Date of establishment: _____
5. Legal status:
 Commercial business
 Non-profit organisation

6. Manager's Name : _____
7. Year of birth: _____
8. When did you start this job: _____
9. Home port: _____

10. Number of jobs, including manager (one line per person)

	Nature of job	Full time or part time, as a % of a full time job	Wage earner ? (Yes /No)	Number of months of work per year
Permanent	1.			
	2.			
	3.			
	4.			
Seasonal	1.			
	2.			
	3.			
	4.			

11. How many boats do you run? _____

12. What are their technical characteristics?

Boat	Length (metres)	Tonnage (GT)	Engine power (kW)	Annual no. of engine operating hours	Year of construction	Year of purchase	Crew size	Max. no. of authorized passengers (not including crew)
1								
2								
3								

13. How many tanks / cylinders (fully equipped) do you have for your customers? _____

14. Do you own a compressor? Yes No

15. How many tanks / cylinders do you fill per year, on average? _____

16. Do you have the use of other premises or equipment?

Premises for customers	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Buying <input type="checkbox"/>	Renting <input type="checkbox"/>	Size:
Premises to store equipments	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Buying <input type="checkbox"/>	Renting <input type="checkbox"/>	Size:
Other (vehicles...)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Buying <input type="checkbox"/>	Renting <input type="checkbox"/>	

17. According to your estimation, what is the present second hand market-value of your boat(s) and diving equipment? _____ €

DESCRIPTION OF YOUR ACTIVITY:

18. How many months of activity (related to scuba diving) per year? _____

19. How many dives do you organise a year, on average?

Number of trips per year	Number of customers per year	Number of dives per year (1 dive = 1 customer diving once per trip)	% of dives in the MPA (as a % of the total number of dives)

20. Usual number of dives per customer and per trip? 1 dive / customer / trip
 2 dives / customer / trip
 other: ... dives / customer / trip

21. What are the typical fares charged to customers per dive?

	Standard price / dive (rental included)		Number of dives per year	
	Inside the MPA	Outside the MPA	Inside the MPA	Outside the MPA
21a. Beginner courses				
21b. Advanced courses				
21c. Other dives				

22. Is there a specific tax for diving in the MPA?

- Yes
 No

22a. If yes, how much per dive? _____ euros / dive

23. Average duration of a trip (hours)?

When diving inside the MPA	When diving outside of the MPA
_____ hours	_____ hours

24. Apart from scuba-diving, do you offer anyother activities or products to your customers?

- Yes
 No

24a. If you do, please specify their nature

- SCUBA diver training
 rent equipment
 sell equipment
 Apnoea
 Snorkelling
 Rod and line fishing
 Souvenirs
 Other (please specify) _____

25. Is scuba-diving your only professional business?

- Yes
 No

25a. If it is not, please specify:

- the nature of the other business(es) : _____
- the share of your working time you devote to it (them): _____ as a % of your total working time

26. How is your (scuba-diving) activity distributed over the year?

	Number of months / year	Number of instructors	Number of days / month	Number of trips / day (rotation)	Number of divers / trip
Low season					
high season					

27. Who are your customers?

	as a % of the total number of customers
Residents (local)	
National tourists	
Foreign tourists (specify their main origin :)	

COSTS

28. Annual fixed costs:

	Euros / year
28a. Boat (maintenance and repairs, including engine)	
28b. Diving equipment (maintenance and replacement, including compressor)	
28c. Labour costs (permanent staff)	
28d. Other fixed costs (harbour dues, licence, buildings, insurance, management costs, advertising)	
Total	

29. Annual fuel and lubricant consumption

	Quantity (litres/year)	Value (€/year)
Fuel	Litres	Euros
Lubricant	Litres	Euros

30. Variable costs (i.e. costs that are approximately proportional to the number of trips):

	Euros / year	Euros / trip
30a. Other labour costs (hired instructors...)		
30b. Compressor running costs		
30c. Fuel and lubricant		
30d. Other variable costs (please specify)		

31. How many customers do you need for a trip to break even? _____ divers / trip

DIVE SITES

32. How many dive sites do you use regularly?

Inside MPA	Outside MPA

33. Journey from harbour to the main dive sites

	Average travelling time (one way)	Average distance (one way)
Dive sites inside MPA	_____ minutes	_____ nautical miles
Dive sites outside MPA	_____ minutes	_____ nautical miles

34. What are the 5 major factors influencing your choice of a diving site? Please rank these features from the most important (1) to the least important (5).

Water clarity (underwater visibility)		___	
Weather conditions (sun, temperature of water...)		___	
Presence of spectacular species (e.g. groupers, morays, sea fans)		___	
Abundance and diversity of fish		___	
Special underwater scenery (e.g. caves, cliffs)		___	
Presence of a shipwreck		___	
Safety (e.g. shelter from wind)		___	
Accessibility / short distance to travel		___	
Few divers on the site		___	
Diving in a marine reserve		___	
Few other activities on the site (fishing, surfing, jet ski, sailing...)		___	
Other, please specify _____		___	

35. Do you think that some sites are over-crowded by divers?

Inside MPA	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Outside MPA	<input type="checkbox"/> Yes	<input type="checkbox"/> No

35a. If you do, does it influence your choice of dive site?

- Yes
 No

36. How are relations with other sea users?

	Good cooperation	Conflict	No contact
Other diving centres			
Professional fishers			
Recreational fishers			
Spear fishers			
Jet ski users			
Surfers, windsurfers, kite-surfers...			
Other users (<i>please specify</i> :)			

37. What do you think of the following statements?

	Fully agree	Rather agree	Rather disagree	Fully disagree	Don't know
Scuba-diving and snorkelling have no impact on marine environment					
Fish feeding is not harmful to marine environment					
Fish feeding has a significant impact on the presence of fish in the marine reserve					
Fish feeding at dive sites is necessary to the activities of scuba-diving centres					
Spear fishing does not affect fish behaviour					
Setting up moorings for dive boats does not help to protect the marine environment					

YOUR PERCEPTION OF MPAs:

38. For how many years have you run diving activities in the MPA? _____

39. On the whole, what is the impact of the MPA on your diving activity?

- Very positive Rather positive No impact Rather negative Very negative

40. What do you think of the following statements?

	Fully agree	Rather agree	Rather disagree	Fully disagree	Don't know
Tourists come here mainly because of the MPA					
Tourists come here mainly for diving					
Diving inside the MPA matters to your customers					

41. What do you think of the following statements?

	Fully agree	Rather agree	Rather disagree	Fully disagree	Don't know
The MPA helps to protect biodiversity					
The MPA helps to enhance fish abundance inside the area					
The MPA helps to enhance fish abundance outside the area					
The MPA helps to attract tourists					
The MPA helps to improve the quality of diving					
The MPA benefits mainly professional fishing					
The MPA benefits mainly recreational fishing					
The MPA benefits mainly scuba-diving					
The zoning system of the MPA helps to reduce conflicts among different types of user					
The MPA helps to reduce illegal fishing					
The MPA is good for the local economy					

42. Do you inform your customers that they are diving inside a MPA?

- Yes
 No

43. Do you inform your customers about specific regulations concerning ecosystem conservation inside MPAs?

- Yes
 No

44. Would you agree to distribute a questionnaire about diving and MPAs to your customers?

- Yes
 No

45. Do you have any comments about our questionnaire and survey?

Thank you for your kind cooperation.

RECREATIONAL FISHING SURVEY

This survey is part of a scientific research project on the effects of marine reserves, funded by the European Union. The answers are anonymous and confidential and only aggregate data will be used for the project. Your cooperation is greatly appreciated. For more information on this project, see <http://www.um.es/empafish/>

Your recreational fishing activity

1. What is your level?
 Beginner Intermediate Expert
2. Do you normally go fishing (two answers possible):
 With a charter fishing boat
 On your own fishing boat
 On the boat of friends / relatives
 Other (please specify: _____)
3. What kind of recreational fishing activities do you usually practice (several answers possible)?
 fishing from a boat
 angling from the shore
 spear fishing
 shellfish gathering
4. When did you start fishing (year)? _____
5. What is your annual fishing budget?

Fishing gears (purchase, maintenance)	_____€
Licence, insurance, specialized magazines...	_____€
Boat maintenance, fuel, harbour...	_____€
Fees paid to fishing charter	_____€
Fishing holidays (all included)	_____€
Total	_____€

6. On the average, how many times do you fish per year?
 _____ **trips/year**
7. What influences your choice of a fishing site? Please indicate the first (1), second (2) and third (3) most important features that influence your choice of fishing site.

	Rank
Abundance of fish	_
Weather conditions (sun, wind...)	_
Presence of specific species (e.g. bass, groupers...)	_
Your experience	_
Safety (e.g. shelter from wind)	_
Accessibility / proximity / short distance to travel	_
Other fishers go fishing in this area	_
Proximity of a marine reserve	_
Few fishers on the area	_
Few other activities on the site (diving, surfing, jet ski, sailing...)	_
Other, please specify _____	_

8. Do you think recreational fishing damages the marine environment in some areas?
 Yes No I don't know
 If yes, why?
 - Too many catches
 - Behaviour of some fishers / impacts of some gears

The marine reserve

9. Before today, were you aware of the existence of the _____ marine reserve? Yes No
10. Did the existence of the marine reserve influence your decision to come fishing here?
 Yes, a lot Yes, a little No
11. Do you think that marine reserves have a positive impact on the marine environment?
 Yes No I don't know
12. Have you previously fished in other marine reserves elsewhere? Yes No

About you

13. Gender : Male Female
14. Where do you live?
 Country.....
 Region/state/province.....
 City/town.....
15. Year of birth? _____
16. How many people live in the same household? _____
17. What is your **net monthly household income** (all taxes paid)?
 Less than 1200 € 1201– 1800 €
 1801– 2400 € 2401– 3600 €
 3601– 4800 € 4801– 6000 €
 More than 6000 €

IF YOU ARE VISITING

18. How much was your decision to come to this region influenced by fishing?
 Very much Moderately No influence
19. How many fishing trips are you planning to do during your stay? _____ **trips**
20. How many fishing trips did you do in this region last year? _____ **trips**
21. How did you travel to this region?
 By car By plane
 By ferry boat
 Other, please specify _____
22. What is your type of accommodation here?
 Rented house or apartment
 Your own house or apartment
 Hotel, hostel Camping
 Friends/family other, please specify _____
23. How many days do you intend to stay in this region?
 _____ **days**
24. How many persons are travelling with you (living on the same budget)? _____ **persons**
25. What is the approximate total budget for your stay (including everyone travelling with you)? _____ €

Thank you!

SCUBA DIVING SURVEY

This survey is part of a scientific research project on the effects of marine reserves, funded by the European Union. The answers are anonymous and confidential and only aggregate data will be used for the project. Your cooperation is greatly appreciated. For more information on this project, see <http://www.um.es/empafish/>

Your scuba diving activity

1. What is your level ?
 - First dive
 - Beginner (e.g. PADI Open water, CMAS *)
 - Intermediate (e.g. PADI Advanced/ Rescue, CMAS **)
 - Expert (e.g. PADI Dive Master, CMAS ***)
2. On the average, how many dives do you log per year?
_____ **dives/year**
3. Do you normally dive:
 - With a non-commercial diving club
 - With a commercial diving club
 - Independently
4. When did you start diving (year)? _____

5. What is your annual diving budget?

Diving gears (purchase, maintenance)	_____€
Licence, insurance	_____€
Dive-trips, training courses, filling up tanks	_____€
Diving holidays (all included)	_____€
Total	_____€

6. What influences your choice of diving site? Please indicate the first (1), the second (2) and third (3) most important features that influence your choice of diving site.

Water clarity (underwater visibility)	Rank
Weather conditions (sun, temperature of water...)	_
Presence of spectacular species (e.g. groupers, morays, sea fans)	_
Abundance and diversity of fish	_
Special underwater scenery (e.g. caves, cliffs)	_
Presence of a shipwreck	_
Safety (e.g. shelter from wind)	_
Accessibility / short distance to travel	_
Few divers on the site	_
Few other activities on the site (fishing, surfing, jet ski, sailing...)	_
Other, please specify _____	_

7. Do you think diving damages the marine environment in some areas? Yes No I don't know

If yes, why?

- Too many divers
- Behaviour of some divers

The marine reserve

8. Before today, were you aware of the existence of the _____ marine reserve? Yes No
9. Have you previously dived in other marine reserves elsewhere? Yes No

10. Do you think that marine reserves have a positive impact on the marine environment? Yes No I don't know

11. Did the existence of the marine reserve influence your decision to dive here? Yes, a lot Yes, a little No

About you

12. Gender : Male Female
13. Year of birth? _____
14. Where do you live?
Country.....
Region/state/province.....
City/town.....
15. How many people live in the same household? _____

16. What is your **net monthly household income** (all taxes paid)?

- | | |
|---|--------------------------------------|
| <input type="checkbox"/> Less than 1200 € | <input type="checkbox"/> 1201–1800 € |
| <input type="checkbox"/> 1801–2400 € | <input type="checkbox"/> 2401–3600 € |
| <input type="checkbox"/> 3601–4800 € | <input type="checkbox"/> 4801–6000 € |
| <input type="checkbox"/> More than 6000 € | |

17. Are you a spear-fisher? Yes No

IF YOU ARE VISITING

18. How much was your decision to come to this region influenced by diving?
 Very much Moderately No influence
19. How many dives are you planning to do during this trip?

20. How many dives did you do in this region last year?
_____ **times**
21. What is your type of accommodation here?
 Rented house or apartment
 Your own house or apartment
 Hotel, hostel Camping
 Friends/family Other, please specify _____

22. How did you travel to this region?
 By car By ferry boat
 By plane Other, please specify _____
23. How many days do you intend to stay in this region?
_____ days
24. How many persons are travelling with you (living on the same budget)? _____ persons
25. What is the approximate total budget for your stay (including everyone travelling with you)? _____

Thank you!

ÉTUDE SUR LA FREQUENTATION DU SENTIER SOUS-MARIN DE LA RESERVE MARINE

Cette enquête est réalisée dans le cadre d'un programme de recherche sur les réserves marines, financé par l'Union européenne. Les réponses sont anonymes et confidentielles. Votre collaboration nous est précieuse. Pour en savoir plus sur ce projet, consultez le site

<http://www.um.es/empafish/>

Découverte du sentier sous-marin

1. Est-ce la première fois que vous venez sur le sentier sous-marin ?
 Oui Non

Si non, depuis quelle année? _____

Combien de fois par an, en moyenne, venez-vous ici ? _____

2. Etes-vous satisfait de votre randonnée aquatique ?
 Pas satisfait Moyennement satisfait
 Satisfait Très satisfait
3. Si vous en avez la possibilité, avez-vous l'intention de recommencer ?
 Oui Non Ne sais pas
4. Quel rôle les « outils pédagogiques » et l'encadrement proposés sur le sentier sous-marin ont-ils joué dans votre décision de venir ici ?
 Décisif Modéré Faible, voire nul
5. Avez-vous déjà visité d'autres sentiers sous-marins ?
 Oui Non
 Si oui, lesquels ? _____
6. Pratiquez-vous d'autres activités subaquatiques ?
 Randonnée aquatique (palmes, masque, tuba) en dehors du sentier
 Plongée en bouteille Apnée
 Chasse sous-marine Nage avec palme

7. Quels sont les 5 principaux critères de satisfaction de votre promenade sous marine ? Classez ces critères du plus important (1) au moins important (5).

	Rang
Transparence de l'eau (visibilité sous l'eau)	<input type="text"/>
Conditions météorologiques (soleil, température de l'eau...)	<input type="text"/>
Présence d'espèces emblématiques (loup, mérrou, dorade...)	<input type="text"/>
Abondance et diversité des poissons	<input type="text"/>
Beauté des paysages sous-marins (e.g. herbiers, failles...)	<input type="text"/>
Accessibilité / proximité du sentier sous marin	<input type="text"/>
Qualité de la prestation (accueil, organisation, encadrement...)	<input type="text"/>
Tranquillité et nombre restreint de visiteurs sur le sentier	<input type="text"/>
Site peu fréquenté par d'autres activités (pêche, jet ski ...)	<input type="text"/>
Informations reçues sur l'écosystème marin	<input type="text"/>
Autre, précisez _____	<input type="text"/>

8. Etes-vous venu ?
 Seul Avec des amis En famille
9. Pensez-vous que la pratique de la randonnée aquatique soit dans certains secteurs un facteur de perturbation de l'écosystème marin ?
 Oui Non Ne sais pas
 Si oui, pourquoi ?
 Trop de personnes sur les sites de plongée
 Comportement de certaines personnes

Les réserves marines

10. Avant aujourd'hui, connaissiez-vous l'existence de la réserve marine de.... ? Oui Non
11. Avez-vous déjà visité d'autres réserves marines ?
 Oui Non
 Si oui, lesquelles ? _____
12. Avez-vous le sentiment que les réserves marines ont un impact positif sur la qualité du milieu marin ?
 Oui Non Ne sais pas
13. Le statut de réserve marine a-t-il joué un rôle dans votre décision de venir ici ?
 Décisif Modéré Faible, voire nul

Vous

14. Vous êtes ? un homme une femme
15. Quelle est votre année de naissance ? _____
16. Quel est le lieu de votre résidence principale ?
 Pays..... Code postal / Région
 Commune.....
17. Combien de personnes vivent dans votre ménage (y compris vous) ? _____ **personnes**
18. Quel est le revenu mensuel de votre ménage ?
 moins de 1 200 € 1 201 – 1 800 €
 1 801 – 2 400 € 2 401 – 3 600 €
 3 601 – 4 800 € 4 801 – 6 000 €
 plus de 6 000 €

SI VOUS ETES DE PASSAGE :

19. Quel rôle la randonnée aquatique a-t-elle joué dans votre décision de venir ici ?
 Décisif Modéré Faible, voire nul
20. Combien de randonnées aquatiques avez-vous l'intention de réaliser pendant votre séjour ici ? _____
21. Combien de randonnée aquatique avez-vous faites dans cette région l'an dernier ? _____
22. Comment êtes-vous logé ?
 Hôtel Camping Location
 Résidence secondaire Amis ou parents
 Autre (préciser) _____
23. Comment êtes-vous venu ici ?
 Voiture Avion Train
 Autre (préciser) _____
24. Quelle est la durée de votre séjour ici ? _____ **jours**
25. Combien de personnes voyagent avec vous (sur le même budget) ? _____ **personnes**
26. Quel est approximativement le budget de votre séjour (pour l'ensemble des personnes, tout compris) ? _____ €

Merci de votre participation !



Research Group

Regulation of the Uses of the Marine and Coastal Resources and Ecosystems



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Groupement de Recherche

AMénagement des Usages des Ressources et des Ecosystèmes marins et littoraux

