

## **Desarrollo Sostenible de las Pesquerías Artesanales del Arco Atlántico**

**Analysis of socioeconomic diversification in  
the artisanal fisheries sector in the province of  
Cadiz.**

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# Analysis of socioeconomic diversification in the artisanal fisheries sector in the province of Cadiz.

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## **1. Introduction**

The situation that traditional fishing in general and in the province of Cadiz in particular is going through is delicate, as in addition to the general economic recession there are specific sector problems: on the supply side one of the main problems is the rising costs, especially energy, and the fact that the number of captures has been reduced at some fisheries, while as far as demand is concerned, the price of fish and the fall in income and consumption have had a negative effect on sectorial income.

The socioeconomic diversification of the fishing sector is understood as the development of a series of activities related to maritime culture that enable higher income for ship owners' and fishermen's families. It should be made clear that these activities should never be considered as a "substitute" for fishing, but should rather be seen as income that "complements" that obtained from fishing and which means that productive factors can be used in an honourable way (Chapela et al. 2011).

We think that this point is of vital importance, because productive factors remain in an economic sector provided that the cost of opportunity is "acceptable". If this cost, which is defined by the income gap, becomes "unacceptable", the productive factors, especially labour, search for employment in other sectors, and in extreme cases even opt for emigration. Whatever happens, it is clear that it is the disappearance of a great age-old tradition is a real possibility.

Just as has happened in other productive sectors, such as agriculture, fishing and maritime culture in general provide great possibilities for developing new related activities, which would make it possible to continue an activity which in some municipalities in the province of Cadiz affects a significant proportion of the population and is the base of a series of complementary industries and activities.

As has been pointed out, the possibilities for diversification are multiple (Fig. 1), going from the development of new activities related to maritime culture to the use of new products and improvements in the sales channel. However, the availability of information and knowledge of the sector mean that initiatives of this kind have only been started up on rare occasions, despite the fact that the results, according to the entities that have implemented them, were positive.

As an initial and essential step for the development of the “Socioeconomic Diversification” work group’s lines of action, one of the priority tasks was establishing contact with representatives from the fishing sector to take on the knowledge and problems they encounter when implementing socioeconomic diversification activities.

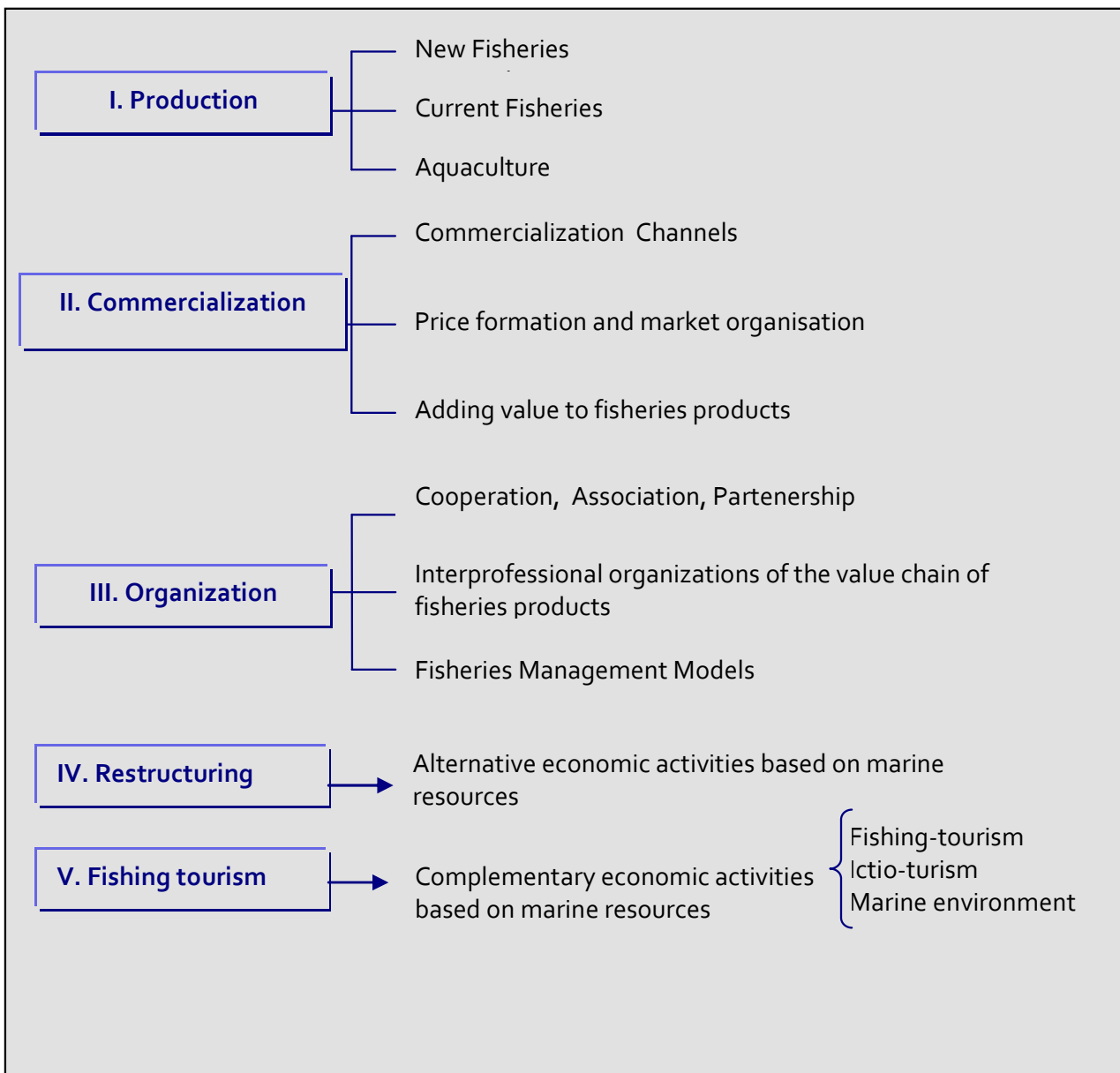


Figure 1. Axes of economic diversification in the fisheries sector.<sup>1</sup>

<sup>1</sup> Chapela et al. 2010.

## 2. Objectives

The main purpose of this report is to carry out fieldwork to study the different measures of diversification that have been carried out by entities in the sector, and to discover firsthand the problems involved in being able to implement this kind of activities. The interviews carried out have also served to publicise the project, and inform the sector representatives of the targets the project aims to fulfil, the need for their collaboration and the role that the PRESPO project can play as a forum with the European Union authorities.

## 3. Material and Methods

The fieldwork consisted of implementing two surveys, under the direction of CETMAR and drawn up in collaboration with the University of Cadiz. One of the questionnaires was designed for entities which have implemented an initiative for diversification ("with socioeconomic diversification") and the other for entities which have not ("no socioeconomic diversification").

The questionnaire for entities which had not implemented any activities for socioeconomic diversification consisted of three main blocks:

A-Block to identify the data of the association being interviewed, called "summary of basic data"

B-Block devoted to collecting information, subdivided into the following sections:

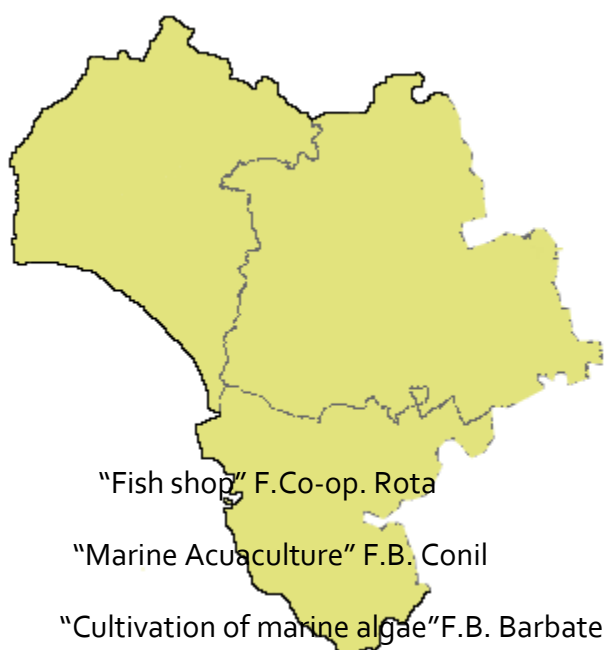
1. "General scenario" for the fishing sector, whose goal was to show the importance of the fishing sector at a local level.
2. "Critical scenario", which looks at the main problems of the sector and the actions considered most necessary to improve the sector.
3. "Hypothesis", a series of questions devoted to analysing the reasons brought forward for the lack of diversification activities in the fishing sector.
4. "Interaction of the fishing sector with other actions", to find out the degree of integration of the sector with other organisms, companies and projects to share information and generate solutions.

C-Final evaluation of the interviewees.

D-Observations.

Entities that were carrying out a diversification activity were given a specific questionnaire ("socioeconomic diversification"), in which the part of the questionnaire concerning the general and critical scenarios was the same and then they were asked about the evolution of the activity they were carrying out. the "Cofradías"

The surveys were aimed at the fishermen's associations<sup>2</sup> in the province of Cadiz. All the entities except for one took part, and so the results are representative of the whole. Seven of the ten associations had not carried out any diversification projects, while the other three had. Fig.3. We could add the "Interpretation Centre for the Almadraba" in Barbate, although it is not an action directly created by or linked to a fishermen's association. The questionnaire was filled in during meetings held with representatives from the associations, in which the chairman and secretary were usually present.



**Figure 2.** Fishermen's associations with diversification initiatives.

<sup>2</sup> There are different types of fishermen's associations, with their legal form; "Cofradia" is the most common of these.

### **3. Results**

As has been pointed out, three of the ten entities stated that they were carrying out diversification projects: in Conil de la Frontera with the case of fish farming, in Barbate with an experimental study for growing seaweed that is being carried out by the Fishermen's Cofradia, and in Rota for direct sales by the Fishermen's Cooperative by means of a fish shop located in the fishing harbour.

#### **3.1 General Scenario**

The general scenario shows that in the majority of municipalities fishing is the base on which the economy has grown, especially in areas like Barbate, Tarifa and Conil de la Frontera.

Significant changes have taken place in recent years, as coinciding with economic expansion and above all with the development of the construction sector, labour was transferred to this sector, especially in those municipalities where there was a significant building boom. This led to the aging of sector workers, both seafarers and ship owners, as young people preferred to find employment in other sectors: Narváez and Domínguez (2007).

Nevertheless, in recent meetings held with ship owners at the end of the project, they told us that the recession has led to young people coming back into the sector, especially the children of ship masters. They have come back to fishing as there are no opportunities for employment in other sectors.

#### **3.2 Critical Scenario**

The questions about the critical scenario gave rise to a very broad range of answers. They went beyond the field of diversification and attempted to express concern about the "low profitability in the sector, the crisis in the sector and poor perspectives for the future". They repeated traditional problems like low prices for fish at the market, the competition from other Mediterranean fisheries (because of the size of the catch), timetables, lack of aid, etc. There are other more recent problems like unfair competition from leisure poachers and the globalisation of markets (the incorporation of fish from third countries).

When we got down to sectorial diversification, they identified it with Fishing Tourism and to a lesser extent, with fish farming. As a general opinion, a significant proportion of people in charge do not see

that carrying out this kind of activity is necessarily a good idea. They have the necessary information, but they do not trust in current possibilities, no doubt due to the fact that they are new activities whose demand does not guarantee profitability.

Fishing associations in the area around the Straits of Gibraltar make special mention of the sailing conditions in the area for diversification activities related to fishing tourism. They point out that they might be interested in carrying out this kind of diversification activity, although the maritime and climate conditions make it difficult to put out to sea, which limits the feasibility of the projects.

In the Straits of Gibraltar there are companies that are not linked to the sector and which provide “whale spotting” services. We were also informed that there is a ship sailing under the Russian flag that is going to be specially adapted. There does therefore seem to be a demand for activities of this kind in the Straits.

We could classify the problems identified in two main groups: exogenous problems, which are those we cannot act upon, such as the special climate and sailing conditions in the straits, and those deriving from the project itself, the specific conditions of the association and on which we can act. Among these we could highlight the following:

#### *Economic-financial*

Starting up any activity depends on the existence of a potential profitability. Interviewees pointed out that they have no guarantees that after investing in a diversification activity (for example specially adapting a boat exclusively for tourism fishing) it will generate profits. There is an additional problem, which is “less profits from fishing”. They pointed out that in order to have the money they would have to find sources of financing, normally a bank loan, or aid and subsidies from public institutions. The former option is complicated nowadays, given the current situation of the Spanish banking system.

As for the latter, they say that there is aid and they are aware of it, but they also state that the bureaucratic procedures are very complex. Any kind of activity that requires applying for financial aid is highly complex.



### Legal

In the opinion of the interviewees, maritime safety regulations would force them to completely change their boat's structure and classification, which would complicate any kind of "individual diversification", i.e. a ship owner who of his own will wishes to carry out this kind of activity. For the short term, it would be more profitable for the association or Cofradia to expressly separate a boat for this purpose.

### Training in new skills

The workers in this sector are very well trained to catch fish and have attended numerous courses that are directly applicable to the sector. However, they are not trained to carry out new activities, which for example in the case of tourism fishing, require very different skills. In relation to the above, they pointed out that there are legal obstacles when it comes to adapting their certificate as fishing skipper to this kind of activity, even for leisure sailing.

### The development of tourism infrastructures

In regard to tourism fishing, they state that for this kind of activity to be successful, there should be greater provincial tourism development so that tourists who come to spend their holidays become "potential clients". However, in the opinion of the interviewees, the development of tourism infrastructures is insufficient.

### Actions and solutions

In the opinion of the interviewees, the solution to the economic and financial part consists of guaranteeing a return on their investment. As is to be expected, in a sector with low profits and a relatively old population, their expectations are not particularly encouraging, and any kind of investment in an economic activity implies a risk that they would initially only be willing to take if there are guarantees of success. Hence they demand greater aid and the simplification of bureaucratic procedures.

As for the "legal" problems, all the interviewees highlighted the need to respect maritime safety conditions, although current legislation makes it economically unfeasible to transform a boat for tourism fishing on a seasonal basis. In order to do this it would be necessary to modify current legislation on safety.

As for training courses, they insisted that these diversification activities require specific training courses for the needs of the diversification activity in question.

As for local economic development, they highlighted the great value that the specific figure of an agent for fishing and local development would have.

### **3.3 Hypothesis**

The purpose of the first group of questions is to find out the status of the sector and see if diversification would be a good alternative. The majority of interviewees agree that fishing is going through a crisis, although some state that diversification could partially alleviate the problem. In effect, 60 per cent of the interviewees pointed out that the sentence "the situation of the sector is good" is a "most improbable" statement, and the rest, the other 40 per cent, tell us that it is scarcely probable. However, when they are asked about the role diversification could play, 60 per cent said that it could probably be a solution for the sector. (Fig. 3).

The purpose of the second block of questions was to discover the possibilities of diversification and to see if the sector is capable of implementing it. A 60 per cent of the associations said they are aware of it, although they do not have the necessary training to take it on, questioning the capacity of ship owners to become entrepreneurs in a new kind of complementary activity. As for ship owners' dynamics and business character, 50 per cent think that there are dynamic vessel owners who are willing to take on a new activity, although a significant percentage are convinced that they do not have what it takes outside the world of fishing: 20 per cent of the interviewees. (Fig. 3).

Finally, within this block of questions, we would still have to analyse the role played by the public sector. Initially, there seems to be a certain contradiction between the answers about public support and the existence of public aid, as they generally complain that the public authorities do not support diversification - 70 per cent - while 60 per cent admit that there is public aid. (Fig. 3).

Going somewhat deeper into the answers about the role of the public sector, what they really complain about is that even though there is aid, the methods for obtaining and managing it are not sufficiently supported by the regional institutions. Among the reasons wielded in the questionnaires, and which we have referred to throughout this study, we could highlight the following:

- bureaucratic procedures seem excessively complicated
- maritime safety regulations are excessively strict
- specific training for diversification is needed
- improve information about the possibilities for diversification (which in some cases seems to be limited exclusively to tourism fishing, etc.)

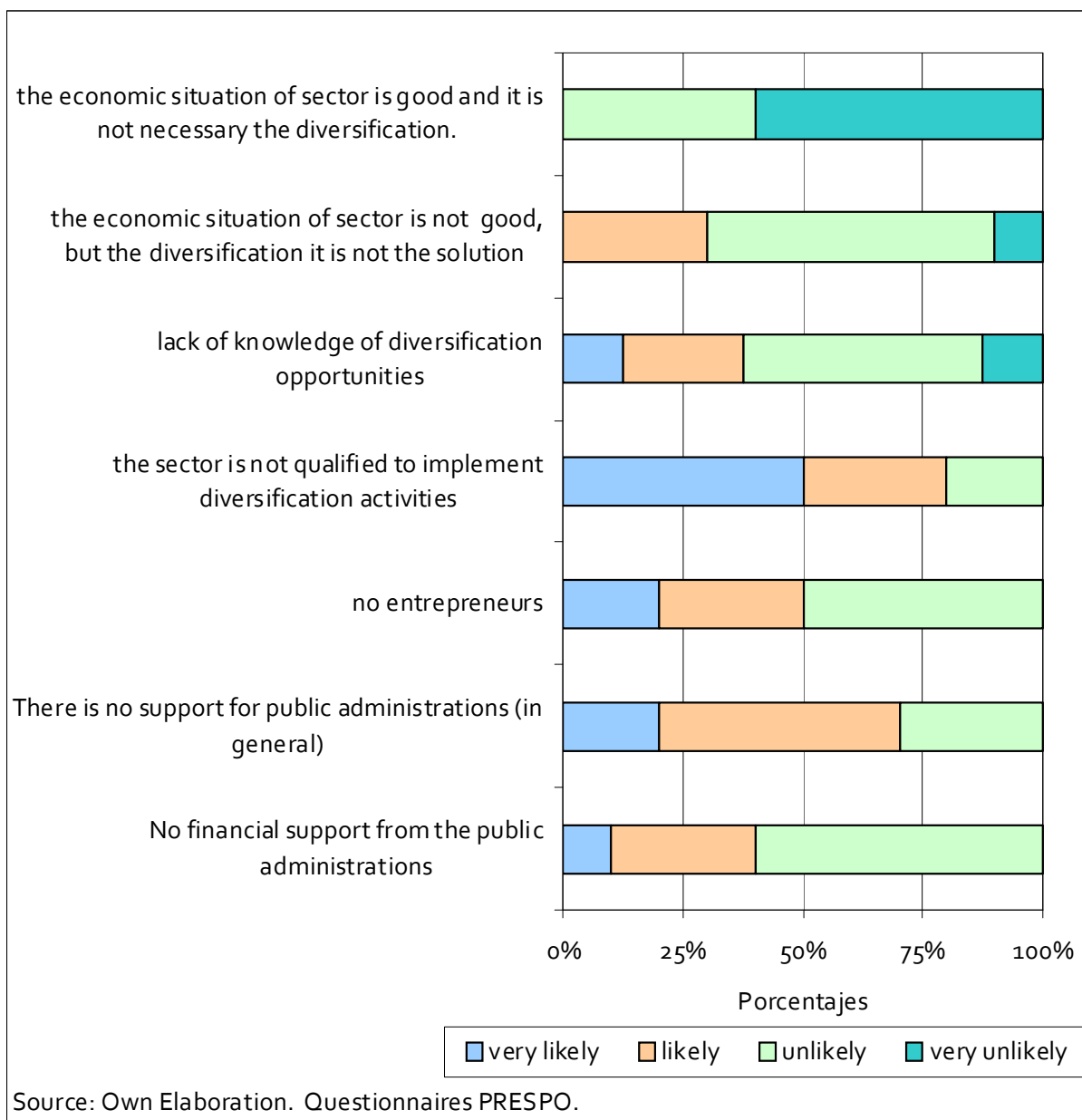


Figure 3. Opinion of the associations: status of the sector and the possibilities of diversification.

### 3.4 Interaction of the fishing sector with other actions

As for the interaction of the fishing sector with other actions we should point out that the answers given are characterised by their great homogeneity. As a summary we could point out the following (Fig. 4):

- In general, companies do not participate with other entities outside the sector, except for some associations which occasionally take on interns.
- They do have relations with public institutions. In most cases they are consultants.
- Low level of involvement with private companies, except in the case of entities which run fresh fish markets or have relations with exporters.
- As for technological innovation, they all incorporate the advances of other sectors, mainly those applied to fishing boats and the computerised management of fish markets.
- Low level of interaction with other R&D&i projects, except for diversification projects in collaboration with other agents.
- Low level of interaction with European projects.

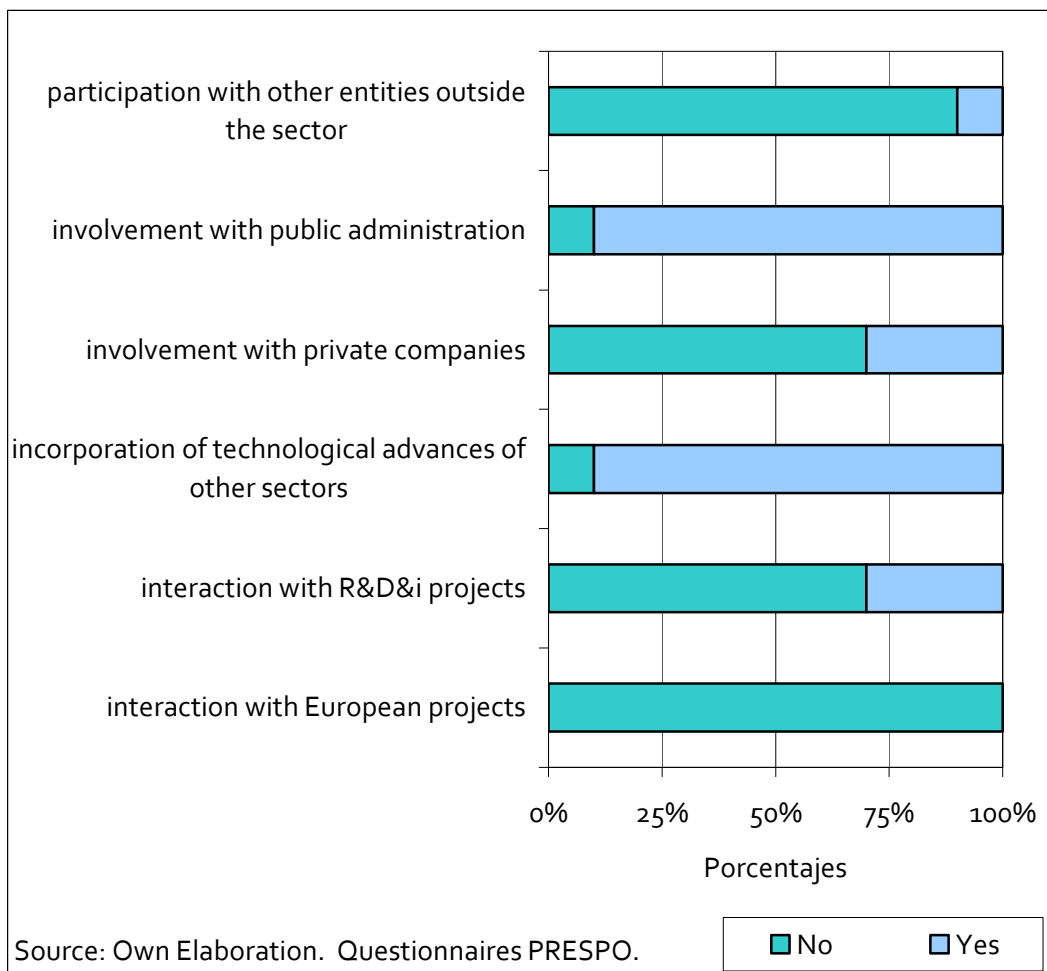


Figure 4. Opinion of the associations: the interaction of the fishing sector with other actions.

### **3.5 Final evaluation of the interviewees and Observations of the questionnaires.**

In relation to the general assessment of interviewees, all of them highlight the importance of sharing experiences in the field of diversification. As for specific proposals, they repeated what was said in previous sections, mainly in actions and mechanisms. Nevertheless, there were various contributions of interest:

- Finding the figure of an agent who is directly involved and capable of informing people and helping in setting up projects.
- Setting up and starting up groups of fishing development.
- Flexibility and simplification of the regulations.
- Identifying activities that can really be carried out and do not remain as just projects. There should be a feasibility study and financing plans that are realistic for family businesses with little economic leverage. Once all this is established there should be tests to prove said feasibility and profitability as this is the only way to convince the sector of the advantages of diversification, but always with realistic ideas.
- Given that tourism-leisure is one of the options for tourism zones, it is necessary to promote the activity with the legal changes that respect tourists' safety but that also allow for profitability for the ship owners who diversify. Public financing is necessary for the cost of transformation.
- They also suggested direct sales as a possibility (commercial optimisation); they also pointed out, however, the problems with the port authority and with the Regional Government of Andalusia related to the fees to pay for use of the fresh fish market.

## 4. Characterisation of the initiatives

As has been said, three initiatives of diversification in the province of Cadiz have been identified. One of them is linked to commercialization (Rota Fish Shop), other to the development of new products and the last one is related to aquaculture. Below we highlight the most important.

### **Commercialization: Sales Initiative.**

#### ***Fishermen Cooperative of Rota: "Fish Shop"***

The fish shop belonging to the Cooperative of Rota dates back to the first years after the foundation of this entity. It was born of members' own desire to defend the price of fish against wholesalers and increase employment and income for families who make their living from fishing.

Initially, the financial needs were not very high, similar to any other fish selling business. Nevertheless, they have had to take on new investments to adapt and improve their facilities.

The fishery plays an important role in improving income for fishermen and their families. They can withdraw fish whose price they think has not reached an acceptable level and sell it in their shop fish. This also means they keep the middleman's margin. As for employment, they provide work for seven women, relatives of members.

The experience is positive and they plan to open a cookery, which would imply further investment. They have applied for aid for this. Furthermore, the co-operative management shares the desire for members to become involved in new projects related to new technologies, as would be the case of feeding refrigeration machines with clean energies. As for the integration of this activity with fishing, we have been told that they could sell approximately 20 per cent of what is auctioned at the fish market.

## **New products**

***Fishermen's Cofradia of Barbate: "Study of the biodiversity of marine flora in Barbate with commercial feasibility".***

The purpose of this study of the biodiversity of macro-seaweed and its abundance (species and quantity) is to determine feasible growing areas with the greatest abundance of biomass for species with a viable commercial future. It was drawn up by a team of biologists (four women), whose previous research has won various awards. The team was supported by a research group from the University of Cadiz, "The Structure and Dynamics of Water Ecosystems".

The project is seen as the beginning of a macro-project, to be implemented in the longer term and whose end goal will be the growing, harvesting, handling and sale of seaweed, generating profits for fishing communities who could then devote part of their time to harvesting in the marine facilities and at the same time, generating a series of jobs on land.

The production obtained is grown to be sold, initially covering the current demand of the market, and as a challenge, to increase the supply. The project would have an induced effect on auxiliary companies such as tinning, transport, fishing material suppliers and of course, the participation of the municipality's fishing fleet. Labour would be hired for the necessary work in the facilities.

This project was presented to the Fishermen's Cofradia of Barbate. The Cofradia, when carrying out its functions, promotes and boosts initiatives that lead to improvements for the sector it represents; likewise, its function to "advise its members about actions derived from the application of the regulations concerning the fishing sector, and in particular, about aid, subsidies and programmes set up by the Public Authorities" is specifically expressed (clause 3 (g)).

The Cofradia believes that this project, based on the study of seaweed and its commercial possibilities, could be important for the future of the fishing sector, as it is based on knowledge, experience and qualified labour, without forgetting the other important part of the study – sales. The necessary facilities and sales lines, so important for the success of a project of this kind, are available in Barbate. To this we could add the fact that it is a project committed to sustainability and the preservation of marine resources.

During the first phase a series of interventions would be carried out, for which E.F.F. funds are available. No investment in infrastructures is planned for the first phase. It would be for the second, as for example, growing lines would have to be installed in the sea. The Cofradia's contribution is valuable administrative help and the experience of the crews.



**Figure 5.** Cultivation of seaweed

### **Production Initiative**

#### ***Fishermen's Cofradia of Conil de la Frontera: "Marine Aquaculture Project"***

The implementation of this project obeys to problems common to the rest of the sector: decrease income, unfavourable evolution of prices and catches. The main aim is increasing the sector's revenues supplemented by aquaculture. Vessels are expected to increase their work days: when they can go fishing, can engage the tasks associated with marine aquaculture. It was a pioneering project of offshore aquaculture, with cages four miles from the coast.

These conditions make it a project with high financial need due to the cost of the conversion vessels, training and human resource requirements and infrastructure. The project is developed in two phases, with the following contributions of funds:



I.F.O.P. (aprox)

Phase I 1,4 millions Euros (2006-08)

Phase II 3,6 millions Euros (2007-08)

Finished the project, the initiative had to go to private firms or the Cofradia of Conil took over the project. We chose the latter option and the Cofradia has a period of 18 months to take over.

The Cofradia has created eight direct jobs, of which 2 are women. Estimates of the project manager, once launched, could be operating between 15 and 24 vessels, The estimate of the rent increases would be around 30 per cent.

This activity will integrate perfectly with fish, as only "change task" of vessels, it is not possible to go fishing (weather conditions, closures, etc). According to estimates by the management, go fishing vessels average 100 days, and with this project could be extended to 140 days. For this project we have done different jobs training: technical training and specific aquaculture, received by 59 fishermen.

## **5. Conclusions**

As a general remark, the sector is aware of the need to improve its income and find complementary revenue given the current perspectives and the uncertainty about future agreements and policies in the sector. However, in general they have only ever carried out activities related to fishing and so they are resistant to the development of other business practices in which they have no experience and which are new to them; there are no tangible previous results and so they perceive it as an economic risk.

The general problems for not diversifying were discussed by the interviewees themselves:

1. Economic and financial
2. Legal
3. Training
4. Bureaucratic complexity

We could add others which should be taken into account and debated, such as:

1. The age of fishermen.
2. Lack of knowledge in the sector about successful experiences.
3. Aversion to risk.
4. Lack of local development in certain municipalities.

We should, nevertheless, highlight the sensitivity and receptivity for "Tourism Fishing" as an alternative for diversification, above all in the north-west of Cadiz. There are, however, difficulties which hinder development. Among them we could highlight legal and economic problems: the seasonal adaptation of boats would be practically impossible from an economic point of view. We have already mentioned the possibility of leaving one boat exclusively for this activity, which is how they would agree to carry out the project. The opinion is positive, but they would require further information on profitability and potential demand, together with specific training for the crew and auxiliary services.

Other more ambitious projects, such as marine aquaculture, would be taken into account although they are not particularly attractive given the high financial and technical costs. They have the example of the marine aquaculture project in Conil. There are projects they know nothing about, and which even surprise them, such as the case of seaweed growing in Barbate. As a very positive diversification experience we should mention the fishery started up by fishermen's co-operative in Rota.

## Acknowledgements

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