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Desarrollo sostenible de las pesquerías artesanales en el Arco Atlántico

What commercial potential for eco-labeled fishing products? Expectations and consumer behaviors

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Activity 5

Commercial optimization

What commercial potential for eco-labeled fishing products?

Expectations and consumers behaviors

Eco-label survey, PRESPO project

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Coordination:

Partners:

1. Introduction

In Europe, eco-labels[1] are spreading in many areas and fishing products are no exception to this trend. Several fisheries have developed eco-labeling approaches, and the supply for "sustainable" labeled products is growing. This development has been observed since 2005, mainly led by some North of Europe countries and under the influence of large distributor chains, mostly with processed products. With this in mind, the question asked by commercialization operators concerns the commercial potential of eco-labeling applied to artisanal fisheries in the Atlantic area, as mechanism of adding value and commercial optimization.

This study examines the following questions: <u>Is this "green" products demand concerning fresh sold artisanal fishing products? What is the current trend in the southern countries of Europe?</u>

The present eco-label survey, coordinated by RICEP in the framework of PRESPO project activity 5, aims to describe expectations and consumers behaviors concerning fishing products who certify environment respectful practices[2]. Fishing products demand is influenced by a combination of criteria. Number of criteria and priorities vary according to products presentation, species and countries. Among these criteria are including dietary requirements, organoleptic criteria, presentation, products origin and environment respect. Due to the diversity of situations in Europe, it is not systematically possible to prioritize these criteria.

The survey has been conducted in France and Spain two Latin countries that are major consumers of fishing products in Europe. Some questions have concerned notably pilot species, selected on some criteria coherent with eco-labeling approach.

1 According to the EU, an eco-label is based on the consideration of the product life cycle from raw materials extraction, of raw materials, manufacturing, distribution, and use to recycling or disposal after use (Regulation (CEE) N ° 880/92).
2 The concept of "sustainable fisheries" is broader because it includes, beyond the environmental criteria, economic and social criteria.

2. Objectives

This study, based on a consumer's survey developed in France and in Spain by partners of the PRESPO project, aims to evaluate the **commercial potential of an eco-label applied to artisanal fishing products.** The proposed survey focuses on expectations and buying behaviors of consumers concerning artisanal fishing products. The study concerns essentially fresh commercialized fishing products.

3. Expected results

The study should provide:

- Describing purchasing behaviors for fresh sold artisanal fishing products;
- Measuring purchase intention and assess the willingness to pay for an eco-labeled fishing product. The questions will focus on pilot species selected by PRESPO partners, whose characteristics meet the eligibility criteria of an eco-label. Results should be operational and capable of leading to concrete actions in terms of fisheries / species certification;
- Comparing the results obtained in France and Spain.

4. Methodology

Activity 5 "Commercial optimization" of PRESPO project focuses on the identification of mechanisms to add value to artisanal fisheries products of the Atlantic area. The areas of work, including the present study on eco-labeling, were identified with upstream and downstream stakeholders of the commercialization chain to meet their expectations and needs. RICEP, together with partners in activity 5, has coordinated the implementation of the survey work on eco-labeling to meet the objectives described above.

4.1. Bibliography

The bibliography is divided into two types of documents:

- Technical documentation for use by managers and professional structures (for example: methodological guidelines for the establishment of eco-labeling approaches, definition of eligibility criteria, etc). This bibliography is registered online at the site of Atlantic projects. It has allowed some partners of the survey to select the pilot fishery or species, selection based on eligibility criteria identified;

- Scientific documentation, including on the analysis of consumer behavior and willingness to pay for green products (see Annex Bibliography).

4.2. Selection of eco-label survey pilot species

The choice of pilot species for the eco-label survey has focused on artisanal fisheries species of Atlantic area, which are strategic from a socio-economic point of view for commercialization stakeholders and market places. Moreover the adding value potential, considering a product differentiation as eco-labeling, was also considered, notably on the basis of the opinions of commercialization operators involved in the project. Partners of the survey have selected one or several pilot fishery(s) and species, on which the survey focuses:

France:

- Common sole (*Solea vulgaris vulgaris*)
- Anglerfish (*Lophius piscatorius*)
- Nephrops (*Nephrops norvegicus*)

} distributed at the national level

Spain:

- Anchovy of barbate (*Engraulis engrasilocus*) distributed at the national level
- Octopus (*Octopus vulgaris*) distributed in Galicia
- Shrimp (*Parapenaeus longirostris*) distributed in Andalusia

4.3. Preliminary survey

A preliminary survey has been conducted in France and Spain with two small samples of 50 consumers. The objective of this preliminary survey, based on open questions concerning the "labels" in the broad sense of the word, was to determine the criteria corresponding to the expectations of consumers when they are talking about an eco-label applied to fishing products.

The preliminary survey has shown a very confused knowledge of "labels" and "brands" (in the broad sense of both terms) affixed to food products, as well as ignorance of the existence of marine products distinguished by a quality label, except a few one that are well-known and that were cited by a handful of consumers (mussels from Mont Saint-Michel, mussels from Galicia, Label Rouge salmon).

Paradoxically, consumers are expecting well-affirmed guarantees when they buy a labeled food product, especially for seafood.

On the basis of guarantees expected by consumers when purchasing a seafood product, the results of this preliminary survey have led to the adoption of the three following definitions:

"Eco-label": label guaranteeing the use of environmentally and marine resources friendly techniques during fishing and packaging of products;

"Health label": label ensuring that products do not contain toxic substances harmful to health;

"Fair trade label": label that guarantees a minimum income and decent working conditions to producers.

4.4. Survey sampling

Three surveys have targeted seafood consumers, at the French and Spanish national level, and also at the Galician regional level. A fourth survey has targeted wholesalers of shrimp in Andalusia: indeed, knowledge of products and markets allows them to anticipate changes in consumer demand and expectations of particular environmental issues. The population which has been studied is composed of all the wholesalers who are devoted to the shrimp trade in Andalusia. 57 wholesalers out of 73 wholesalers who are devoted to the trade of this crustacean in this region were interviewed (Table 1). The answer rate amounts to 78.08%.

Table 1. Reference populations and samples size.

Country	PRESPO Project partner	Reference population	Sample size
FRANCE	RICEP/AGLIA	French national consumers	911 interviews
SPAIN	University of Cadiz	Spanish national consumers	437 interviews
	CETMAR	Galician regional consumers	335 interviews
	University of Huelva	Wholesalers of Andalusia specialized in the shrimp trade	57 wholesalers interviewed out of 73

Except for this last survey with a different target population, the sampling plan was based on several socio-demographic criteria in order to obtain representative samples of reference populations (quota method):

- Coastal / Non-coastal population:

France Agrimer Consumers panel show clearly regional differences in consumption patterns of aquatic products. These differences are related to multiple social and cultural factors which detailed analysis is not directly the subject of this study. However, in order to measure the influence of factors on the demand and willingness to pay for labeled products, we have distinguished coastal and non-coastal populations. For the two national surveys in France and Spain, coastal cities are defined as towns belonging to coastal departments. For the regional survey in Galicia and according to its reduced geographical size, coastal cities are those that are by the sea, non-coastal cities are those that are interior and landlocked.

- Size of residence city:

Four categories of cities have been considered:

- Very large cities (over 500,000 inhabitants);
- Big cities (from 100,000 to less than 500 000 inhabitants);
- Medium-sized cities (from 5000 to less than 100 000 inhabitants);
- Rural cities (less than 5000 inhabitants).

- Age distribution:

Following categories have been considered:

- from 15 to 25 years old;
- from 26 to 45 years old;
- from 46 to 65 years old;
- 66 years old and more.

- Socio-professional categories:

The socio-professional categories as defined in the French and Spanish nomenclatures are hardly comparable. The construction of two representative samples respectively of the French population and the Spanish population was based on data from national statistics institutes (INSEE for France and INE for Spain), using French nomenclature for on one side and Spanish to other (see Annex 2).

- Gender distribution:

The gender distribution of samples follows the gender distribution of target population.

4.5. Questionnaire structure

The questionnaire was developed in order to avoid any influence on respondents. The questionnaire is divided into several large parts, some of which, a version of the questionnaire to another, have been inverted.

- Introduction: neutral with respect to the objectives of the study;
- Perception of professional fishing;
- Perception of seafood;
- Consumption and purchase of seafood.

The three parts above are used to characterize the interviewee about his knowledge of fishing sector, of seafood, and about his consuming habits (types of products consumed, place of consumption, purchase frequency, purchase criteria, etc).

- Labels: expectations and purchase intention

The questions focus on the three labels defined as a result of the preliminary survey (see § 1.3): This part focuses on purchase intentions for labeled products which price remains the same as the standard product.

- Labels: willingness to pay

This part of the questionnaire is specific to pilot species (Table 2). Willingness to pay is the maximum amount that a person is willing to pay to buy a product: the questions which follow correspond to the method of dichotomous analysis or willingness to pay contingent valuation method schematized below (Figure 1).

Table 2. Pilot species and standard products prices.

Country	Pilot species	Starting price of the standard product
France	Sole	21.6 Euros/kg
	Anglerfish	18.8 Euros/kg
	Nephrops	15.8 Euros/kg
Spain	Anchovy of Barbate	5 Euros/kg
Spain / Galicia	Octopus	6 Euros/kg
Spain / Andalusia	Shrimp	6 Euros/kg

The starting price is the average consumer price. It is considered as the price of the standard product, that is to say the product without a label. The questionnaire proposes an initial increase X of the price for a labeled product: the interviewee can answer "yes" if willing to buy the labeled product at the higher price, or "no" otherwise. Depending on the giving answer, the questionnaire proposes a new value Y of price increase, higher than the first X if the giving answer was "yes", if not lower. Three successive values of increase {X, Y, Z} are proposed.

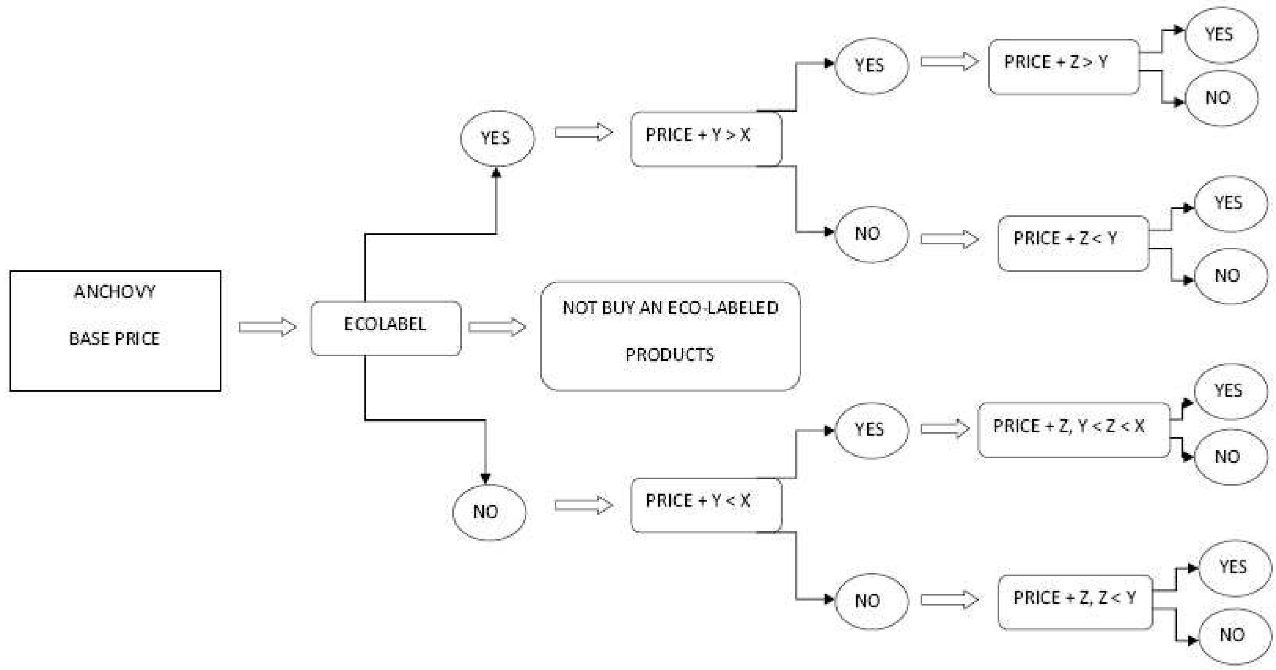

Figure 1. Schematic of the dichotomous analysis applied to the Anchovy of Barbate pilot species.

- Socio-demographic characteristics of interview (including the criteria corresponding to the sampling plan: city of residence, age, SPC, etc);
- Conclusion: thanks.

Note that the survey from the University of Huelva, which has targeted the wholesalers of shrimp in Andalusia, has adopted the same questionnaire by adapting questions to the survey reference population.

4.6. Processing of the questionnaire

Consumers' surveys were conducted face to face, in neutral places considering seafood consumption or purchase, in order to:

- Maximize the response rate;
- Follow as and when the sampling plan;
- Have a better quality of collected data (preliminary phase of interviewers' training);
- Avoid bias due to the type of place of purchase (traditional fish market versus supermarket) and as well due to the time of purchase (interview before purchase or after).

5. Results

5.1. Purchase criteria

✓ Question: **When you buy fresh seafood, your choice is based on:** *(Depending on your usual purchase criteria, note 1 – totally false to 10 – totally true, the following proposals by placing a cross on the rule)*

The criteria for buying fresh seafood were analyzed from ten proposals:

Two main purchase criteria are prevalent (see Table 3 below): the visual appearance / freshness of the product appears first (average score = 8.10 / 10), followed by the sale price (average score = 7.79 / 10). If French consumers tell they are as attentive to the first criteria as to the second, Spanish consumers show clearly their attention to the freshness of the product first.

Table 3. Seafood purchase criteria by French and Spanish consumers.
(Notes from 1 – Totally false to 10 – Totally true)

Seafood purchase criteria	France		Spain		Galicia	
	Note /10	Rank	Note /10	Rank	Note /10	Rank
Visual appearance / freshness	7.84	1	8.49	1	8.81	1
Sale price	7.83	2	7.85	2	8.05	2
Production mode (wild-caught or aquaculture)	4.43	5	4.07	8	6.67	4
Geographical origin	3.77	6	4.28	7	6.69	5
Availability of the resource / state of stock	3.12	9	2.33	10	2.3	10
Type of presentation	6.36	3	6.24	4	3.94	8
Fishing gear	2.25	10	2.46	9	2.54	9
Reputation of products	3.15	8	4.84	6	4.68	7
Seller advice	3.55	7	5.27	5	5.54	6
Nutritional qualities	5.39	4	7.27	3	7.64	3

Source: Eco-label survey, PRESPO Project

French and Spanish consumers say they pay attention to the nutritional quality and the presentation of the product (whole fish, fillets, etc). The attention paid to the nutritional quality, higher among Spanish consumers, guides certainly the choice of a product to stand over another (lean fish versus oily fish rich in Omega 3 for example), but also influences upstream in the intention to buy fish instead of meat. Spanish consumers trust the seller and rely on his advice at the time of purchase. This is not the case of French consumers.

In Galicia, the mode of production (wild versus aquaculture) as well as the geographical origin, are important purchase criteria. This specificity across a coastal area where the maritime culture is firmly rooted, is not reflected at the national level, in Spain or in France, where the presentation of the product is more important. Galician people should have a better knowledge of fishing sector, they also pay attention to buy local products.

In Galicia, the mode of production (wild versus aquaculture) as well as the geographical origin, are important purchase criteria. This specificity across a coastal area where the maritime culture is firmly rooted, is not reflected at the national level, in Spain or in France, where the presentation of the product is more important. The importance given by Galician people to the mode of production is a consequence of the high presence of aquaculture enterprises in Galicia. Fishing products are known for having a better quality compared to aquaculture products. Galician people also pay attention to buy local products.

Spanish and French consumers do not seem to be aware of the fishing technique or the state of stocks. If we look at the purchase criteria of shrimp wholesalers in Andalusia, it is interesting to note that all the mentioned purchase criteria have scored above 5 / 10. We find the freshness and price as key purchase criteria. But the wholesalers are also mindful of the mode of production, geographic origin and the state of stocks. There are certainly other criteria that may return to play, as experience working with some producers, customers' expectations in terms of volume and quality.

5.2. Labels and purchase intention

✓ Question: **If you had to buy fresh fish and if you had the choice between the four following types of products <u>at the same price</u>, which one will you choose:** *(Cross the response of your choice)*

Respondents are placed in the real situation of buying fresh fish and they must make a unique choice between four products with the same price: a standard product, a health-labeled product, an eco-labeled product and a fair-labeled product (Table 4). The definitions of the three labels are again specified in the question.

Table 4. Labeled products and buying intention by French and Spanish consumers.

Labels and purchase intentions	France	Spain	Galicia
Health label	40%	64%	68%
Eco-label	31%	19%	19%
Fair trade label	23%	11%	12%
Standard fish	6%	6%	1%

Source: Eco-label survey, PRESPO Project

In Spain as in France, the health label is chosen by a majority of consumers:

- In Spain 2 of 3 customers choose a fish that guarantees the absence of harmful substances. This is interesting to see that 1 of 2 wholesalers of shrimp in Andalusia has chosen the health label;
- In France consumers are 2 of 5 consumers to choose health label.

This "health" guarantee, as defined in the eco-label PRESPO survey, is indeed emerged as a major expectation of a sample of consumers interviewed in the preliminary survey. The chosen definition is not talking about nutritional quality, intrinsic to the fish itself and its composition. In general, nutritionists recommend eating "fish" or even propose a distinction between oily fish rich in omega 3 and lean fish, but the composition of product is not a discriminating criterion in the choice of a fish rather than another, unlike the meat. Here the consumers who choose the health-labeled fish are more concerned by health risks of eating fish as widely accepted dietary benefits. This result may be explained by the fact that these risks for health are often in the front of the media scene (PCBs, mercury, etc).

Environmental consideration is second after health. These are 3 of 10 French consumers, and 2 of 10 Spanish consumers, who choose a fish that warrants the use of environmentally and marine resources friendly techniques. 1 of 10 wholesalers of shrimp in Andalusia has chosen the eco-label. Finally, the fair-trade consideration arouses the interest of 2 of 10 French consumers, and 1 of 10 Spanish consumers.

The health label is chosen by most of the wholesalers of shrimp in Andalusia (1 of 2 wholesalers). Also, it is interesting to note that they are more attentive to the fair-trade label than Spanish consumers (2 of 10 wholesalers have chosen this label). Proximity to producers, and also the desire to provide good image during the survey, may explain this percentage. 6% of consumers, French and Spanish combined, would choose a standard fish, i.e. without any label, because they think that labels are not credible or that the quality attributes of standard fish is suitable for them.

- ✓ Question: **If these following labels were proposed for fresh seafood, you would prefer:** *(Cross proposal(s) corresponding to your preference(s). If they are several, prioritize them from 1- more important to 3 – least important to you)*

Respondents have to select and prioritize labeled products that match their preferences. They have the possibility to choose only one product or several. The answers, according to the rank assigned to each of the three labels (Table 5), were used to calculate a preference weighted index (PWI) per label, whose formula is:

PWI label i= [(3 * % of yes at rank 1) + (2 * % de yes at rank 2) + (1 * % de yes at rank 3] /3

Table 5. Preference weighted index of French and Spanish consumers.

Labels and consumers preference	France	Spain	Galicia
PWI Health label	73.60	87.00	89.84
PWI Eco-label	73.20	68.60	67.06
PWI Fair trade label	62.30	58.00	51.86

Source: Eco-label survey, PRESPO Project

In France, the health label and the eco-label PWI are very close (difference of 0.4 point): the people who have selected the eco-labeled fish have rather set it as second choice. In Spain, the health label is most often given as first choice, resulting in a marked difference of PWI with the eco-label (difference of 20.6 points). For the wholesalers of shrimp in Andalusia, health label PWI is the highest; it is equal to 76.6%. It is followed by the eco-label WPI which is 69.6%. Finally, the fair-trade WPI is the lowest one with a value equal to 53.8%.

5.3. Characteristics of pro-eco-label consumers

Two sets of determinants can be used to explain the supply of labeled products: socio-demographic characteristics and consumption behavior (Table 6). Several successive treatments (correlation matrices and econometric modeling) have been used to analyze the supply for eco-labeled seafood and to compare it to that of health or fair trade labeled products.

Table 6. Characteristics of pro-eco-label French and Spanish consumers.

Socio-demographic characteristics	France	Spain	Galicia
Education level	High level graduate studies	High level graduate studies	Second level graduate studies
Socio-professional category	Executive and intermediate occupations	Specialized services	Intermediate occupations
Age	26 to 45 years old	26 to 45 years old	26 to 45 years old
Coastal / Non-coastal area	Coastal	-	Non coastal
Gender	Men	-	-
Family situation	-	Households of 3 people and more	-
Food budget	More than 450 Euros per month	-	-
Size of residence city	-	Medium-sized cities	Medium-sized cities
Seafood consumption behavior	**France**	**Spain**	**Galicia**
Purchase place	Traditional markets	-	-
Regularly seafood products purchased	Smoked salmon	Canning, fish soups	Frozen prepared
Attention paid to / Process? Or Product?	Process: - Judgment less favorable to fishing sector - Seafood deemed to be affordable	Process: - Fishing damages the sea bottom	Process: - Judgment less favorable to fishing sector - Seafood not easy to cook
Planned or impulsive purchases?	Purchases depending on the offer	-	-
Average basket?	12.6 Euros	26.62	23.04 Euros

Source: Eco-label survey, PRESPO Project

Some characteristics, common to the French and Spanish pro-eco-label consumers, emerge as decisive in the choice of eco-labeled products. We find in particular:

- **A high level of education;**
- **A middle-category age:** pro-eco-label consumers are part of the 25-46 years old category; they are mature people, often already working and ready to pay more for purchasing quality food products. In their choice, they are more attentive to environmental issues than younger or older people. In France, consumers under 25 years old have a food budget of less than 200 Euros a month, they do their shopping in supermarkets and it is above the price that determines their choice at the time of purchase. In Galicia consumers under 25 years old are a heterogeneous group that not usually buy fishery products, being their families who buy these products. Moreover, those who buy these products have rents under 1.000€, so they are very sensitive to price increases. In addition, older consumers, perhaps less aware of environmental issues than younger generations, are more attentive to matters relating to their health;
- **Process products consumers:** seafood products commonly consumed by pro-eco-label consumers are processed products: smoked salmon for French, canning or soups in Spain, and frozen meals in Galicia where pro-eco-label consumers find that fishing products are difficult to cook;
- **A negative perception of fishing sector:** fishing is rather badly perceived by the pro-eco-label consumers, whether French or Spanish. Here we find consumers who are more attentive to the process characteristics (geographical origin, production method, fishing gear, state of stocks) as product itself (freshness, nutritional quality, type of presentation).

In France, pro-eco-label consumers are more often male, living near the coast, and whose food budget is over 450 Euros per month. They realize their purchases on traditional markets for them to guarantee quality local products. They have no predefined choice but choose according to what is presented on the stand. Their average basket, 12.6 Euros, is higher than the national average (+12%).

In Spain, households of three people and more are most interested in eco-labeled seafood. In case of Galicia, easy access for the sale of fishery products means that the demand is distributed among all (supermarkets, hypermarkets, markets, etc). In addition, the average basket of 23.04 Euros for Galician pro-eco-label consumers, well above the French one, is lower than the Spanish pro-eco-label average basket. Note that this average basket is as well lower than the Galician average basket of any class of consumers (-21%).

5.4. Labeling, species and willingness to pay

✓ Question: **If you have chosen a labeled product, would you pay more for the guarantees brought by this label?**

In France, there is a higher proportion of consumers willing to pay more for labeled products: 70% against 61% in Spain and 59% in Galicia (Table 7). The reasons given by Spanish consumers who have not chosen any label are: weak credibility of the labels for 44.8% of them and that these labels are not necessary for 34.5% of them. Moreover in Galicia people gave us two answers: they do not have to pay this increase and they can't afford this increase.

Table 7. Proportion of consumers willing to pay more for a label product.

Paying more for a labeled product	France	Spain	Galicia
Total sample			
Yes	70%	61%	59%
No	30%	39%	41%
Pro Eco-label			
Yes	76%	63%	55%
No	24%	37%	45%
Pro Health label			
Yes	67%	61%	60%
No	33%	39%	40%
Pro Fair trade label			
Yes	69.2%	57%	59%
No	30.8%	43%	41%

Source: Eco-label survey, PRESPO Project

Almost 8 of 10 pro-eco-label French consumers are willing to pay more for a labeled product, against 6 of 10 in Spain. In France, pro-eco-label consumers consider seafood products are sold at affordable prices, what could explain why they are more likely to pay for a green product. However, pro-fair trade labeled consumers, yet with a small food budget, would also agree to pay for more expensive labeled products, probably to be consistent to their convictions.

Regarding the wholesalers of shrimp in Andalusia, there is a higher proportion of pro-eco-label interviewees willing to pay more for a labeled product (73%) compared to the pro-health label (52%) and pro- fair trade label (27%) wholesalers.

✓ Questions 24 to 31: **If the establishment of a label raises the price of ## Euro(s) per kg, would you pay that higher price to purchase the labeled product?**

This part of the questionnaire focuses on one of the pilot species. The starting price differs from one species to another, as well as the proposed values of increase {X, Y, Z} (*Cf.* Methodology).

Proportion of "yes-answering" consumers and values of increase:

The proportion of positive answers according to the value of increase allows calculating the willingness to pay for each one of the pilot species. Considering the proportion of "yes-answering" consumers in relation to the value of increase, threshold value of increase should be considered:

- For Anglerfish, Sole and Nephrops, an increase in the average price of 2 Euros per kg appears to cause an important decrease in the number of respondents willing to buy a labeled product. Similarly there is a threshold value of 3 Euros extra;
- Anglerfish, the most expensive of selected pilot species with an average price of the standard product of nearly 22 Euros per kg, obtains a high approval rate for an increase of 0.5 Euro per kg (80 % acceptance) until 2 Euros per kg (60% acceptance). From 2 to 2.5 Euro increase, we lose half of people willing to pay more for a labeled anglerfish;
- Sole, with the average price of standard product between those of lobster and anglerfish, obtained for different values of increase between from 0.5 Euro to 3 Euros per kg, the lower acceptance rate;
- For more than 2 Euros extra, lobster gets an acceptance rate higher than sole and anglerfish. For an increase of 3 Euros per kg, 30% of respondents said they were ready to pay more for a labeled lobster against 20% in the case of sole and anglerfish;
- Anchovy, with an average price of the standard product of 5 Euros per kg, obtains an approval rate of 73.5% for an increase of 0.50 Euro which drops below 45% for an increase of 0.75 Euro.
- Octopus, with an average price of the standard product of 6 Euros per kg, obtains an approval rate of 85% for an increase of 0.50 Euro per kg which drops below 60% for an increase of 1 Euro and below 35% for an increase of 2 Euros.

The results of the survey on shrimp wholesalers in Andalusia show that more than 75% of the wholesalers would be willing to pay an increase of 0.32 Euro per kg for a labeled product. This proportion drops below 35% for an increase of 0.48 Euro per kg and more.

Willingness to pay:

Willingness to pay is defined as the price for which the interviewee would respond indifferently yes or no (Table 8).

Table 8. Willingness to pay for labeled product by pilot species.

Willingness to pay	France			Spain	Spain - Galicia
	Anglerfish	Sole	Nephrops	Anchovy	Octopus
Starting price (standard product) Euro/kg	21.6	18.8	15.8	5	6
Willingness to pay (Euros)	1.86	2.42	2.86	0.74	1.6
Willingness to pay (% of the starting price)	9%	13%	18%	15%	27%
Confidence level					
lower limit	1.44	2.19	2.53	0.70	1.39
upper limit	2.3	2.71	3.23	0.77	2.04

Source: Eco-label survey, PRESPO Project

Consumers' willingness to pay ranges from 9% of the standard product price for the anglerfish to 27% for octopus in Galicia. In Andalusia, wholesalers' willingness to pay represent 7% of the standard product price, it means 0.4 Euro per kg. For them, proposing labeled products doesn't necessary means obtain a margin improvement, but it is a way to provide a broader range of products and responding the demand of customers.

Willingness to pay depends on the species, both of its reference price but also of the perception of the product and consumer. Socio-demographic characteristics have an influence on the acceptance rate: econometric models show that it is primarily the level of household income that determines the acceptance rate, and the Education level. Consumption behaviors of the respondents (regular purchases or purchases only for festive occasions, average basket, product and fresh seafood knowledge ...) can have an influence on the acceptance to pay more for a labeled product. The characteristics of the species (nutritional quality, reputation of the product ...) and the substitutability of one species by another have also to be considered: lobster is substitutable for example at the time of purchase by the shrimp or prawns. Finally, attention to the mode of production of the species, knowledge of the fishery and stock status, in some cases, may explain a higher acceptance rate.

6. Conclusions

This study assessed, through analysis of purchase behaviors and consumers expectations, the potential market for eco-labeled fishing products in France and Spain. In particular, it was possible to measure consumers' demand concerning eco-labeled fishing products. The eco-label is defined in the study as a "label guaranteeing the use of environmental and marine resources friendly techniques". At the same price as the standard product, 3 of 10 French consumers and 2 of 10 Spanish consumers would prefer the eco-labeled product to other products offered (standard product, health-labeled product or faire-trade-labeled product). In reference to other consumers' goods, we should suppose the demand of sustainable seafood products is growing. It is interesting to note that the commercialization operators, wholesalers of shrimp in Andalusia, are aware of the request of their customers. To meet their expectations, they are also ready to supply with labeled products.

Note the importance of health issues that emerges through the purchase intentions of a majority of consumers, French and Spanish. By this choice, the notion of health risks is put forward: the consumer expresses his wish to be reassured of the lack of harmful substances. No marketing communication can be built on this regulatory point, because any food product has to comply with health regulation imposed by legislation (see *Codex alimentarus*). Recent cases related to PCB and radio campaigns asking pregnant women and children limit their fish consumption because of mercury contamination may explain the responses to the survey.

The choice of a type of label depends on consumer socio-demographic characteristics, but also on expectations and purchase behavior. This behavior is directly related to the image that the consumer has of the fishing sector. French and Spanish pro-eco-label consumers have a rather negative judgment of professional fishing sector because of its environmental impacts. They say they pay more attention on production information. To reach pro-eco-label consumers, it is therefore necessary to communicate on the production process (product origin, method of fishing, stock levels) more than on the characteristics of the goods.

The study also measured the hypothetical willingness to pay for considered pilot species. Willingness to pay is a premium ranging from 9% of the standard product for the anglerfish to 27% for octopus in Galicia. These values appear consistent with the results of a recent study published by Roheim and al. (2010) on the frozen Alaska pollack sold in supermarkets in London: the study have calculated an average premium of 14.2% for eco-labeled products. Willingness to pay depends on the species, both of its reference price but also of the perception of the product and consumer behavior. Income and educational level emerge as the main determinants of willingness to pay.

The experience shows that there is an important difference between rhetoric and practice. If the demand for eco-labeled products cannot be disputed, the willingness to pay measured here for hypothetical products that are not yet sold, would not necessarily be effective on the market. However, an eco-labeled product, if the guarantees it provides meet consumer expectations, may determine the choice of the labeled product rather than the standard product. It is a tool that can help maintain market shares against competitive products or to conquer new market shares.

Knowledge of demand and willingness to pay are some answers to feel the potential market and assess the return on investment of the establishment of a process of product differentiation. For operators in the sector, the eco-label, more than a lever to obtain a higher price and margin improvement, is a marketing tool to communicate about the product and the measures in terms of resource management and environmental impact reducing. Commercialization operators are aware of that. The eco-label meets a real consumer demand for better information on products. This raises the question of the clarity of the information: the development of many "labels" and other "brands" is confusing for consumers. The description of the socio-economic characteristics, consumption patterns and expectations of consumers should help to better target messages to pro-eco-label consumers.

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Annex 1: PRESPO project activity 5 "Commercial optimization"

Lead partner: RICEP

Partners involved: AGLIA, AZTI, CETMAR, IPIMAR, UCA and UHU.

A.1.1. Objectives

«Commercial optimization » workgroup as proposed by RICEP follows a simple principle: fishing less/better in order to sell more/better. The idea consists in conducting and constructing common actions with fishing operators to increase the added value and protect the resource as well. The main objective of the WG5 is to identify different mechanisms which could allow having a higher added value on fishing products for the different professional operators. The WG5 work will concern upstream the supply structure and downstream the analysis of targeted markets and the demand structure.

A.1.2. Actions

Activity 5 is divided into two actions:

- **Action 1.** Impact of fishing management measures on the products commercialization: understanding how different fishing strategies and management tools could conduct to less important fishing effort and better selling of the fishing products;
- **Action 2.** Optimization of the products added value: define the different commercialization ways, the different markets and the economic mechanisms which allow adding value to fishing products.

Annex 2: French and Spanish socio-professional categories

A.2.1. SPC France
Agriculteurs exploitants
Ouvriers (y compris agricoles)
Artisans, commerçants, chefs d'entreprise
Cadres, professions intellectuelles supérieures
Professions intermediaries
Employés
Retraités
Autres sans activité professionnelle

A.2.2. SPC Spain
Agriculture, Industrie et Construction
Commerce
Services Généraux
Services professionnels
Ménagère
Retraités
Inactifs

Summary

In Europe, eco-labels are spreading in many areas and fishing products are no exception to this trend. Several fisheries have developed eco-labeling approaches, and the supply for "sustainable" labeled products is growing. This development has been observed since 2005, mainly led by some North of Europe countries and under the influence of large distributor chains, mostly with processed products. With this in mind, the question asked by commercialization operators in France and Spain concerns the commercial potential of eco-labeling applied to artisanal fisheries in the Atlantic area, as mechanism of adding value and commercial optimization.

This study examines the following questions: Is this "green" products demand concerning fresh sold artisanal fishing products? What is the current trend in the southern countries of Europe?

The present eco-label survey, coordinated by RICEP with PRESPO partners, aims to describe expectations and consumers behaviors concerning fishing products who certify environment respectful practices.

Keywords

Eco-labeling, artisanal fishing product, green demand, consumer expectations, willingness to pay, dichotomous analysis, contingent valuation method