PRESPO

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Commercial potential of an ecolabel applied to artisanal fishing products

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Commercial potential of an ecolabel applied to artisanal fishing products

Claire-Marine Lesage
Laurent Baranger

Context

In Europe, ecolabels[1] are spreading in many areas and fishing products are no exception to this trend. Several fisheries have developed ecolabelisation 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.

Is this "green" products demand concerning fresh sold artisanal fishing products? What is the current trend in the southern countries of Europe?

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.

This 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]. The survey will be conducted in three Latin countries that are major consumers of fishing products in Europe: France, Spain and Portugal. Questions will concern notably pilot species, selected on some criteria coherent with écolabellisation approach.

General framework of the study

This study, based on a consumer's survey, aims to evaluate the commercial potential of an ecolabel applied to artisanal fishing products. The proposed survey will focus on expectations and buying behaviors of consumers (attitudes, intentions and purchasing acts) concerning artisanal fishing products, in the three PRESPO countries (Spain, Portugal and France). The study will concern essentially fresh commercialized fishing products. RICEP is the coordinator of the study, but the survey realization and data recording will be made by

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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.

PRESPO partners for the concerned countries.

Objectives and expected results

The study should provide:

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

Phase 1: actions prior to questionnaire development

1.1. Bibliography

RICEP proposed to the partners of activity 5 to prepare a common bibliography on the ecolabel topic. It is divided into two types of documents:

- Technical documentation for use by managers and professional structures (for example: methodological guidelines for the establishment of ecolabeling approaches, definition of eligibility criteria, ...). This bibliography is registered online at the site of Atlantic projects. It has allowed some partners 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). This survey is based on this bibliography.

1.2. Selection of pilot fisheries/species

Partners 5 have selected one or several pilot fishery(s)/species for conducting the proposed actions on the theme of "commercial optimization". The survey will focus on these species:

Table 1.

Country	Partners	Pilot fisheries/species
France	AGLIA and RICEP	Anglerfish (*Lophius piscatorius*)
Spain	AZTI	Basque country artisanal fleet
	CETMAR	*Octopus*
	UCA	Anchovy (*Engraulis encrasicolus*) in Barbate
	UHU	Bivalve mollusk fishery
Portugal	IPIMAR	?

In each case will correspond a different version of the questionnaire. Thus, at french level, the survey will include three different versions of questionnaire.

1.3. Preliminary survey

A preliminary survey will be conducted in each country from a small sample of consumers (40-50 respondents). It will allow, on the basis of open questions, to determine the criteria corresponding to the expectations of consumers when they are talking about a label applied to fishery products or foodstuffs in general. These criteria will be used to define the terms "label" and "ecolabel" when introducing the survey.

1.4. Reference population

The reference population will correspond to the entire national population. Indeed, it is difficult, given consumption data available at the international level, to consider a reference population consisting mainly of fresh fish consumers who actually consume the selected pilot species. Regarding Spain, the four partners involved (AZTI, CETMAR, UCA, UHU) may agree on the distribution of surveys based on their respective areas of jurisdiction and budgets to be allocated to the realization of the survey.

1.5. Construction of the sample

a. *Construction of the sample*

The representativeness of the sample will be evaluated using four criteria (a sample is considered representative when it has the same characteristics as the reference population):

- Coastal cities are defined as cities located in the coastal departments[3];

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[3] Cities or urban units comprise a set of one or more municipalities with a continuity of building (not more than 200 meters between two buildings) and with at least 2 000 inhabitants. The condition is that every municipality in the urban unit has more than half its population in this area. Cities or urban units can span multiple departments. In some cases, some municipalities of an urban city are located in a coastal department and

- Size of the city.

In the case of France, we will consider 5 classes of cities: very large cities (500 000 to less than 5 000 000 inhabitants), large cities (100 000 to less than 500 000 inhabitants), intermediate cities (5 000 to under 100 000 inhabitants) and rural communes (less than 5 000 inhabitants);

- The gender distribution;
- Ages: 15-25 years old, 26-45 years old, 46-65 years old, over 65 years old.

b. Sample size

The accuracy of results increases with the number of respondents.

In practice, the calculation of the margin of error, it means the confidence interval in which stands the answer with a confidence level of 95%, for the results of one question, corresponds to the following formula:

$$\text{Error} = 1.96 * \text{Root} (p * (1-p) / n)$$

where p is the percentage response (distribution of responses to one question) and n the sample size.

The summary table below shows different error margins for some proportion of responses and some samples sizes, with a confidence level of 95%:

Table 2.

Distribution of answers	Sample size				
	300	500	600	1000	2000
50-50	5,7%	4,4%	4,0%	3,1%	2,2%
60-40	5,5%	4,3%	3,9%	3,0%	2,1%
70-30	5,2%	4,0%	3,7%	2,8%	2,0%
80-20	4,5%	3,5%	3,2%	2,5%	1,8%
90-10	3,4%	2,6%	2,4%	1,9%	1,3%

In our study, to obtain a random error of less than 4%, the number of surveys will be higher than 600, so we have the following repartition:

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others of the same urban unit in a non-coastal department. This is the most populated municipality who permits to classify the urban unit in the coastal zone or in the non coastal zone.

Table 3.

Country	Partners	Species number	Sample size
France	AGLIA, RICEP	3 species	1000
Spain	AZTI	?	
	CETMAR	1	>600
	UCA	1	
	UHU	1	
Portugal	IPIMAR	?	>600

Sample size should be set according to available resources and degree of precision (error margin).

c. Quota sampling

In each country, PRESPO partners will determine quotas of sample on the basis of the four variables presented above (§ 1.5.a.). Following is presented the sample in case of France.

- *Coastal/non-coastal population*

We consider that a coastal place is located in a coastal department. In France, the proportion of non-coastal population represents about 70% of the total metropolitan population (INSEE, 2008 data). 30% of the French population lives on the coast. Given that French survey will focus on 1 000 respondents, 300 people living near the coast and 700 on the remaining territory will be interviewed.

- *Population distribution by size of the city*

Cities have been segmented (source: INSEE, 2006 data) into 5 categories according to their importance. The following table shows the percentage in number of inhabitants for coastal and non-coastal cities. 700 questionnaires have to be conduct outside the coastal zone:

Table 4. (INSEE, 2006 data).

Cities categories	Number of cities in the category	Percentage (in number of inhabitants)	Number of questionnaires
Very large cities: 500 000 to 5 000 000 inhabitants	5 (included Paris)	32%	230
Large cities: 100 000 to 500 000 inhabitants	28	14%	100
Intermediate cities: 5 000 to 100 000 inhabitants	592	23%	160
Rural communes: less than 5 000 inhabitants	23695	30%	210

300 questionnaires have to be conduct on the coastal area:

Table 5. (INSEE, 2006 data).

Cities categories	Number of cities	Percentage (in number of inhabitants)	Number of questionnaires
Very large cities: 500 000 to 5 000 000 inhabitants	5	23%	70
Large cities: 100 000 to 500 000 inhabitants	16	18%	50
Intermediate cities: 5 000 to 100 000 inhabitants	353	27%	80
Rural communes: less than 5 000 inhabitants	7914	32%	100

- *Gender distribution*

We consider that the proportion of men and women is roughly balanced in the French population (50/50).

- *Ages categories*

INSEE provides a repartition of the French population by age and sex. For the survey we will retain the following categories: 15-25 years, 25-45 years, 45-65 years, over 65 years.

Table 6. (INSEE, data from 1st January 2010).

Ages categories	Percentages
15-25 years old	16%
26-45 years old	34%
46-65 years old	30%
Over 65 years old	20%

Considering the different data and selected variables, we obtain the following sampling:

Non-coastal

Table 7. (INSEE, 2006 data).

Cities categories	15-25	26-45	46-65	66 et plus	Total
Very large cities: 500 000 to 5 000 000 inhabitants	37	78	69	46	230
Large cities: 100 000 to 500 000 inhabitants	16	34	30	20	100
Intermediate cities: 5 000 to 100 000 inhabitants	25	55	48	32	160
Rural communes: less than 5 000 inhabitants	34	71	63	42	210
TOTAL	112	238	210	140	700

Coastal

Table 8. (INSEE, 2006 data).

Cities categories	15-25	26-45	46-65	66 et plus	Total
Very large cities: 500 000 to 5 000 000 inhabitants	11	24	21	14	70
Large cities: 100 000 to 500 000 inhabitants	8	19	17	11	50
Intermediate cities: 5 000 to 100 000 inhabitants	13	27	24	16	80
Rural communes: less than 5 000 inhabitants	16	32	28	19	100
TOTAL	48	102	90	60	300

1.6. Points to validate next WG5

- Sample size (see Table 3)?
- Construction of the sample by country and partner (see Tables 8 and 9)?

Phase 2: Questionnaire development and management

2.1. Questionnaire structure

- Introduction, survey context and objectives;
- Information on commercial fishing and its regulation;
- Information about the environmental impact of commercial fishing on the marine environment;
- General perception and consumption of seafood;
- Behavior purchasing fresh sold fishing products;
- Willingness to pay concerning pilot species;
- Participant characteristics (gender, age, marital life or not, number of children(s) and age(s), education level, type of occupation (rank occupational categories), residence (coastal or non-coastal), monthly income the home).

2.2. Questionnaire management

The survey will be conducted in face to face on the ground in neutral places towards the consumption or purchase of fish. This management of survey will permit to:

- Maximize response rates;
- Respect the composition of the sample (sample adjustment);
- Have a better quality of collected data;
- Avoid bias related to the type of place of purchase (fishmonger's versus traditional supermarkets) and related to the time of purchase (before or after).

The questionnaire could also be distributed to a group, for example a group of passengers on the train. Several versions of the questionnaires will be prepared:

- One version by pilot species (questions on willingness to pay and purchasing behavior);
- Several versions with different orders of questions.

2.3. Data processing

a. Bias processing

Survey management can be the source of methodological bias. Indeed, the interview face to face can cause a social desirability bias: it means that respondents want to be in a favorable light to their interlocutor. Moreover a depreciation of respondents is possible. Biases can also be related to interpretations or standards different from one person to another. These different bias diminish the relevance of intergroup comparisons. This is particularly true for international comparisons. The use of vignettes at the end of the questionnaire will permit to treat statistically bias responses.

b. Data processing

RICEP proposes to centralize all data to make transnational processing. A set of descriptive statistics (simple and cross tabulations) should permit to operate a first data processing. Several graphs will be presented and discussed. Then, an analysis of data will observe correlations between variables (in terms of statistical laws). For example, the willingness to pay labelled fishing products can be stronger among women, youth, individuals with higher levels of education and those living near the coast (see Brecard et al., 2009).

Finally, an econometric treatment will study intends to purchase and the amount (the premium) that individuals are willing to pay to consume labeled products according to their sociodemographic characteristics, occupational and perceptual (perception on regulations in the field of fisheries, on the quantity and quality of information on fishing techniques and resources state). This type of model can control individuals heterogeneity (assuming a sample where women managers are likely to consume labeled fishing products: econometrics permit to determine if the result is due to an effect of gender or Rank occupational categorie and with what intensity. We analyse these effects all things being equal). Sociodemographic, perceptual and professional determinants of individuals willing to pay more to consume labeled products will be identified. Also, for each species and for each category of individual, it will be possible to define an average willingness to pay.

2.4 Points to validate next WG5

- Questionnaire management (face to face or not?)
- Different versions of questionnaire?
- RICEP data centralization?

Work planning

Planning	1st quarter			2nd quarter			3rd quarter			4th quarter		
	January	February	March	April	May	June	July	August	September	October	November	December
Work prior to the establishment of the questionnaire												
Pré-enquête		RICEP										
Reference population selection		WG5 partners										
Sample choice		WG5 partners										
Questionnaire development												
Questionnaire wrting	RICEP											
Formatting and translation of the questionnaire		RICEP										
Questionnaire testing		WG5 partners										
Final questionnaire validation			RICEP									
Survey												
Surveys conducting				WG5 partners								
Data entry				WG5 partners								
Data processing							RICEP					
Report writing										WG5 partners		
PRESPO workgroups				WG5							WG5	

To validate next WG5

Human means

Table 9.

Country	Partners	Numbers of investigators / function	Sample size
France	AGLIA et RICEP	4 investigators/trainees	1000
Spain	AZTI	?	
	CETMAR	?	>600
	UCA	?	
	UHU		
Portugal	IPIMAR	?	>600

Annex: Bibliography/references concerning consumers and ecolabels

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