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**SUCCESS**

**Strategic Use of Competitiveness towards Consolidating the  
Economic Sustainability of the  
European Seafood sector**

**Start date of project: 01/04/2015**

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**D2.5: Manuscript on consumer preferences  
and potentials for future fish consumption**  
—  
**Summary of WP2 results**



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## 1 INTRODUCTION

This deliverable summarises the key results of the Workpackage (WP) 2 “Consumer preferences, market acceptance and social awareness towards seafood”. WP2 consisted of several tasks:

- Task 2.1: Analysis of driving factors (economic, personal and social) of seafood consumption in European countries (UC)
- Task 2.2: Analysing and increasing social awareness on European seafood
  - Subtask 2.2.a: Collective representations of seafood products and production methods (responsible UBO)
  - Subtask 2.2.b: Education - Seafood products in collective restaurants (responsible UBO)
  - Subtask 2.2.c: Seafood products in the food based TV programs (responsible UBO)
  - Subtask 2.2.d: Effectiveness of internet information websites on seafood products (TI)
- Task 2.3: Exploring awareness, preferences and willingness to pay of consumers for European seafood products (TI, ATEITH)
- Task 2.4: Identification of innovative seafood products/case studies (responsible TI)
  - Subtask 2.4.a: Exploratory qualitative phase
  - Subtask 2.4.b: Quantification of results

Several deliverables are part of this WP and have been prepared according to the General Agreement:

D2.1: Report on the analysis of the functions of seafood consumption and demand and market segmentation of countries according to elasticities

D2.2: Results on consumer preferences for sustainable seafood products from Europe

D2.3: Report on possibilities for the improvement of the internet communication on seafood products

D2.4: Report on the potential of selected innovative products in European markets

D2.5: Manuscript on consumer preferences and potentials for future fish consumption

Based on the summary of the results of the different tasks this deliverable will close with some conclusions and recommendations for the further development of the European fish sector are developed.

The report does not follow the order of the tasks. Instead, it follows a logical sequence with the aim to increase readability.

## **2 ANALYSIS OF DRIVING FACTORS (ECONOMIC, PERSONAL AND SOCIAL) OF SEAFOOD CONSUMPTION IN EUROPEAN COUNTRIES (TASK 2.1)**

(Josè Louis Fernandez Polanco, Ignacio Llorente Garcia)

Understanding the factors affecting consumption and demand is a critical requirement for food security and nutritional improvement. Lack of knowledge about consumer culture and preferences and the way in which factors like population growth and economic development may affect demand is behind tales of failure in the food market. The most common models of food consumption include population as a key driver. Beyond population, food consumption may be dependent on economic factors, behaving in different ways according to the country or the food category. This task has focused on studying the economic functions of consumption and demand looking for differences in the elasticities across countries and species which may corresponds to specific market segments. Differences in the elasticities and other parameters are a consequence of differences in consumer's preferences which, in last term, result in a segmented market.

A general function of consumption, including a demand sub model, has been tested in 20 different countries in order to assess the suitability of different designs and data in explaining the evolution of seafood consumption. Further, a more detailed analysis at species level has been conducted in 8 countries within the European Union. Results vary across countries and species, as a consequence of differences in cultural patterns and consumers' preferences. However, the model has shown consistency in most of the analysed countries and species and high explanatory power in the many of them.

Results from the aggregated models indicate that seafood consumption depends on population, income and the evolution of prices. Positive parameters are the most common results for population and income. However, negative parameters in population were found in countries where consumption is decreasing indicating changes in consumer dietary preferences, as in the case of Japan, or decreases in supply as in Tanzania. Income has been found to be positively related with seafood consumption in all the cases in which the parameter has been found to be significant. As expected, the price index, computed with international trade data, exerts a negative effect in all the cases in which its influence was not rejected. In general, consumption is increasing as population and economic welfare grow. However, demand is price elastic, limiting the amounts demanded and the rate of increase in seafood consumption. Some models have also shown that in several countries the price of seafood has been rising at the time national income was increasing.

Departing from the aggregated model, a more detailed analysis at species level has been undertaken in 8 countries within the European Union. The species selected cover whitefish, marine aquaculture, flatfish, bivalve shellfish and freshwater aquaculture. Cod has been used to illustrate the case of whitefish consumption. Marine aquaculture is represented by salmon and gilthead seabream. Sole and plaice illustrate the case of flatfish comparing a high versus a low value fish. Mussels and scallops represent two well differentiated molluscs in terms of value and harvest technologies. Finally, carps, with consumption concentrated in Central Europe illustrate the case of freshwater aquaculture.

Consumption of the observed species in the EU is segmented geographically. Cod and salmon show relatively high consumption in almost all analysed countries. Beyond minor differences across countries, the parameter significance and values drive to the same conclusions of an elastic demand. In other species analysed, the rates of consumption and the elasticity of the functions change across two main groups of countries: Southwest and Central-East. These differences are specially pronounced in certain species like mussels or carps. In EU countries farmed species are increasing consumption at the cost of wild species. The variation of the per capita consumption of wild caught species is negative in

all cases, but that of farmed species is positive. Model performance has been found to be better with farmed fish. Also, the models for farmed species are less price sensitive than those of the wild species.

There are also some differences in the significance of parameters across countries for some species which could be reflecting some kind of market segmentation based on economic factors. Demand for cod in Italy and Greece, countries not fishing these species, is price inelastic in contrast with the countries in the Atlantic, where it behaves price elastic. Seabream demand is price and income elastic in Spain, Italy and Greece, who are the largest European producers and markets for this species. With the exception of Germany and the Netherlands, which may require further analysis in the future, all the other countries were price and income inelastic. Income elasticity is more relevant for plaice consumption in Italy, Germany and Greece, but non relevant in Spain, France and the UK, where demand is affected by price elasticity. Demand for mussels is price inelastic in Spain, Italy and the Netherlands, also large producers of these species. Carp demand is price elastic only in Poland, where consumption records for the higher levels.

### **3 CONSUMER PREFERENCES FOR SUSTAINABLE SEAFOOD PRODUCTS FROM EUROPE (TASK 2.3)**

#### **3.1 TRANSNATIONAL RESEARCH USING THE CONTINGENT VALUATION METHOD**

(Katrin Zander, Yvonne Feucht)

Form other food products we know that consumers are willing to pay higher prices for different sustainability attributes such as sustainably/organic/fish welfare/locally produced. Against this background, this research explored consumers' awareness, preferences and willingness to pay for seafood from European production with the additional attributes of environmental and/or social sustainability. The results help to answer the question if sustainably produced seafood from European production might become a competitive market segment in European seafood markets.

The research consisted of an online survey conducted with 4103 consumers in eight European countries (Finland, France, Germany, Ireland, Italy, Poland, Spain and United Kingdom). The survey included a questionnaire and a contingent valuation exercise. The questionnaire elicited consumers' perception of European and local production, perception of sustainable fisheries and fish farming and associations with aquaculture. The contingent valuation exercise explored consumers' preferences and willingness to pay for seafood for different sustainability aspects (e.g., higher animal welfare standards, no discards) and varying geographic origins (e.g., local, European).

The study highlighted that consumers preferred domestic and local seafood over seafood from other European countries as well as seafood originating from Europe over seafood from outside the EU. Domestic and local origin was foremost associated with "greater freshness", "support of the local economy" and "shorter transport distances". Consumers associated European origin in particular with high food safety standards and ethically responsible production and perceived the European Union as a credible controlling agent.

The results on consumers' attitudes towards aquaculture reveal that the participants of the study had a rather positive view of aquaculture. Aquaculture was foremost associated with the provision of jobs and perceived as being important to cover global fish demand. Healthiness including human as well as animal wellbeing was another very important aspect of sustainable aquaculture. With respect to taste, wild fish was however preferred over farmed fish. Sustainable fisheries and sustainable aquaculture were predominantly associated with environmental sustainability and to a lesser degree with economic and social sustainability.

The findings of the contingent valuation exercise show that the additional willingness to pay was highest for organic production, sustainable production and higher animal welfare standards. For marketing and communication issues, the share of participants with a (high) additional willingness to pay (WTP) is of particular interest: three consumer segments were identified by means of a cluster analysis: 'No WTP' (WTP +2%), 'Medium WTP' (WTP +17%) and 'high WTP' (WTP +43%). While only 9% of the participants belonged to the 'high WTP' segment, the 'medium WTP' segment contained 44% and the 'no WTP' segment 47% of the participants.

The results reveal that promoting the sustainability of seafood and domestic, local and European origin might be a promising way to improve the market position of the European seafood sector. Consumers associated sustainability in seafood in particular with the environmental dimension of sustainability. This should be considered in the development of appropriate communication strategies. The most promising sustainability aspects for caught seafood are a low impact on the marine environment and the protection of the aquatic biodiversity. For aquaculture the protection of endangered species, an eco-friendly production and the respect of fish welfare were of most interest to consumers. The complete results of this research are published in D2.2.



### **3.2 RESULTS FROM GREECE USING CHOICE EXPERIMENTS** (Avdelas Lamprakis)

In Greece, the research consisted of an online survey conducted with 504 consumers in two cities (Athens and Thessaloniki). The survey included a questionnaire and a choice experiment. The questionnaire elicited consumers' awareness for sustainability and organic certification labels and public perceptions for aquaculture in Greece. The stated preferences discrete choice experiment addressed mainly consumer choices and willingness to pay for sustainable seafood products in the Greek market. Five different species (namely anchovy, hake, seabass, meagre and mussels) are included in the choice experiment.

The study highlighted that only few (18%-26%) consumers in Greece were aware of the most common sustainability labels and even fewer consumers (6.5%-14%) were aware of the meaning of these sustainability labels. The findings suggest that, in order to familiarise consumers with the sustainability labels, actions (such as campaigns for the general public) need to be taken.

The results on consumers' perceptions towards aquaculture reveal that the participants of the study had a rather positive view of aquaculture. The vast majority of the consumers were aware of the positive impact of fish consumption on human health and also have a positive view (73%) of the farmed seafood quality. Only a small part of the consumers (16%) are sceptic regarding the environmental impact of aquaculture when compared to the environmental impact of meat production. The findings suggest that the aquaculture industry in Greece needs to improve consumer perceptions regarding the taste of farmed seafood and risks associated with farmed seafood consumption.

In terms of seafood choice, the results suggest that price and origin remain the main determinants of seafood choice in Greece. The study highlighted that consumers preferred domestic seafood over imported seafood from European and non-European countries. Accordingly, underlining the domestic origin of a seafood product will be a promising argument in consumer communication.

Finally, the results suggest that the average Greek consumer is indifferent to the sustainability certification and is not willing to pay any price premium for such products. A notable exception is the case of retailer certification for unvalved mussels in Thessaloniki, where consumers seem to dislike such certification. As in the case of organic seafood, currently a niche market in Greece, there exists a part (>30%) of Greek consumers who are willing to buy and pay price premiums for seafood products certified for sustainability. Producers that already produce and export these products may benefit from such a niche market in Greece.

## **4 CONSUMERS' PERCEPTIONS AND USE OF INTERNET INFORMATION SOURCES ABOUT SEAFOOD AND LABELLING**

(Katrin Zander, Yvonne Feucht)

This section centres on consumers' use and perceptions of information sources about seafood and merges results from several tasks of WP2. First, this section looks into the use of the internet and consumers' perceptions and needs regarding the design of websites. Next, consumers' perceptions of sustainability labels for seafood are described.

Consumers' use of the internet for retrieving information about seafood and consumers' needs regarding fish information websites were explored by a three-step approach. The online survey in task 2.3 quantified the importance of the internet for information retrieval, the use of different web offers and the content consumers' were looking for online. In task 2.2d an explorative webpage analysis was performed for two German fish information websites to identify consumers' expectations of the website content. In task 2.4 we asked participants about their use of smartphones for information search while shopping.

The online survey (task 2.3) shows that the internet was the most important information source for consumers and had become even more important than labels as an information source about seafood. On the internet, consumers mostly used producer offers to inform themselves about seafood, followed by offers of consumer organizations and NGOs. With respect to the content of fish information websites, our results reveal that consumers looked online foremost for practical advice about seafood regarding recipes, healthiness and the quality of seafood. Sustainability issues were of relevance in all study countries, but consumers' interest differed between countries. While in Germany and the UK test persons showed a high interest in online information about the eco-friendliness of seafood, Polish consumers were particularly interested in animal welfare issues.

Consumers in all countries welcomed more complex, in-depth information about seafood in addition to more practical and specifically consumer-oriented information. German consumers expected information about labelling schemes to be present on seafood information websites. A universal online search tool and visual content was very much appreciated by consumers. Visual content is particularly important because it allows for story-telling, which in turn offers a way to build a bridge between the seafood sector and consumers, and thus might increase trust.

Computer assisted personal interviews with 17 consumers were conducted in order to elicit the usability of the analysed websites and to explore possibilities for improvement with respect to consumer needs. For the analysis of webpages we focused on two major seafood information websites in Germany, one issued by the German government ('Fischbestände online') and one directed by the seafood industry ('Fischinfo').

The two tested websites 'Fischinfo' and 'Fischbestände online' were unknown to the majority of the participants. This is not surprising considering that most of the participants stated to look online foremost for recipes. Even though 'Fischinfo' offers recipes, this is not the main focus of the website. 'Fischbestände online' solely aims to inform people about the conditions of fish species relevant for the German market, it does not present any recipes. However, both websites were generally met positively by the participants. All participants described 'Fischinfo' as helpful and most of them perceived 'Fischbestände online' as useful addition to other web offers. Both websites were successful in supporting consumers to inform themselves about seafood and the majority of the participants deemed 'Fischinfo' as well as 'Fischbestände online' as comprehensible. Information provision supported by pictures as well as information about sustainability issues and sustainability labels was perceived to be lacking on both websites.

One important communication means for sustainable production, not only for seafood, are product labels. Questions regarding labelling were therefore included in both online surveys (task 2.3. and

task 2.4). The first online survey (task 2.3) reveals labels to be the second most important source of information about seafood. More than 40% of the 4103 participants indicated labels to be the most important information source after the internet. The online survey in t2.4 showed that in Germany, France, Italy, Poland and the UK 30 to 50% of the consumers was aware of at least some sustainability labels on seafood products. The lower shares applied for UK and Poland. These consumers also attached importance to the labels in the purchase situation and had confidence in the underlying standards. Of all participants, Polish consumers were the least aware of sustainability labels on seafood. In Germany, Poland and the UK participants attached the highest importance to the MSC label in the shopping situation, whereas French and Italian perceived the respective domestic organic label as the most important one in their purchase decision.

## 5 ANALYSING AND INCREASING SOCIAL AWARENESS ON EUROPEAN SEAFOOD (TASK 2.2)

(Bertrand Le Gallic)

This section is mostly based on the results of three sets of research activities conducted during the SUCCESS project, namely:

- Collective representations of seafood products and production methods (Subtask 2.2.a)
- Education - Seafood products in collective restaurants (Subtask 2.2.b)
- Seafood products in the food based TV programs (Subtask 2.2.c)

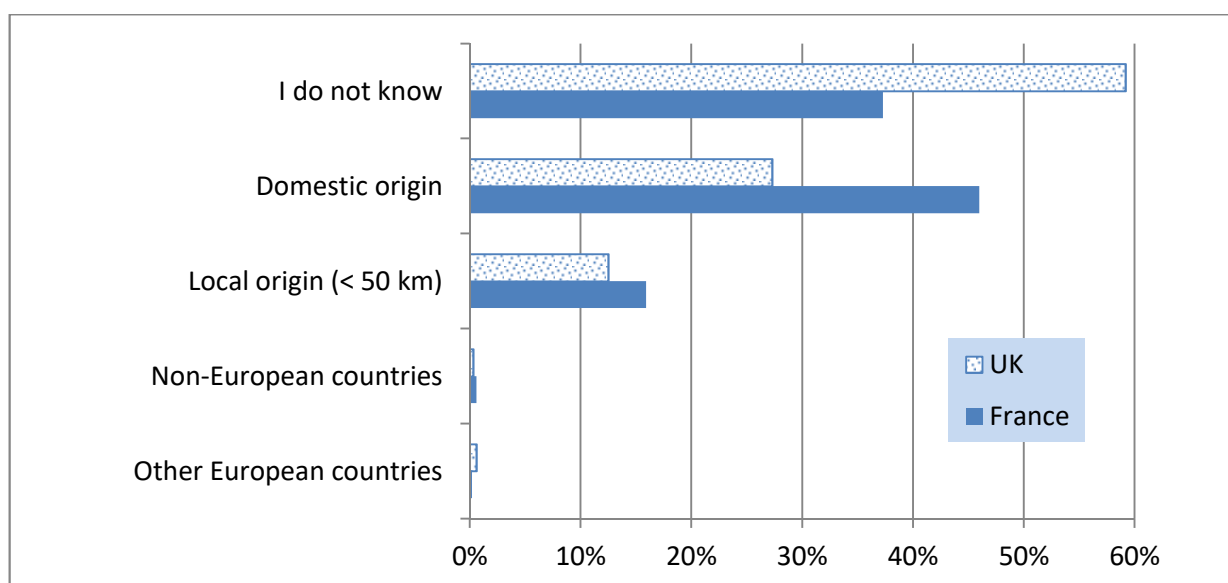
Responsible partner for all research steps was University of Brest (UBO). In addition, the section is also derived from other activities conducted as part of WP2 (online surveys and consumers' focus groups - responsible partner: TI), as well as from collaborative work undertaken by SUCCESS partners as part of the Galway Statement (AORA network).

Knowledge plays a central role in the agro-food business, where value-chains are often internationalised and fragmented, as in the seafood sector.

While consumers declare preferring domestic and local seafood (see section 2 above), it must be recognised that a large part of the seafood consumption in the EU is imported from outside the EU, whether it is from other European countries (such as Iceland and Norway) or from the rest of the world. In this context, some of the findings from the 2nd online survey (see D2.4) are particularly interesting, as revealed in the Figure 1 below, showing that 40% to 60% of the scallops' consumers in France and UK declared not knowing the origin of the product.

In addition, a lot of exchanges during the focus groups organised in different countries (e.g. France, UK, Germany) also suggested the low level of knowledge people are having on average regarding seafood products and production systems, even in coastal areas.

**Figure 1: Results from a survey of consumers in UK and France<sup>1</sup>**



<sup>1</sup> Question: You indicated to eat scallops. From where do the scallop products you consume mostly originate? Please indicate one answer.

Moreover, as shown in the research of this project (see table 3 of D2.2), there is a tendency to concentrate the consumption of seafood on several key products, especially salmon, tuna and cod (as

well as shrimps in a lot of countries). While this trend can be considered interesting for these ‘key’ products, it also suggests that local/traditional species are under-esteemed and under-used, which might be a paradox, especially in some fishing coastal areas where local producers have some difficulties to find a way to the market while the retailing and catering organisations (including publicly managed) are relying on imports, mostly of frozen products.

These findings reinforce the need to understand what the place of seafood products is in the day-to-day life of the EU consumers, as well as what their perceptions are. In order to address this issue, several complementary researches have been conducted in various countries (see D2.2):

- France: analysis of culinary TV Programs, school canteens and general literature
- UK: analysis of culinary TV Programs
- Italy: analysis of culinary TV Programs
- Poland: analysis of culinary TV Programs
- Spain: school canteens / university restaurants
- Greece: (music) school canteens.

While culinary TV Programs are broadly followed in most European countries, the share of viewers who eat seafood products regularly stays relatively low, especially when it comes to specific products such as shellfish and crustaceans (especially in the Northern – Eastern part of Europe). However, while it seems that some strong inertia exists in terms of consumption patterns, around 10% to 15% of the respondents declared that their seafood consumption increased in the last 12 months, partly thanks to culinary programs. Having said that, here again, the ‘top key species’ mentioned above are by far the most used in the TV programs, suggesting that a broader diversity of the products used, especially locally based products, could be further promoted through this channel.

In this general context of poor knowledge regarding the bulk of European seafood products, education can play an important role in modifying consumption patterns, as suggested by the ‘farmed in the EU school project’<sup>1</sup>. Surveys conducted in France, Spain and Greece show the diversity of practices across EU countries with regard to the design of canteen menus. While seafood products have a place in some countries such as Spain and France (e.g. national recommendation of one seafood course on five), it also turns that fresh, local products are hardly used or promoted (e.g. almost no occurrence for this type of products in the canteens surveyed in Spain). In France for instance, some initiatives regarding the use of sustainable seafood products (e.g. MSC labelled products) could even result in imports of frozen Hoki from New-Zealand or Pollock from Alaska. One reason often mentioned relates to the difficulty of securing sourcing from local production, especially due to the requirements imposed by the buyer (fillet, no skin, no bones...). However, in some places, it was observed that the use of local, fresh seafood products could be promoted (‘fish of the day’ on the menus). Also, the requirements mentioned above can be met either by existing (local) processors or by the creation of new processing facilities to deal with local production (which indeed results in the development of an alternative, complementary value-chain). Moreover, it is broadly recognised that using fresh raw material instead of frozen one could have a lot of advantages, provided that the staff is able to work with this relatively diverse raw material. The training of canteen staff (not only Chef) to know more about the cooking methods and the origin of the products appears to be the key of success.

In general, while seafood products used to play an important role in the history/culture (see some examples related to the scallops’ case study in Annex 1), the ‘seafood dimension’ of the society seems to decrease through the internationalisation of the value-chain and new consumption patterns. While consumers often mention that they may have some preferences for local, fresh products, there is a risk of ‘homogenisation’ of the supply in most countries, where a few key players are acting as the

<sup>1</sup> See e.g. <http://www.feap.info/Default.asp?SHORTCUT=680>

guardians of the market gates. If nothing is done in terms of developing consumers' knowledge, the unique representation of 'seafood' products in a few years / decades might be either a breaded (and yellow) square (as it is already the case in some places) or a slice of smoked salmon. And the bulk of the supply will consist in a handle of species (especially salmon, tuna, (tropical) shrimp, cod and pollock, as it is already the case in some markets).

These findings in general plead for the development of Ocean Literacy and other education programs, as promoted in some Horizon 2020 European projects (e.g. RESPONSEABLE) or the Galway Statement Ocean Literacy Working Group.

## 6 POTENTIALS OF SELECTED INNOVATIVE PRODUCTS IN EUROPEAN MARKETS

(Katrin Zander, Yvonne Feucht)

This section focuses on the results of task 2.4. The research in this task followed a two-step approach. First, in total 19 focus groups with in total 129 participants were conducted in Germany, France, Iceland, Italy, Poland and the UK between November 2016 and February 2017. Second, an online survey with 2503 fish consumers was organised in France, Germany, Italy, Poland and the UK in November and December 2017. The research aimed to identify the market potential of selected innovative products from carp, plaice, trout/salmon and from seafood from coastal fisheries. This selection was in line with the case studies of the SUCCESS project. The tested species/production forms differed by study country, since not all fish species/production forms were equally important in all countries. In addition, communication approaches for the respective species and for coastal fisheries were explored.

In the following, the main findings of both research steps are merged and presented together for each species and for coastal fisheries are presented. For more detail see D2.4.

### 6.1 CARP

Consumers' views on carp were explored in Germany and Poland. Consumers mostly had a positive view of carp and perceived it to be a tasty, healthy and traditional fish. It was foremost associated with festive seasons, such as Christmas and New Year's Eve. Main barriers for higher carp consumption were: Too many bones, insufficient knowledge about carp, moldy and inconsistent taste and low availability. Asked about their interest in "new" carp products (so far niche products in the study countries), consumers revealed some interest: German consumers were the most interested in bonecut carp filets, followed by carp burgers and carp sausages. Carp crisps were less appreciated by German participants. Polish consumers also showed high interest in boneless carp filets, followed by carp crisps and carp ham.

According to our results, in Germany as well as in Poland, a potential for "new" carp products exists. In order to activate this potential, a wider and all year round availability of different (convenient) carp products is necessary. High quality, regarding bonecut and taste are important prerequisites. Offering new recipes which consider modern lifestyle (small portion sizes, easy cooking) will help to enhance interest in and decrease the knowledge gap about carp. An increased offer of carp dishes in the out of home food provision sector with particular focus on non-traditional recipes could further support an increase in carp consumption.

### 6.2 PLAICE

In Germany and the UK we looked into consumers' perceptions of plaice. Plaice was mostly acknowledged to be a tasty fish and easy to prepare. In the UK plaice was perceived as a special and seasonal food fish and associated with the North Sea, more than it was the case for Germany. Regarding consumption barriers of plaice, for German participants the inconvenience in preparation was most important, whereas UK participants indicated the high price of plaice as main barrier. In both countries, further important barriers were a knowledge deficit about plaice and the low availability. The focus groups showed that plaice was frequently confused with other white fish species. In general, knowledge of plaice and its preparation was found to be low. In the purchase decision, consumers in Germany and the UK attached more importance to the fishing of plaice in line with sustainability considerations than to the origin from the North Sea.



Plaice is also used in white fish preparations, such as frozen and breaded fillets, without being explicitly communicated. This might be one reason for the low knowledge about plaice. Therefore, naming more explicitly the (white) fish species used on the packages of fish preparations is one first step to increase consumers' awareness and to enable them to decide for plaice convenience products. The lack of preparation skills and knowledge can be addressed by offering preparation advice and recipes through multiple channels. A more prominent presence of plaice in the out-of-home food provision would work in the same direction. A further promising approach for supporting plaice consumption might be to highlight the origin of plaice from local waters in a concise manner (specifying the area in the North Sea further) and to combine this claim with a sustainability indication.

### **6.3 TROUT AND SALMON**

Consumers' perceptions of trout were analysed in France, Italy and Poland. Good taste and healthiness were the most important attributes for the purchase of trout or salmon in all study countries. While in Italy domestic production (of trout) was even more important than healthiness, it ranked after easy preparation in Poland and easy preparation, low price and eco-friendly production in France.

One aim of the research was to identify the degree of substitution between the markets for trout and salmon. Participants differed only little in their associations with trout and salmon. Taste was perceived to be similar with regard to fresh as well as smoked produce. Salmon was meant to be easier obtainable but to be more expensive, particularly in Poland. In France and in Italy, smoked trout and smoked salmon are offered in very similar forms to consumers, since both have the typical orange colour of salmon. Therefore it is not surprising that consumers do not perceive large differences between these products. In contrast, in Poland smoked trout and smoked salmon look like very differently. The participants of the focus groups differentiated rather clearly between trout on the one hand and salmon trout and salmon on the other hand. However, they did not make out big differences in taste between trout, salmon trout and salmon. The results point out that it might be promising to highlight the local origin of trout/salmon trout as well as its eco-friendly farming practices in consumer communication in all study countries when aiming at increasing trout consumption.

### **6.4 COASTAL FISHERIES**

In France, Italy and the UK we inquired about consumers' views of coastal fisheries and a coastal fisheries label. Additionally, we looked into consumers' perceptions of clams/scallops as specific cases of coastal fisheries.

French, Italian and UK consumers had mostly a positive attitude toward coastal fisheries. Coastal fisheries were associated with high freshness, to be important for coastal communities, to be eco-friendly fished, to be healthy and to offer high quality as well as a high variety of seafood. Participants in France and Italy also perceived coastal fisheries as artisanal fishing. Against this background, the promotion of seafood from coastal fisheries by stressing its very high freshness and pointing out the origin from a particular domestic area appears promising.

The majority of the participants in all study countries perceived a coastal fisheries label to be useful, although with some country differences: interest was higher in Italy and in France and lower in the UK. Nevertheless, some scepticism regarding such a label and the perception of having already enough labels on seafood was expressed.

Using a label for communicating the origin from coastal fisheries appeared particularly promising for France and Italy. Underlining artisanal fishing practices, where applicable, can support market differentiation. A prerequisite for this approach is that the included seafood products hold up to the expectations of consumers.



Products bearing a coastal fisheries label should be eco-friendly fished, of a very high quality, and of a high freshness (particularly Italy). Additionally, the support of local, coastal communities (mainly UK) and artisanal fishing (France) practices were important product attributes.

For clams/scallops as specific examples of coastal fisheries the research revealed that the communication of sustainable fishing practices will be promising in all study countries. Well introduced and at least partly known sustainability labels such as the MSC label or the Label Rouge should be used for communication. Fresh scallops/clams can profit from underlining the European/domestic origin. This is especially the case for France and Italy and to a lesser degree for the UK.

## 7 RECOMMENDATIONS

(Katrin Zander, Yvonne Feucht, Bertrand Le Gallic)

This section will present our conclusions in form of recommendations for the stakeholders of the European fisheries and aquaculture sector. The recommendations are based mainly on the outcome of the research in WP2 of the SUCCESS project and are amended by some discussions among project partners on these results. Recommendations for policy makers will be followed by recommendations for the industry.

### 7.1 RECOMMENDATIONS FOR POLICY MAKERS

Market intervention by policy should be kept at its minimum. One reason for political intervention is market failure which means that the outcome of market activities is not in line with overall political or social goals. Another reason for intervention is the correction for side effects of established policies in fisheries and aquaculture. Examples are subsidies for fleets and fuel subsidies (or the neglect of negative external effects). These subsidies decrease the production costs of some, usually the better organised and louder ones. At the same time they shift the competitive advantage to large scale systems which often do not provide ecosystem and social services to a similar extent like smaller and more divers systems are able to.

#### 7.1.1 IMPROVE CONSUMER-ORIENTED INFORMATION ABOUT SEAFOOD

Our results reveal that consumers have a general interest in information about the seafood sector and expect information to be easily available. It was shown that consumers need information in order to make decisions in favour of European and sustainable seafood. Lack of knowledge among consumers was found regarding general issues in fishing and fish farming and the related products, regarding sustainability issues (and labels) and origin as well as regarding availability and preparation of specific seafood species.

Even though some information for consumers is available, many consumers are not familiar with it (e.g., awareness of sustainability labels) and/or express a need for more consumer-oriented information. At the same time quite a few consumers feel overloaded by the information offered. Although the interest in getting and processing additional information might be limited in many cases, better availability of information is crucial for that part of the consumers who are interested in. This information should be easily accessible and understandable even for lay persons like many consumers are.

Having in mind that many consumers feel overwhelmed by the huge amount of information they are facing day by day, it is not a question of providing additional information everywhere. Instead, a well-targeted offer should be offered which is adjusted to the particular needs of consumers. Highly interested consumers should be able to get e.g. information on fishing gear and further the explanation of how it works using videos. In contrast, consumers who just look for recipes should not be challenged by sorting out in-depth information on production methods. Also, different occasions, e.g., short and concise information supporting the purchase decision in the store versus more detailed information about a particular labelling scheme which one might rather take a look at outside a shopping situation) should be considered.

In this respect, the internet is a perfect means for several reasons: It is at the hand of almost everybody, it offers interactive communication opportunities, and it has possibilities to address consumers with different technical background. Offering homepages and apps for smartphones with responsive designs might present one way to offer easily accessible and practical advice to consumers.

Given the problem of information overload, it is advisable to carefully weigh the pros and cons of the introduction of new labelling schemes. Existing labelling schemes should be optimised according to consumer needs regarding reliability, quality of certification, the relevance with respect to consumer expectations and the transparency of standards. Label information which can be understood by consumers and which give them the possibility to go more into depth when needed should be provided.

### **7.1.2 SUPPORT LOCAL INITIATIVES AND PRODUCER ORGANISATIONS**

The results of the Deliverables 2.2 to 2.4 highlight that European consumers appreciate local, domestic and European seafood production in diverse systems. It is not only about seafood production but also about ecosystem and social services which are provided by fishing and fish farming not only to local communities. Initiatives connecting fishermen and consumers are of outstanding importance in this regard. By helping fishermen to communicate and to market their produce directly to consumers, they gain competitiveness and increase local income. This way, traditional fishing and fish production systems can be maintained. At the same time, these initiatives contribute to information provision and consumer education by directly communicating with their customers. By supporting local initiatives and producer organisations they will be enabled to better organise themselves and to better market their produce. Production and product diversity can be increased and the development of the small scale European seafood sector be strengthened.

In this context, there is definitely a role for public authorities to promote locally based products through public procurements related to public restaurants (school canteens, university restaurants) menus. To be effective, such procurements need to be appropriately designed to make sure that the increase in seafood products benefits to the local industry and contribute to communication programs. Technically, such a policy option is mostly possible in places where enough supply is made available to the market. But it can also apply to inland places, where inland aquaculture activities already exist or can be developed. Also, some adjustments with respect to public market obligations should be considered. Existing best practices could indeed be further promoted.

## **7.2 RECOMMENDATIONS FOR THE INDUSTRY**

As discussed in the previous section, the results of the research in WP2 highlights that there is room for improvement with respect to the design of the communication efforts. One important lesson to be learnt from our findings is that consumer-oriented information should use a multichannel approach and consider different consumer segments.

Information at the point of sale (e.g. on the package) should be short and concise and can be very important for decision making. Labels are a major source of information and their use is recommended, although the pros and cons of labelling schemes should be carefully weighted facing frequent information overload. The content of labelling schemes has to be well communicated in order to be transformed into search cues for consumers. In general, information has to be reliable, open, honest and fair. Communication strategies need to consider cultural differences, such as consumers' sensitiveness to sustainability issues which are e.g., more prominent in Germany than in Poland.

The industry should use their online offers for presenting hands-on as well as more complex and in-depth information to consumers. Online content should use visual material, be interactive and easily accessible. The internet offers large possibilities for story telling about the origin and the production (from catch to plate) of particular seafood and can thus increase knowledge of, identification with and trust in a seafood product or production system.

The results of the research in WP2 are good news for the European seafood sector. European consumers are generally interested in local, domestic and European seafood and in many cases prefer products from these origins over products from outside the EU. Promising attributes for targeting

these preferences are short transport distances, a very high freshness as well as the support of the local/domestic economy followed by sustainability aspects (For more details see D2.2).

However, to fully reap the benefits of this trend, both (effective) traceability and knowledge should be reinforced, especially for the young generations. In this context, the training of stakeholders across all the value-chain, including retailers' staff and policy makers, should be made a priority.

## ANNEX 1: SOME ICONIC REPRESENTATIONS OF SCALLOPS



Sandro Botticelli, The Birth of Venus (1485).



Saint-James symbol (Photo by Catholic Cuisine in the Middle Ages)

The scallop shell was a holy symbol that was worn on the cloaks of pilgrims traveling to the shrine of Saint James the Apostle, a fisherman of Galilee. According to legend, Saint James body was lost at sea on the way to Spain for burial. Miraculously, his body was washed ashore, undamaged and covered in scallops. The scallop shells were said to signify the love of God and one's neighbour, and the ridges were said to signify the good works that pilgrims would perform on their return. In honour of Saint James, the French named scallops Coquilles St. Jacques – "Seashells of Saint James." Coquilles St. Jacques is also a classic dish featuring sea scallops baked in their shells with white wine sauce and a crust of breadcrumbs and cheese. (Source:

<https://lobsteranywhere.com/seafood-savvy/how-to-buy-fresh-scallops/>).