Deliverable Report

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Objective: The objective of this Deliverable was to investigate the industrial buyers' preferences, in order to gain insights into their buying criteria and perception of aquacultured fish. More specifically, the survey covered industrial buyers' preferences in terms of country of origin, suppliers, production circumstances, types of products, pricing and quality. These insights have to identify dimensions for expansion of the category.

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1. Introduction

In this Deliverable, the objective was to map the value chains for the candidate species (meagre, Atlantic halibut, pikeperch, grey mullet, wreckfish, and greater amberjack) of DIVERSIFY by means of an international survey in selected countries (UK, France, Spain, Germany, and Italy). This study investigated the industrial buyers' preferences, in order to gain insights into buying criteria and cultured fish perception. More specific, industrial buyers' preferences in terms of country of origin, suppliers, production circumstances, types of products, pricing, and quality are covered. This report presents the results of the international survey on industrial buyers' attitudes and perceptions regarding cultured fish.

The structure of this report is as follows. First, the theoretical background for this market research is outlined. After that, the methodological section describes the data collection protocol, the primary data sample, and the data analysis. Results describe the general EU fish buyer market (*i.e.*, the main market segments and characteristics of the five selected countries) and buyer behavior and preferences in the five selected countries.

2. Theoretical Background

The value chain for farmed fish consists traditionally of wholesalers, retailers, and foodservice companies- all differing in their requirements. A fish producer needs to know how the industry is structured and what influences downstream buying behavior (Halbrendt, Wirth & Vaugn, 1991). In general, three key elements of buying behavior can be defined (Fisher 1976), being: 1) the *structure,* or who participates and what are the roles of the decision makers, 2) the *process,* or how the decision-making takes place within the buying organization, and 3) the *content,* or which criteria are used at the different stages by the different participants (Fisher, 1976 in: Jobber & Lancaster, 2012). The latter, thus, relates to buyer preferences, criteria, and perceptions. But to understand these in detail it is important to also examine structure and process. Uncovering the development of the buying process, the primary buying criteria, the parties involved and experiences within the category, thus, provides valuable insights for suppliers (Drumwright, 1994), or more specifically, fish producers.

The *structure* of the buying decision is usually determined by the organizations decision-making unit (DMU), which consists of individuals having several identifiable roles within the buying process (Jobber & Lancaster, 2012). Many of the wholesalers, retailers, and foodservice companies have divided the coordination of their buying and product assortment between marketers, buyers, and/or category managers (Cachon & Kök, 2007). Category management is a retail concept where the range of products purchased by a business organization or sold by a retailer is broken down into distinct groups of similar or related products (*i.e.*, product categories such as frozen or fresh fish). Within category management, price competition and assortment planning are considered to be necessarily aligned, to assure that similar products and their marketing and buying strategies complement each other – instead of capitalizing on each other's market share (Cachon & Kök, 2007). It is a systematic, disciplined approach to managing a product category as a strategic business unit with the aim to add value to the retailers' business (*i.e.*, shift power from supplier to buyer).

The *Process* of the decision-making in general passes through several stages (Jobber & Lancaster, 2012):

1. Problem or need recognition stage, which can be recognized through either internal or external factors (*e.g.*, input from market research, policy makers, fish suppliers);
2. Determination of product characteristics, specifications, and quantities – the buying preferences;
3. Search for potential suppliers;
4. Analysis of the offerings or proposals;
5. Selection of suppliers;

6. Payment and delivery details - Since inventory is mostly handled based on a just-in-time principle, buyers require fast and adequate communication with suppliers and trust delivery of the agreed volumes on time[12];
7. Performance feedback and evaluation –for example the sales data of a specific fish product.

Finally, the *content* aspect of buying behavior, the 'what' factor, refers to the choice criteria used at different stages of the process and by different members of the decision-making unit (Jobber & Lancaster, 2012). These can usually be divided in economic criteria, such as price and quality, and emotional criteria, such as the risk perceived in the buying of a certain product or the convenience of the buying process. Buyers, their behavior and their preferences are often influenced by several aspects (Mattson, 1988). The environment in which they operate, for example the economic situation, politics, cultural preferences and the industry, also influence the objectives they aim to achieve with their buying decision (Mattson, 1988). For example, industrial buyers within the fish sector generally face a growing consumer demand on the one hand and decreasing resources on the other. Other important aspects influencing buying behavior are related to specific product characteristics (Jobber & Lancaster, 2012), such as shelf life or whether farmed fish substitutes wild catch.

3. Methodology

To identify international buying preferences and market information specific for the five selected countries, a qualitative survey was conducted. Since previous studies have not considered the buying process of farmed fish and specifically for the six species of the DIVERSIFY project a qualitative research design is most appropriate (Lee, 1999). We draw on a combination of desk research and a qualitative field study to develop an in-depth insight in industrial buying behavior (Eisenhardt 1989; Pratt 2008; Strauss and Corbin 1998). In the next section, we describe the data sources and qualitative field study.

3.1 Data sources

Informants: We conducted interviews and collected secondary data (incl. observational and archival data) to establish construct validity during a 7-month field study in the period of May-November 2014. The main source of data was semi-structured interviews with industrial buyers (see Appendix, A. Interview protocol). Table 1 on the next page shows the characteristics of the interviewees (anonymized). A total of 60 people were contacted multiple times, of which 14 agreed to participate, resulting in a response rate of 23%. Interviewees worked in the retail industry, the foodservice sector, wholesale and fish feed production. This broad approach resulted in an overview of the total market, from those supplying the industry to those selling to consumers. We identified key decision makers, these involved buyers and category managers of farmed fish. The interviewees were directly involved in the planning, design, and execution of the buying process and therefore had significant knowledge of the market. In developing the sample, the diversity among the participants was maximized to uncover buying decisions and determine practices and insights between buyers of farmed fish.

Archival data: We collected a variety of documents and other archival data. It aimed to help better understand the buyer context and validate data from the buyer interviews. Various kinds of data such as official international reports were included in the investigation. These were obtained through extensive desk research into official websites or provided by economic representatives of Dutch embassies in Germany, France, the UK, Spain, and Italy. Data came from presentations, brochures, and official market reports. These provided insights into the general European market, relevant segments selling seafood, and detailed information on the markets of the selected countries.

Table 1: Contact characteristics.

Interviewees			
Country	**Company info**	**Contact #**	**Function**
UK	Retail, 500+ stores, 17,2% market share	1	Quality & Sustainability manager Fish, Seafood
UK	Foodservice, 10000+ sites	2	Category Manager Fish & Seafood
UK	Foodservice, 10000+ sites	3	Senior Procurement Manager Fish & Seafood
UK	Foodservice, 10000+ sites in UK, main focus fish & seafood	4	Director Fish & Seafood
Germany	Retail, 77 stores worldwide	5	Category Manager Fish & Seafood
Germany	Retail, 5000+ stores worldwide 26% market share	6	Marketing & Sales , Fish & Seafood
Italy	Wholesale, 15 mln kg fish yearly, 500 customers	7	Head of Research, Development & Quality
Italy	Retail, 1400+ stores, System of various consumer cooperatives	8	Responsible Sales, Fish & Seafood
Spain	Retail, 172 Hypermarkets, 118 supermarkets, 166 convenience stores, 26% market share	9	Buyer Fish & Aquaculture products
France	Wholesale, 22.500 tons seafood products, France & Asia	10	Head of marketing
France	Retail, 128 hypermarkets, 262 supermarkets, 12% market share	11	Buyer Fish & Aquaculture products
NL	Fish Feed company, 100+ production facilities, 8 R&D sites, operates in 10 countries	12	Head of R&D Europe, Africa
NL	Retail, 850+ stores, 34% market share	13	Category Manager fish
NL	Retail, 47 self-service stores, 10 delivery stores, 30% market share	14	National account manager Fish

Interviews: We conducted semi-structured interviews with all informants. Before the interview, each respondent received a short description of the purpose and scope of the interview. Most respondents were interviewed face-to-face or by telephone. The semi-structured interviews took up to one hour. Some respondents indicated that they were not available for that much time, we therefore asked them to submit answers to the interview questions in writing and contacted them afterwards by telephone to ask for additional explanations, where needed. During the interview, extensive notes were made, which were cross-checked within 24 hours after the recordings of the interviews. We began the interview by asking informants to give a short description of their firm and personal backgrounds. All questions were based on established research on buying preferences and processes (Drumwright, 1994). The full survey can be found in Appendix B. The survey was adapted to the sector using secondary data on buying preferences (CBI Market information, 2012) and were pre-tested through preliminary interviews with two industrial buyers in the Netherlands. The survey covered the following topics:

- General market
- Category management
- Buying criteria
- Structure of buying decision for farmed fish
- Desired outcomes/sales objectives
- Concerns for the environment; importance sustainability
- Experience with farmed fish
- Problems encountered obtaining/selling farmed fish
- Market potential for species involved

3.2 Analysis

We integrated all data and developed a codebook according to grounded theory (*i.e.*, open, axial, and selective coding) to analyze the data structure (Appendix, B. Codebook for analysis of interviews). This encoding procedure was according to well-established qualitative research procedure by Glaser and Strauss (2009). NVivo software was used to analyze systematically the coded structure, and to obtain results for within and between countries/industries. In addition to this, interviews were summarized with relevant quotes on the overall coding scheme. Three researchers cross-checked several of these summaries on relevant coding. This revealed patterns through consumer preferences, market demands, industrial buying preferences, buying processes, supply chain decisions and commercial opportunities. We applied the principles of data and researcher triangulation to ensure the trustworthiness of the results.

4. Results: Market descriptions

Based on desk research a description of the overall European market was made that helped the researchers interpret the data from the interviews with the industrial buyers. Figure 1 provides a schematic overview of the European fish market. It shows that there are two main industrial market segments that sell fish to consumers: the retail segment and the food service segment. Fish producers supply to these segments mainly indirectly via traders, wholesalers, agents, and/or the processing industry.

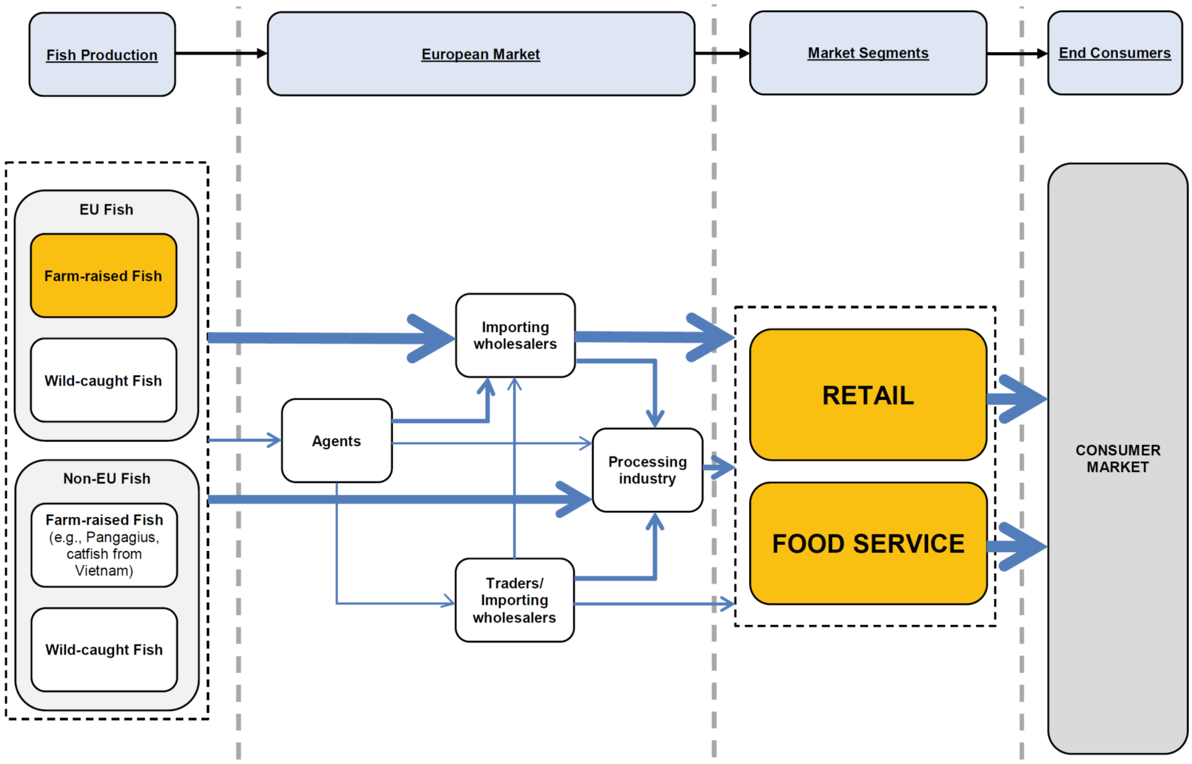

Figure 1: Schematic overview of European fish market.

4.1 European market [345]

The EU is the world's first importer of seafood, accounting for 24% of all value exchanges worldwide. Consumption patterns and preferences vary between northern and southern European countries. While northern countries focus on processed fish, southern countries focus on fresh products. Seventy five percent of seafood products in the EU come from capture fisheries. Seafood consumption per capita seems to have reached a plateau, while consumer prices for seafood increase faster than for other foods. This can mainly be attributed to the current economic situation -especially in southern EU countries. The countries with the highest total expenditures on seafood are Spain, France, Italy, Germany and the UK. Of these, Spain, France, and Italy cover almost 60% of the total expenditures within the European Union. The highest volumes of import from non-European countries are from Spain, Germany, Denmark, Sweden and the UK. Portugal, Spain, Italy, Luxembourg and France have the highest seafood expenditures per capita, whereas the Netherlands has higher expenditures per capita than the UK.

Secondary processing and other value-adding activities such as breading, battering, or marinating occur at several seafood processing companies throughout the EU [6]. Most large retailers and food service companies that sell farmed fish do not source products themselves, but make use of a few large importing and wholesaling companies. However, trends indicate that retailers increasingly try to source their products directly from fish producers as this ensures better control over the supply chain. The two main segments selling (farmed) fish to consumers are retail and food service. In southern Europe, seafood consumption levels are higher and consumption habits are more traditional than in northern and western Europe. While the majority of southern Europeans know how to prepare fish, consumers in northern and western Europe generally have less experience with fish and prefer portioned and ready-to-eat products.

4.1.1 Retail Segment

Figure 2 below represents the three main categories of companies active in the retail segment. The retail segment is defined as *all shops selling products directly to consumers for the use of those products at home* (CBI Market information, 2012). The high-end segment mainly consists of exclusive supermarkets and organic supermarket chains. The middle-range segment consists of large supermarkets and hypermarkets, while the low-end segment consists of discounters.

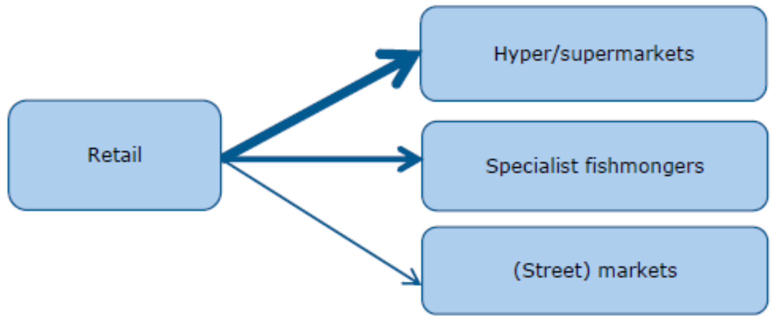

Figure 2: Retail segments [6]

Large supermarket chains and discount supermarkets dominate the retail channel segment for seafood products with market shares of up to 80% in northern and western Europe. Specialist fishmongers and street markets have high market shares in southern Europe (especially in Spain, Italy, and Greece, where market share is at around 50%). However, large retail chains in these countries are increasing their market share at the expense of fishmongers, owing to the trend of one-stop shopping. Fishmongers in particular still play a role in the distribution of fresh products, while the supermarkets have larger shares for frozen seafood. Quality and sustainability requirements for supermarkets are high and demand is relatively stable.

There are over 420,000 non-specialist food retail stores in Europe, dominated increasingly by a relatively small number of large retail chains with concentrated buyer organizations. The number of retailers is expected to decline, as large retailers, such as Carrefour or Ahold, are increasingly importing low and medium-value bulk products directly. Large retail chains use quality and sustainability standards and have strict delivery agreements about service, packaging, health and safety requirements. Certifications are a prerequisite, and northern and western European supermarkets are increasingly committing themselves to selling sustainable seafood.

4.1.2 Food service segment

Figure 3 represents the three main categories of companies active in the food service segment. The food service segment can be defined as *all companies selling seafood products for out-of-home consumption*. The high-end segment consists mainly of exclusive hotels and restaurants as well as specialist fast food and takeaway chains. These companies often focus on sustainable or locally-sourced seafood products. The medium-range segment consists of the institutional market, *e.g*., universities, hospitals, and canteens, while the low-end segment consists of fast food chains.

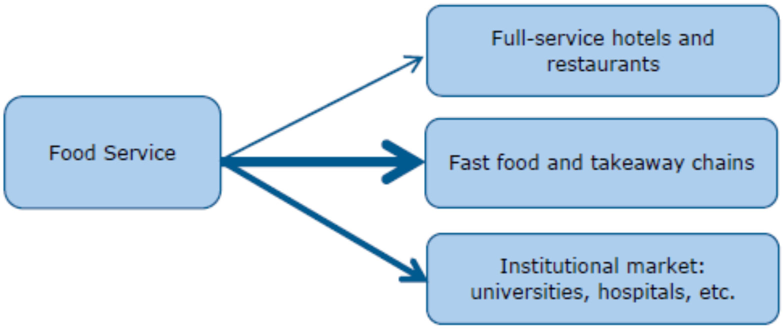

Figure 3: Foodservice segments [6]

Emerging trends for the foodservice sector suggest that consumers desire authentic food, fast dining, ethnic cuisines, and are health-conscious. A background story relating to the authenticity of species needs to underlie the product; this allows the product to be marketed with a health-conscious food label. High-value products serve the niche market of young people who are health-conscious and care about the environment. French and Italian consumers in the out-of-home segment are much more in favor of traditional southern European flavors, while customers in Germany and the UK are much more in favor of exotic flavors. The preference for exotic foods is expected to show particular growth in western, northern, and eastern European countries, while southern European consumers will continue to prefer local flavors.

In recent years, consumers in the southern European countries have already been seen spending less in full-service restaurants, while spending more in the fast food segment. This trend is expected to continue in the short term. In the institutional and fast food markets, demand is increasing for value-added products such as breaded shrimp or portioned fish.

4.2 The five selected countries

4.2.1 Spain[1 2 7 8]

Total expenditures on seafood in Spain accounted for over 21% of the total EU expenditures in 2012. Currently, the Spanish consumption of fresh fish is changing in favor of frozen and processed fish products, due to their lower prices. In 2012, 74% of market value was accounted for by fish caught in ocean, coastal, and inland waters. However, farmed fish grew faster and accounted for the 26% of market sales in 2012. The prospects for a speedy economic recovery do not look promising in the short term. In a survey carried out by a large Spanish retailer on fish-eating habits, respondents stated a preference for fish caught using environmentally friendly methods. This shows that consumers would value more information about sustainable fishing, although only half of the interviewed stated that they would be willing to pay more for sustainable fish.

In total there are around 2,700 companies active in the Spanish seafood industry. Several wholesale markets specialized in seafood focus on fresh products, but considerable volumes of frozen products are distributed to the traditional retail (local fish markets) and foodservice segments. The foodservice market in Spain is fragmented. The top ten foodservice companies represent only 6% of the total market. Most of the foodservice outlets still purchase fish at the local MERCA’s (auction houses). The retail sector in Spain is more consolidated. The largest 10 retail groups have a market share of over 65%. Revenues from fishing increased by 30% over 2006-2012.

4.2.2 France [1 9]

The total expenditures on fishery and aquaculture products in France accounted for more than 18% of the total EU expenditures in 2012. France is also one of Europe's major producers of farmed aquatic organisms, with oysters (41%) and mussels (36%) accounting for the bulk. Although French consumers are already acquainted with fish farming, they still perceive farmed fish as of lesser quality and less healthy when compared to wild catch. This traditional image is an issue, as French consumers mention taste and health as the main reasons for eating fish. But since the consumption of farmed salmon increased over the years, this perception is changing. The major growth of salmon consumption has also contributed to an increase in the demand for fish fillets. Although in some regions French consumers do eat freshwater fish, the French consume mostly marine fish.

Among French consumers, the total household expenditures in the foodservice sector have declined since 2011. In 2013, 52% of the meals sold in this sector were sold in restaurants and 49% in commercial catering. The bulk of fish products purchased in France consists of non-processed fish species and (raw) shellfish. Salmon (18%) and cod (13%) are the fish species mostly bought through the foodservice sector, and prices have increased the past few years.

4.2.3 Italy [1 2 10 11]

The total Italian expenditures on fishery and aquaculture products accounts for over 18% of total EU expenditures in 2012. In general, Italians prefer whole fish. Consumption is based mainly on fresh seafood (53%), followed by canned (20%) and frozen (15%) seafood.

The main distribution channels in Italy are through wholesalers/importers working at a regional level, local traders, and distribution platforms for hypermarkets and superstores. Most of these import directly and/or complement suppliers via wholesalers and importers. The health benefits of seafood are being promoted by a number of governmental campaigns. Therefore, fishery products need to be presented in such a way as to facilitate consumption. Certification is especially important in Italian supermarkets. Italy has a large market for sustainable seafood. Therefore, investments in Aquaculture Stewardship Council (ASC) or Friend of the Sea (FOS) may be important to consider, when looking to distribute to Italy.

4.2.4 Germany [1 12 13 14 15]

The total fishery and aquaculture products expenditures in Germany accounts for a little over 9% of total EU expenditures in 2012. In 2012, the consumption of fish and fish products has declined, while at the same time the prices have gone up. The consumed products can be divided into frozen, conserved, fresh, shellfish and smoked fish. Germans consume both marine and freshwater fish. On average, the German consumer buys 5.2 kg of fish per year, although differences still exist throughout regions (GfK). Sustainability and regional products become increasingly important in the offer of food and aquaculture products within retail. The number of available organic products continues to grow (boel.de). Especially consumers in the South of Germany have an interest in sustainably produced products (Ministry of Economic Affairs, 2012).

The main suppliers of fish usually come from outside of the EU (China and Norway). Within the EU, Poland and the Netherlands are the most important partners. The buying and import of fish products in the retail section in 2012 was mainly divided through supermarkets, discounters, and fishmongers. The major retailers are the regular supermarkets (Kaiser Tengelmann, Edeka, Metro Group), and the discounters (Aldi, Lidl, Netto, Norma). The foodservice industry in Germany is complex, heterogeneous, and becomes increasingly important. In 2012, the German foodservice industry reached total revenue of 68 billion, of which 40% was earned through regular Hotel-Restaurant-Catering, 32% through quick service, 17% through special program (varieté) shows and 9% through cafeteria.

4.2.5 UK[1] [16]

For the UK, the total expenditures on seafood products accounted for nearly 8% of total EU expenditures in 2012. Overall seafood consumption in the UK in the past few years has decreased slowly, as the prices of seafood products have increased. For 2011, the per capita purchase of seafood per week was 147 grams, while this was 170 grams in 2006. Consumption of seafood in the UK in the future is expected to grow. Factors supporting this are increased health awareness, an increase in household spending, advanced technologies in aquaculture and fisheries, and an ageing population. Although sustainability is a major issue in the UK market, sustainability certification schemes are less dominant than the Netherlands or Germany, for example. In the UK major retailers and foodservice companies have their own strict requirements for responsible sourcing and minimizing negative environmental impact. In 2011, 26% of the purchases of seafood consisted of various white fish products (fresh, frozen, smoked, dried, salted). Besides the traditional fish species, it is expected that other fish species may also gain market share. Diversification of the product range of fish species is recognized as important by major retailers in order to reduce pressure on the traditional species.

5. Buyer attitudes & perceptions

Table 2 provides a structured overview of the countries included in the primary data collection. To understand attitudes and perceptions, we also included the structure and process of the buying. The countries are thus compared on market characteristics, different aspects of the internal buying process, and farmed fish perception.

5.1 Country specific buyer attitudes and perceptions

5.1.1 UK

General market information: UK consumers mostly eat fillets or portioned meals. They are looking for convenience, so fish that is easier to prepare. They eat mostly marine fish - although freshwater fish are sometimes smoked. They consider fish a healthy food. Different market segments require different food specifications, as for example when selling fish to children.

Category management & range: Retailers and foodservice companies closely monitor market and sales data and manage their products based on market demand. *"So just what the trends are in our current food market. But we don't drive those trends we react to them".* They sell a broad range of products. Fresh is considered to influence the frozen category. Retailers use brand management and sell both private brands and store brands. The product range is mostly focused on convenience where they sell fillets and pre-seasoned fish – except for the high-end restaurants.

Buying preferences & process: Buyer's main criteria are market demand - they only produce what the market demands. This is followed by sustainability, especially in retail when fish is not sustainable they will not source it. Price and quality are also important criteria, prices and volumes are mentioned as being related: *"So there is a very clear relationship between price and volume. We sell a lot of Pangasius, not a great fish but we sell a lot of it because it's great value".* The buying process may start two-sided, depending on the opportunity and the product. They buy fish through auctions and directly from their suppliers. When evaluating a new product, both retailers and foodservice companies sample the product as a team. If the product fits with the current range or menu they might add it and this also affects the price they set – the reputation of a product influences its sales. Depending on the product, category managers usually launch a product in stages: *"And then we would be able to establish where to position a particular species within the rest of our menu, if it's for a lower end level menu or is it for a high end restaurant, because that would then affect what price customers would be willing to pay for it".*

Table 2: Overview country analysis.

		UK	Netherlands	Germany	Spain	France	Italy
Market insights	*General market information*	***Low consumer awareness*** ***Convenience products*** Sustainability importance Prefer ***marine fish***	***Low consumer awareness*** ***Convenience products*** ***Marine fish*** Sustainability importance	***Consumers becoming aware*** Locality (i.e., region) more important ***Convenience products*** ***Both freshwater and marine fish***	***High consumer awareness*** ***Negative image processed*** Freshwater and marine fish Prefer regional fish	***High consumer awareness*** Health & taste matters ***Different consumer groups*** ***Mostly marine fish***	***High consumer awareness*** Sustainability becomes important ***Prefer regional fish***
Internal (Buying) Management	*Category management*	• Broad product range • Fresh influences frozen • Mostly marine • Brand management • Convenience • Analyze data	• Looking to expand range • Fresh dominates frozen • Mostly marine • Analyze data • Convenience	• Broad product range • Fresh and Frozen • Freshwater & marine • Store brands and Private labels • Large counters	• Different categories (white, blue, shellfish) • Fresh dominates frozen • Freshwater & marine • Large counters	• Broad(er) range (weekend) • Fresh leads • Mostly marine fish • Several levels of quality • Large counters • Little marketing	• Broad range • Fresh, frozen, seafood • Farmed fish 80% of volume • Wild catch mainly local
	Category range (i.e., Products)	• Fillets, portions • Preseasoning fish (e.g., marinades and "Rub-in-ades") • Processed	• Fillets, portions • Preseasoning fish (e.g., marinades and "Rub-in-ades") • Processed	• Fillets, portions • Preseasoning fish (e.g., marinades and "Rub-in-ades") • Processed	• Traditionally whole fish • Change to fillets • Less prepackaged or seasoned	• Whole fish and fillets • Mainly fresh fish • Processed	• Traditionally whole fish • Fresh fish • Processed
	Main Buying Preferences	1. Market demand 2. Sustainability 3. Price 4. Quality	1. Quality 2. Country of origin 3. Price 4. Certification	1. Market demand 2. Quality 3. Price 4. Sustainability	1. Country of origin 2. Quality 3. Price 4. Total service offered	1. Price 2. Quality 3. Country of origin 4. Environmental impact	1. Price 2. Quality 3. Standardization 4. Availability
	Buying process	• 2-sided initiative • Formal processes • Direct purchases & auctions	• 2-sided initiative • Formal processes • Direct purchases • Auctions monitored	• 2-sided initiative • Formal process • Direct purchases • Story to tell	• Supplier initiates • No formal process • Direct purchases & auctions • Regional acceptance	• Supplier initiates • Formal process • Direct purchases & auctions	Approaches suppliers: Customer demand, market trends
	Supplier Selection Criteria	• Certification • Innovative outlook • Farm management • Supply chain management • High volume capacity	• Certification • Continuity • Farm management • Supply chain management	• Certification • Innovative outlook • Continuity • Supply chain management • Fixed prices & quality	• Certification • Innovative outlook • Farm management • Prefer local suppliers • Service	• Continuity • Supplier relationship • Farm management • Prefer local suppliers • Price	• Certification • Continuity • Farm management • Supply chain management • Price
Farmed Fish perceptions	*Farmed Fish Perception*	**Positive** due to standardization (Consistency, processing, predictability)	**Positive** due to standardization	**Positive** due to standardization and relieve pressure from wild	**Moderately positive** due to standardization – farmed competes with wild	**Moderately positive** due to standardization – farmed competes with wild	**Positive** due to standardization
	Insights to Expand ***Farmed Fish*** *Category*	• Convenience food • Consistency • Big volumes • Fit range	• New species to be added • New processed products (retail sushi) • New tastes	• EU farmed shrimp needed • Regional or EU farmed products • City farming for local supplies with small volumes.	• Preparations • New ways of cutting • Marketing/promotions	• Different species • Innovation mainly through processing • Image improvement	• Branding to increase value perception • High value white fish • Organic segment
	Diversify species awareness	**Aware**	**Moderately Aware**	**Moderately Aware**	**No real awareness**	**No real awareness**	**Aware**
	Diversify species interest	• Greater amberjack really interesting • Atlantic halibut, meagre established • Grey mullet, pikeperch, wreckfish not interesting	Species like greater amberjack or pikeperch would be interesting.	• Pikeperch, Atlantic halibut established • Greater amberjack really interesting • Grey Mullet, meagre unknown • Wreckfish needs new brand name	• Like difference of species. • All species will compete with wild catch.	• Atlantic halibut already established • Pikeperch not interesting due to bad image farms • Price, quality, image make unique selling point (USP)	• Greater amberjack main interest • Meagre also interesting • Atlantic halibut not, prices too low • Grey mullet interesting

Supplier selection: Suppliers are selected based on them going forward. Also, certification is used as an industry quality indicator. Important is how farms are managed, and how the supply chain is managed. Country of origin is not important when a supplier is able to provide fresh fish with short delivery time. Suppliers are expected to deliver high volumes consistently. Both retailers and foodservice companies cooperate with suppliers.

Farmed fish perception: Buyers in the UK are very aware of the species within the project. They have a positive perception towards farmed fish due to its consistency which eases the processing, and mention the predictability of supplies: *"Farmed fish has the enormous benefit of being relatively predictable"*. Buyers do mention some issues with farming standards, feed and animal wellbeing which are considered typical for farmed fish: *"So from a sort of controlled and technical perspective there is more work to do with farmed fish, to make sure that the farming that is happening is being done in the right way"*.

Category expansion: The farmed fish category might be expanded by providing more convenience food, consistency is an important characteristic, the ability of suppliers to provide big volumes and if new products would fit with the current range.

DIVERSIFY species: Buyers and category managers in the UK are especially interested in greater amberjack, which they consider a high-value species. Atlantic halibut and meagre are already established, they don't see an opportunity for more farms or researching those species. Grey mullet and pikeperch are not interesting as these wouldn't fit the UK pallet. Wreckfish would not do well on a menu, so it would be too difficult to position.

5.1.2 Netherlands

General market information: Dutch consumers traditionally don't consume much fish. They are not really aware of differences between species and sustainability – although they are becoming more aware due to media attention on these issues. They trust on retailers to provide them with trusted products. They eat mostly marine fish and convenience food.

Category management & range: Dutch retailers and foodservice companies are looking to expand their fish range, where retailers slightly more as they now offer a smaller range compared to foodservice. Most innovation is done within the fresh fish category, which usually influences frozen. Retailers actively analyze data to determine market preferences. They mostly sell convenience food, like fillets, portions and pre-seasoned products. Fish sticks are among the top selling products. They use certification as an industry quality indicator, new species or products are promoted through price promotions by retailers. Foodservice companies influence actively the reputation of a new product, for example by making it appear more exclusive or high-end when availability is low and unstable.

Buying preferences & buying process: Quality is the main buying criterion, followed by country of origin. Taste is important for foodservice companies, less for retailers. Although it is not important which country the supplier delivers from, it does matter how the fish is farmed and processed. This might mean that certification becomes more important. Price is also important, but less relevant than quality and where the fish originates. The buying process is usually a two-sided initiative, where formal processes are followed. Both retailers and foodservice buy directly from suppliers but monitor auctions to determine price. In the entire process, the category manager, the buyers and the marketing department work closely together.

Supplier selection: Suppliers are selected based on their certification, how they manage their farms and if they are able to meet the high supply chain demands. Continuity is important, Dutch retailers and foodservice companies need a continuous and reliable supply. Because of this, they prefer to work with known and trusted suppliers, as they believe a short production chain and good supplier relations are important.

Farmed fish perception: Buyers perceive farmed fish as a good alternative to wild catch due to its predictability and standardization.

Category expansion: Buyers within retail are looking to expand the category. This might be through new species added, or new applications for fish products, such as selling sushi through retail. Foodservice is more interested in higher quality fish or new species.

DIVERSIFY species: Pikeperch is known, not very developed, but could be interesting. Greater amberjack would be interesting for foodservice, the high-end segment.

5.1.3 Germany

General market information: German consumers are becoming more aware of fish products and their sourcing. Although German's mostly buy fillets, they eat both freshwater and marine fish. Consumers consider freshness an important quality and increasingly prefer regional or local products. They are easily influenced by the media and demand more sustainable fish or information on how it was produced. German consumers rely on the retailers they are buying from, not on certification.

Category management & range: German retailers sell a broad product range, mostly at fresh fish counters. They also import certain frozen products from Asia, which are defrosted and sold at counters. Retailers sell store brands and private labels, and the main product form are fillets - although they sell a lot of smoked fish too. They also offer consumers fillets, which are pre-seasoned, or provide their customers with menu options. Important is the interaction at counters between sales people and consumers. One German category manager said: *"When the fish come in they are already filleted, our sales people usually don't fillet because they are selling, they interact with the customer"*. They would use cooking shows and cooperation with suppliers as important marketing instruments: *"If there is a good cooking show with a well-known chef our customers will come to ask about the fish at the counter"*. They need a good, easy, and quick story to tell their customers. They also offer promotions.

Buying preferences & process: Retailers' main buying criteria are market demand. Market opportunity determines if a product is considered. Next to this, the quality of the product and its price are important – they don't compromise on quality for price. Also, sustainability is becoming more important. While large retailers are able to demand sustainable or certified fish, smaller retailers need to rely on wholesalers' availability. Because of this, smaller retailers look for local fish farms to provide new opportunities. The start of the buying process is a two-sided initiative, where retailers rely on established and formal processes. Retailers prefer increasingly to buy products directly from farms, but due to the relatively smaller volumes of fish they sell they are also depending on wholesalers. They give new products a lot of time and marketing support to become established: *"So for some products I push my salespeople to keep selling the fresh fillets, we need months for a new product to become successful"*.

Supplier selection: Suppliers are selected based on their certification, which is considered an industry quality indication. Also, suppliers need to constantly innovate in their production and processing. It is important to have continuous suppliers, multiple times a week – so they look for partners able to provide that. Especially for smaller retailers, who rely on their trusted suppliers for the specialized transportation of fish: *"But because of the logistics we work very closely with our trusted German wholesalers"*. How that supply chain is managed is also something retailers evaluate. They aim for fixed prices and quality.

Farmed fish perception: German buyers have a positive perception towards farmed fish, they appreciate the opportunities it provides, the standardization, and that is relieves pressure from the wild. Issues with animal welfare, feed, and environmental impact are important to consider: *"We need higher standards for animal welfare, food safety and the use of antibiotics or chemicals"*.

Category expansion: There is an increasing demand for regional or EU farmed species. Several local projects exist, which provide fresh supply towards the stores – such as city farming on the roof of a large store. Also, there is a need for EU farmed prawns.

DIVERSIFY species: Pikeperch and Atlantic halibut are already established, according to a category manager: *"Farmed pikeperch would be interesting if you could farm it and transport it fresh from Europe and cheaper than wild"*. Retailers are also trying to sell greater amberjack. This is an interesting fish, but at the moment too expensive: *"The kingfish* (an Australian relative of greater amberjack) *we sell from our local farm, we put the whole big fish on the counter so people become interested and ask about how they can buy it and if we can cut it up into fillets. It is good because it is like tuna, a firm fish but really expensive now"*. Buyers are unfamiliar with grey mullet and meagre, and suggest that wreckfish would definitely need a new name when considering the German market.

5.1.4 Spain

General market information: Spanish consumers associate fresh fish with better quality than frozen, which is why most effort of retailers is aimed at the fresh fish counters. They prefer national – or even regionally – produced fish over imported fish. As one buyer noted: *"if it is a Spanish fish from Valencia then people from Valencia will relate that to higher quality"*. Spanish consumers eat both freshwater and marine fish. Furthermore, the Spanish consumer perceives prepackaged or pre-seasoned fish as being of lesser quality, and these sell less than fresh fish filleted at the counter.

Category management & range: The fish category in Spain is divided by fish typology, where most farmed fish are white fish (except salmon). Retailers used to sell more whole fish, but are increasingly selling fillets. They also sell less prepackaged of pre-seasoned fish. Buyers each manage their own typology and work closely with the marketing departments. Retailers mainly use promotions to increase sales, but for new species they also offer recipes. Prepackaged and processed fish are delivered by suppliers. The larger Spanish retailers focus most of their current development efforts at the processed foods.

Buying preferences & process: The buying decision is mainly influenced by the country of origin of the fish. For retailers, the quality and freshness of the products is really important. There is a trade-off with price, especially for farmed fish, as these are expected to compete to wild catch on price. This is a difficulty, especially when wild caught fish are sold for low prices at local auction houses. Often the buying process is initiated by the supplier. There is no formal process and retailers buy at both auctions and directly from their suppliers.

Supplier selection: For larger retailers, supplier certification is important. Also the suppliers' innovative outlook is evaluated. Another important distinction is based on the total service delivered by that supplier. As buyers are aware of the questionable production standards of fish farms in developing countries, how suppliers manage their farms is an issue. They aim to visit farms before deciding to source from a supplier.

Farmed fish perception: Buyers' overall perception of farmed fish is moderately positive. Spanish buyers believe farmed fish are an interesting option, which sell really well because of its continuity and price. As they said, the image of farmed fish is an issue, it still competes with wild catch: *"The potential of all species in the project lies in the lack of fish from wild-capture fishing. For example, the codfish from aquaculture is disappearing because it cannot compete with the one from wild-capture fishing"*. Certification is really important for considering farmed fish, which are EU certifications and company-specific sustainability demands. When a supplier approaches them with new species or products, Spanish retailers are interested in innovating within the category, and willing to cooperate.

Category expansion: Retailers consider the best opportunities for innovating in the farmed fish category to be within new preparations for fish, the way the fish is cut, and alternative marketing or promotions.

DIVERSIFY species: Buyers are not really aware of the different species. For all species, the opportunity to compete with wild catch lies within the availability, the quality and the price. The DIVERSIFY species are considered an interesting option, as long as they can co-exist with current existing species like salmon, sea bream, tilapia and cod.

5.1.5 France

General market information: French consumers indicate that they buy fish based on quality, health, and environmental conditions. Despite of this, the most popular fish is salmon because of its price. Taste is important to French consumers, and most consumers of fish are over 50. These people buy whole fish, while younger people, looking for convenience and unknowledgeable on the preparation buy mostly fillets.

Category management & range: French retailers mostly sell fresh fish, both fillets and whole fish. They also sell processed products. Large retailers sell a broad category of fish products at large counters, even broader during the weekends. They maintain several levels of quality, where they manage each quality indicator a little different. Fresh is considered the most important, due to the French perception of frozen. Also, marine fish sells better than freshwater. A French category manager stated: *"The sales process of freshwater products and marine fish are not comparable… most of France is a "coastal" country, so culturally marine fish are more popular"*. Retailers use little marketing at the counters, only aggressive price promotions to remain competitive. They do emphasize certain product traits and its quality indicators.

Buying preferences & process: When considering new species, important for larger retailers and foodservice companies is the product's quality, country of origin and environmental impact. As a category manager of a French wholesaler stated: *"Certification is now more and more asked for by restaurants, like ASC, MSC, Global GAP etc."*. Despite of this, he indicates that they mainly focus on price and product image – not country of origin: *"price and quality are again most important"*.
For new products, usually the supplier takes the initiative in presenting it directly to the retailer of to the wholesaler. Retailers are interested in new species and easy to implement, healthy products. Wholesalers use trial periods, but do not actively promote new products.

Supplier selection: The selection of suppliers is mostly based on the supplier's ability to provide continuity. This is important to retailers, so they focus on the supplier relations. When considering a new supplier, how they manage the farms is key as the current image of farmed fish is not really positive. Retailers and wholesalers prefer local suppliers because of product freshness and transportation.

Farmed fish perception: Buyers' overall perception of farmed fish is moderately positive. The image of many farmed species is bad, due to practices in developing countries. For new species, establishing and maintaining a positive image determines its success. Farmed species will have to compete with wild ones because of this, mainly on price and quality. One buyer formulated this as *"Farmed products thus take market share due to better price compared to wild and these products sell really well"*.

Category expansion: There are currently not many new species introduced, so this provides an opportunity. New processing techniques are interesting. What eventually will determine the success of new farmed species is the image.

DIVERSIFY species: Buyers are not very aware of all the different species, but farmed Atlantic halibut is already established. Competition would thus be on price. They know pikeperch, but farmed pikeperch has a bad image because of questionable farming practices in Africa: *"Pikeperch fillets were starting really slow, then after a few years it developed and improved but now it has declined due to TV reports and image"*.

5.1.6 Italy

General market information: Italian consumers buy mostly whole fresh fish, followed by processed and frozen fish products. Italians perceive locally caught fish as being of higher quality, followed by Italian farmed fish and then other countries' farmed fish. While Italians traditionally were focused on high quality fish, due to the economic situation price has become more important. It is difficult for buyers and category managers to persuade consumers of the importance of qualitative fish: *"There is a major challenge in communicating fish quality to consumers. Much depends on the preparation of the fish"*.

Category management & range: The larger retailers sell a broad range of products. Both retailers and foodservice companies sell fresh fish, frozen and seafood. Traditionally these companies sell more whole fish, although they also sell processed fish. Retailer category managers are very knowledgeable; they are knowledgeable on the current European situation and pollution issues. For foodservice companies, quality is important. Fish is sold mostly in companies that focus on high quality fish. These products also need to be innovative, as for example children don't like the traditional fish taste. Fish is often considered as a substitute for meat.

Buying preferences & process: The most important buying criteria are price, quality, standardization in products and supply, and a reliable availability. The buying process can be a two-sided initiative, where market demand is an important driver.

Supplier selection: Italian retailers are really sensitive to possible risks involved in purchasing fish, which is why they often demand certification and full control over feed and supply chain. Important is continuity, they work with known and trusted suppliers. Suppliers are periodically reviewed, and the international competition is tough for Italian suppliers. How the supply chain is managed is also important. Furthermore, when considering suppliers, retailers demand very low prices with little margins left.

Farmed fish perception: Buyers are generally positive towards farmed fish, because of the high standardization and predictability of the products.

Category expansion: A possible options for expanding or growing the farmed fish category is to use branding, which might increase the value perception of the Italian consumer. The high value of white fish is an interesting trait, which provides an option to expand within the white fish category. Also, consumers increasingly look for organic fish. Although subject to strict production standards, this is still a growing segment.

DIVERSIFY species: Wholesalers currently notice a demand for greater amberjack, which is even bigger than the available supply. This fish species would have their main interest. Meagre is also well established and would be interesting. Also, grey mullet is used for producing and selling products for a niche market (*i.e.*, bottarga), which makes it an interesting option with high possible margins. The prices for Atlantic halibut are currently too low.

5.2 Cross country analysis

Table 3 provides an overview of the countries, classified according to: **(A)** General market information, **(B)** Category management and range, **(C)** Buying preferences and process, **(D)** Supplier selection, and **(E)** Perception of farmed fish and DIVERSIFY species. The differences between countries will be compared according to these classifications. Similarities between countries are marked in Table 3 in **bold,** while differences are marked in ***bold and italic.***

Overall, the analysis shows that markets across Europe seem to converge. Although traditionally regional (*i.e.*, northern vs. southern Europe) differences in eating preferences existed, these differences become smaller –this trend is driven by younger consumers and large international retailers and foodservice suppliers continuously gaining market share. It seems that more and more fillets and processed products are also sold in the southern countries, where these traditionally would prefer whole fish. Locality (*i.e.*, region) on the

Table 3: Country Analysis: similarities in **bold,** differences in ***bold and italic.***

		UK	***Netherlands***	***Germany***	***Spain***	***France***	***Italy***
Market insights	*General market information (A)*	***Low consumer awareness*** ***Convenience products*** Sustainability important Prefer ***marine fish***	***Low consumer awareness***, ***Convenience products*** ***Marine fish*** Sustainability important	***Consumers becoming aware*** Locality (i.e., region) more important ***Convenience products*** ***Both freshwater and marine fish***	***High consumer awareness*** ***Negative image processed*** Freshwater and marine fish Prefer regional fish	***High consumer awareness*** Health & taste matters ***Different consumer groups*** ***Mostly marine fish***	***High consumer awareness*** Sustainability becomes important ***Prefer regional fish***
Internal (Buying) processes	*Category management (B)*	• Broad product range • **Fresh influences frozen** • Mostly marine • Brand management • Convenience • ***Analyze data***	• Looking to expand range • **Fresh dominates frozen** • Mostly marine • ***Analyze data*** • Convenience	• Broad product range • **Fresh and Frozen** • Freshwater & Marine • Store brands and Private labels • Large counters	• Different categories (white, blue, shellfish) • **Fresh dominates frozen** • Freshwater & Marine • Large counters	• Broad(er) range (weekend) • **Fresh leads** • Mostly marine fish • Several levels of quality • Large counters	• Broad range • **Fresh, frozen, seafood** • Farmed fish 80% of volume • Wild catch mainly local
	Category range (i.e., Products) (B)	• Fillets, portions • ***Preseasoning fish (e.g., marinades and "Rub-in-ades")*** • Processed	• Fillets, portions • ***Preseasoning fish (e.g., marinades and "Rub-in-ades")*** • Processed	• Fillets, portions • ***Preseasoning fish (e.g., marinades and "Rub-in-ades")*** • Processed	• **Traditionally whole fish** • Change to fillets • Less prepackaged or seasoned	• **Whole fish** and fillets • Mainly fresh fish • Processed	• **Traditionally whole fish** • Fresh fish • Processed
	Main Buying Preferences (C)	***1. Market demand*** ***2. Sustainability*** 3. Price **4. Quality**	**1. Quality** 2. Country of origin 3. Price ***4. Certification***	***1. Market demand*** **2. Quality** 3. Price ***4. Sustainability***	***1. Country of origin*** **2. Quality** 3. Price 4. Total service offered	1. Price **2. Quality** ***3. Country of origin*** ***4. Environmental impact***	1. Price **2. Quality** 3. Standardization 4. Availability
	Buying process (C)	• ***2-sided initiative*** • Formal processes • Direct purchases & auctions	• ***2-sided initiative*** • Formal processes • Direct purchases • Auctions monitored	• ***2-sided initiative*** • Formal process • Direct purchases • Story to tell	• ***Supplier initiates*** • No formal process • Direct purchases & auctions • Regional acceptance	• ***Supplier initiates*** • Formal process • Direct purchases & auctions	***Supplier initiates***
	Supplier Selection Criteria (D)	• **Certification** • ***Innovative outlook*** • **Farm management** • **Supply chain management** • High volume capacity	• **Certification** • **Continuity** • **Farm management** • **Supply chain management**	• **Certification** • ***Innovative outlook*** • **Continuity** • **Supply chain management** • Fixed prices & quality	• **Certification** • ***Innovative outlook*** • **Farm management** • ***Prefer local suppliers*** • Service	• **Continuity** • Supplier relationship • **Farm management** • ***Prefer local suppliers*** • ***Price***	• **Certification** • **Continuity** • **Farm management** • **Supply chain management** • ***Price***
Farmed Fish perceptions	*Farmed Fish Perception (E)*	**Positive due to standardization** (Consistency, processing, predictability)	**Positive due to standardization**	**Positive due to standardization** and relieve pressure from wild	**Moderately positive due to standardization** – farmed competes with wild	**Moderately positive due to standardization** – farmed competes with wild	**Positive due to standardization**
	*Insights to Expand **Farmed Fish** Category (E)*	• Convenience food • **Consistency** • Big volumes • Fit range	• **New species to be added** • New processed products (retail sushi) • New tastes	• EU farmed shrimp needed • **Regional or EU farmed products** • City farming for local supplies with small volumes.	• Preparations • New ways of cutting • Marketing/promotions	• **Different species** • Innovation mainly through processing • Image improvement	• Branding to increase value perception • High value white fish • Organic segment
	Diversify species awareness (E)	**Aware**	**Moderately Aware**	**Moderately Aware**	**No real awareness**	**No real awareness**	**Aware**
	Diversify species interest (E)	• **Greater amberjack** really interesting • **Atlantic halibut,** meagre established • Grey mullet, pikeperch, Wreckfish not interesting	Species like greater **amberjack** or pikeperch would be interesting.	• Pikeperch, **Atlantic halibut** established • **Greater amberjack** really interesting • Grey mullet, meagre unknown • Wreckfish needs brand new name	• Like difference of species. • All species will compete with wild catch.	• **Atlantic halibut already established** • Pikeperch not interesting due to bad image farms • Price, quality, image make unique selling point (USP)	• **Greater amberjack** main interest • Meagre also interesting • **Atlantic halibut not,** prices too low • Grey mullet interesting

other hand is becoming more valued in the northern European countries – something traditionally more preferred in southern countries. This might be explained because of the sourcing from countries with questionable practices in Asia. Also, because of EU policies and larger parties cooperating internationally, the managing of industry standards, supply chains, and traceability has become more important for buyers throughout Europe.

5.2.1 Similarities

Taking a general perspective, all interviewed respondents indicated that they had an interest in expanding the fish category (new species, new product forms). There is definitely a growing demand for fish products among consumers and within the industry. Most of the time, new products are introduced within the fresh fish category, and maybe later transferred to frozen. Interviewees indicated that consumers receive their information through the media and look for fish (products) because of cooking shows and restaurants. As fish is promoted as a healthy product, it is bought as an alternative to meat. The **image of farmed fish** is currently an issue, as several bad media reports have stressed the conditions at fish farms in Asian and African countries.

All interviewees noted that there is a definite need for farming fish species to relieve pressure from the wild stocks and to provide more reliable and controlled supplies. European aquaculture can have an advantage if they are a) able to deliver **high quality fresh fish** instead of frozen (to compete with China, Vietnam etc.), b) able to provide **a cheaper product than currently available** or c) able to compete through higher **availability and predictability**. **Sustainability** labels and **certifications** are used increasingly as quality indicators within industry, as there seems to be low (though growing) consumer awareness on the different certification schemes, but larger parties face NGO scrutiny when selling unsustainable fish. It is thus also important for suppliers to be able to prove all information ensuring traceability of their products and their ecological footprint. **Certification, Farm management, Supply chain management,** and **Continuity** are mentioned by most interviewees as important criteria to select their suppliers.

5.2.2 Differences

General market preferences (A): The ***taste and quality*** of fish products is more important for consumers in France and Italy, compared to the northern European countries. Furthermore, consumers in France, Italy and Spain ***do not appreciate pre-seasoned fish*** – as can be illustrated by a Spanish buyer's comment: *"They think that it is not fresh when it is already processed, they like to see the whole fish itself so if it's already in plastic they don't want that"*. In the UK, the Netherlands and Germany, consumers prefer to buy ***convenience food,*** pre-seasoned and also innovatively packaged so they need as little preparation time as possible. Consumers in these countries are also ***less aware of the different species existing***. Both of these statements are expressed in the following statement made by a retail buyer in the Netherlands: "*Our customers are looking for convenience, no matter what type of fish it concerns"*. Consumers in the southern European countries tend to be more ***aware*** of the differences between fish species. Also, clear differences exist for preferences on ***marine fish*** (as for the UK and France) and countries where they eat ***both freshwater and marine fish*** (Germany, Italy, Spain)

Category management & range (B): Retailers and foodservice companies in the UK and the Netherlands have a different approach in managing the fish category: they use ***extensive market research*** and evaluate sales data. This means that they manage their product category market driven, or as a UK buyer stated: "*We do a lot of research and we're trying to produce for the market"*. Industrial buyers in France, Italy, and Spain are more driven by their suppliers (*i.e.*, a sellers' market), and tend to follow the northern European countries on trends and developments in the category. Retailers in the Netherlands, France, and Spain indicated that they use price promotions to compete and promote new products, compared to Germany and the UK, which also use branding, storytelling, and seasonal marketing. Note that in Germany there is a shift in the market as discounters like the Lidl are now also moving upward in the fish market and start competing on quality.

Buyers in all countries indicated that they were adding more fillets and processed fish to their ranges, while they ***traditionally prefer whole fish***. Even in France retailer buyers stated: *"we have focused most of our development on processed products, like fillets, steaks and smaller cut pieces"*. ***Pre-seasoned fish*** seems to be sold mainly in the Netherlands, Germany, and the UK, because consumers in Spain and Italy perceive those as less fresh.

Buying preferences & process (C): Despite of German buyers indicating not to do extensive market research, they too mentioned ***market demand*** as most important for their buying decision. Certification is used mainly by the UK, the Netherlands, and Germany as a main buying preference, although environmental concerns also influence the buying decisions in France.

Price and quality are important to all industrial buyers, but nuances in the term "quality" should be made. To most buyers, quality is definitely related to freshness and consistency. But in France and Italy, quality is also related to the taste of the product. Where buyers in the Netherlands refer to *Pangasius* as *"Cheap, easy to prepare, and good base quality"*, French buyers say "*You don't buy Panga for the taste"*. Important to mention is also that in the UK, the Netherlands and Germany, the start of the buying process can be ***initiated by both the suppliers and the retailer or foodservice provider***, whereas buyers in France and Spain indicated that this was mostly ***initiated by a supplier approaching them***.

Supplier selection (D): Retailers in France and Italy select their suppliers based on ***price*,** leaving very little to no margins to their suppliers. As one Italian wholesaler noted: *"They allow suppliers to deliver but they strictly demand very low prices; no margins left"*. Buyers in France and Spain value ***local suppliers***, whereas category managers and buyers in the UK, Germany, and Spain select their suppliers also based on their ***innovative outlook***, or as one buyer in the UK formulated this: *"So we would look for any supplier going forward, and that is also an important part of our buying criteria"*.

Farmed fish perception (E): Overall, **the image of farmed fish is positive** among buyers, but remains a difficulty as this image is ***not positive among consumers*** in France and Spain. There is a great demand for greater amberjack in all countries, this is considered a high-quality fish and would sell for a high price. Atlantic halibut is said to be established, although buyers indicate that they would benefit from more farms. Meagre is also established, buyers would benefit from more farms but not all buyers consider this necessary. Pikeperch is currently established as wild catch in Germany and France, there buyers indicated that they would benefit from more farms for a continuous supply – although they would only consider EU farmed pikeperch. In France, the image of farmed pikeperch struggles, this is an issue that needs to be overcome. The interest for grey mullet is especially in France, Spain, and Italy, while in the northern countries this fish is relatively unknown. None of the respondents was able to identify a category for wreckfish, only an interviewee in the UK stated that it would not fit well on a UK menu.

6. Conclusion

General market preferences: Although certain regional differences still exist within the European market, consumer preferences concerning (farmed) fish seem to converge. Consumers are increasingly looking for convenience, which is reflected in the assortment of retailers and foodservice providers. Although certain preferences of consumers still differ between regions; most consumers in southern countries perceive pre-seasoned fish as being of lesser quality, while consumers in the Netherlands and the UK increasingly purchase these products. Furthermore, consumers in most countries perceive frozen fish as of lesser quality than fresh, which is why most retailers innovate mainly in the fresh fish category.

Buying preferences & process: These consumer preferences influence buying preferences within the industry, which implies that international buying preferences will continue to become more similar. Already, an important trend is the movement towards more standardized products like fish fillets, portioned meals, and processed foods. That this standardization is caused by the increasing influence of a few large international retailers and foodservice providers seems plausible. In determining an optimal product range, industrial buyers in the northern countries work closely with their trusted suppliers to develop new products. The southern countries can be determined as seller markets, meaning that suppliers often initiate new product offerings. Many industrial buyers and category managers mentioned the importance of sustainability – either as environmental impact, animal wellbeing, transportation, waste management, social standards or feed ingredients. These were all considered important for buying new fish products, and mentioned as baseline quality criteria for the industry. But as consumers demand fish to be sustainable but are often not willing to pay more for these products, sustainability is no market driver. Locality (*i.e.*, region) is also becoming more important – something which will benefit EU farmed fish. Overall, product quality and price are consistently important buying criteria.

Farmed fish perception: The overall farmed fish perception of the industry is positive, many buyers see the potential of farming fish to provide reliable supplies, standardized product forms, and relieve pressure from wild stocks. Due to previous media reports on farming practices in Asia and Africa, consumers have become skeptical of farmed fish. Especially in France, Spain, and Italy – also countries where they have a higher preference for locality. Buyers are overall moderately aware of the DIVERSIFY species. Buyers in the UK, the Netherlands, and Germany consider most fish to be more or less the same and require a product to add sufficient novelty to their existing product range. Buyers in France, Spain, and Italy consider differences in species as an asset, which is also related to the way fish is presented to consumers.

Final remarks: When suppliers consider marketing a new product, it is important to consider regional differences and similarities. Overall, being certified becomes more important, as certification is seen as a quality indicator for good farming practices. European fish farmers have an advantage over Asian farmers when they are able to deliver fresh fish instead of frozen, and farmed fish should be cheaper than wild when wild populations are well established. The overall advantage of farmed fish (it predictability, standardization, and traceability) need to be managed and presented well. For retailers and foodservice providers, reliability is very important.

In approaching industrial buyers, farmers should be able to provide full information on their entire production process, feed, and logistics. Most buyers do not have a logistics system to transport fish, as fish transportation is very specialized. Furthermore, buyers need to be able to sample the product and see where the product would fit. Approaching smaller parties might be an interesting option for suppliers who have their own logistics system, as smaller parties are often more willing to cooperate and innovate. An encouraging trend is that buyers are looking increasingly to source directly from farmers. Probably the best place to start selling new species would be at fresh fish counters, where customers interact with sales people who are able to inform and persuade them, and display a new type of fish in full sight.

Overall, what ultimately determines the success of establishing markets for new fish species is the cooperation between farmers to deliver a certain industry standard, to aggregate resources to build a positive image, and market their product together. Therfore, farmers need to recognize that although they are inherently competitors, they need to cooperate when they aspire to establish new markets in a European market dominated increasingly by large buying cooperations.

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Deviations: In addition to the five selected countries described in the DOW, also industrial buyers operating in the Netherlands were interviewed. This served as a pre-test of the semi-structured questionnaire, but could be added to the final sample, as the instrument was not altered.

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Appendices

A. Interview protocol

There is an ongoing trend in which the EU fish consumers are demanding alternatives for fish caught in countries of often questionable production, health, environmental and social standards, and over-exploited fisheries. The DIVERSIFY project addresses this issue by expanding the European aquaculture industry through exploring new/emerging candidate fish species.

Within the project, six selected fish species will be produced and marketed at a large size. **The overall aim is to diversify and increase the fish aquaculture production and stimulate demand for EU-cultured fish**. As part of the DIVERSIFY project, particular bottlenecks need to be overcome in the selected species, as well as enhancing the value added along the value chain through product innovation, improving consumer acceptance, and developing the knowledge to expand and create markets.

The purpose of this interview is to investigate buyer preferences for new fish products within the consumer food market and delineate buying processes. You have been asked to participate because of your current professional position. Participation is voluntary and confidential. We would like to mention that you can withdraw at any time even if you have agreed at first to participate. For data analysis purposes, we ask your permission to record the conversation. Any extracts from what you say that are quoted will be entirely anonymous and only aggregated data will be reported (i.e., value chain level). The following questions will be asked during the interview (based on: Drumwright, M. (1994). Socially Responsible Organizational Buying: Environmental Concern as a Noneconomic Buying Criterion. *Journal of Marketing,* 58(3), 1-19):

1. Could you please tell me about how you currently manage the category for fish food products? *(Prompts for the interviewer: Price, assortment (fresh/frozen), marketing, ECR & suppliers?)*
2. What are your primary buying criteria?
3. *(Prompts: What level of quality is considered? What costs are involved and how are they assessed? Would any cost/benefit tradeoffs be made? How important are economies of scale? Would there be any noneconomic buying criteria? How important is country of origin)*
4. What are the desired outcomes of the buying decision?
   (Prompts: What would the effects on your employees be? customers? competitors? Marketing/communications, media?)
5. In what way are buying decisions influenced by concerns for the environment? *(Prompts: How important is sustainability to you? And to your organization? Is sustainability an aspect of the business model?)*
6. What are your experiences with buying cultured/farmed fish?
   (Prompts: Can you describe your previous experiences? Does your personal judgment influence the buying decision? Would there be any rewards or frustrations? Are there governmental regulations you need to adhere to?)
7. Are there currently any difficulties with buying cultured/farmed fish?
   (Prompts: What are these? How are they overcome? What other difficulties do you foresee?)

After showing and discussing the current fish species in the DIVERSIFY project:

8. What potential do you see in these products?
   Prompts:
   - *Preferred product form (packaged/fresh/frozen)*
   - *Possible USP's*
   - *Possible fit with, and ability to build or drain, the category*
   - *POS characteristics/ marketing*

- *Identifiable consumer segments*
- *Identifiable retail segments*

Let's say a potential supplier approaches you, concerning a new farmed fish product.

9. Could you tell me why and how the buying process would develop?
   (Prompts for interviewer: How would you gain information concerning this type of product? What kind of problems/opportunities do you foresee? How would you describe the market for cultured fish products?)
10. Please tell me how you would be involved in the buying process.
    (Prompts: What factors would you consider? What would be your responsibilities?)
11. Who else in your organization would then involve in the buying process?
    (Prompts: Who would be directly involved? Who influences the process? Who would have to be persuaded?)
12. How would the buying effort be organized?
    (Prompts: Who does the initial research? Who surveys and evaluates the alternatives? How and based on which criteria is the supplier selected? Who has buying authority? What other actors outside of your organization might be involved?)

B. Codebook for analysis of interviews

Code	Theme	Category	Sub-category	Meaning
CM	Category Management			
CM-rev		Continuously Review		Keep reviewing category
CM-mkt		Review market data		Use market data to manage range
CM-sales		Sales data		Use sales data to manage range
CM-launch		Product launch criteria		Negotiate product launch criteria with team & supplier
BC	Buying Criteria			
BC-turn		High turnover		Opportunity to deliver high turnover
BC-Price		Higher pricing possible		
BC-Cost		Produce/sales cost effective		Are production & sales cost effective
BC-FORM		Possible product form		What possible product forms are there
BC-Fit1		Fit with range		Does the product fit with the assortment
BC-Fit2		Fit with menu		Could the product fit on a menu
BC-Sust		Sustainability		Does the product have sustainable characteristics
BC-Cons		Consumer demand		Does the consumer want this new product
BC-CUS		Possible customers		What type of customer would buy this
BC-MED		Media attention		Is there a lot of media attention for a species
BC-MKT		Market development		Is the market favorable for buying
BB	Buying Behavior			
BBE		E Auctions		Buy through e auctions
BBG		Gets approached by supplier		Supplier approaches with new product
BBA		Approach supplier		Approach supplier with new idea
BBS	Selection process			
BBS1		Select with team		Selection process is team effort
BBS2		Develop menu options		Use own resources to develop menu options
BBS3		team workshops for new products		

BBS4		Sampling		Suppliers offer plain samples
BBS5		Menu options		Suppliers offer menu options
FFP	Farmed Fish Perception			
FFP-Inn		Innovative outlook		Positive outlook for innovations (farmed or wild catch)
FFP+		Positive		Positive attitude towards farmed fish (characteristics)
FFP+1			Predictable product form	Size
FFP+2			Predictable production cycles	Time
FFP+3			Availability	Quantities
FFP+4			Recordkeeping	Improvement, logging
FFP-		Negative		Negative attitude towards farmed fish (characteristics)
FFP-1			Environmental impact	Diseases
FFP-2			Feed	Antibiotics, soy
FFP-3			Social pressures	E.g. political pressures, NGO's
FFP-4			Farm control	More control needed on farms
FFP-5			Water contamination	
AMBJ		Amberjack		
HALIB		Halibut		
GREYM		Grey mullet		
WRECK		Wreckfish		
MEAGRE		Meagre		
PIKEP		Pikeperch		
SC	Supplier Criteria			
SC-nat		International suppliers		Work with international suppliers
SC-inat		National suppliers		Work with national suppliers
SC-Rel		Supplier relations		Good mutual opportunities
SC-es		Established suppliers		Prefer to work with established suppliers
SC-new		New suppliers		Work with new suppliers when good opportunity, or new product

SC-VOL		Deliver volume		Can the supplier deliver the needed volumes?
SC-int		Intentions to improve		Is the supplier continuously improving
CO	Country of Origin			
CO+		Important		Country of Origin important
CO-		Not important		Country of Origin not important
CO-Reg		Based on regulations		Country of Origin only important when no regulations apply
COspr		Spread of risk		Country of origin important when it contributes to the spread of risks
PC	Production Circumstances			
PC-AWB		Animal well being		Animal wellbeing is an important issue in farmed fish
PC-Kill		What is the killing process		How the fish are killed/stunned is important
TOP	Types of Products			
TOP1		Fresh		
TOP2		Frozen		
TOP3		Fillets		
TOP4		Portioned meals		
PRICE	Pricing			
PRICE1		Optimal		
PRICER		Reputation dependent		
PRICEH			Low-end	Lower end formulas
PRICEL			High-end	Higher end formulas
PRICEV		Volume fit		Pricing depends on volume
PRICE-E		E-Auctions		Use online auctions to drive prices
PRICE-M		Market dependent		
QUAL	Quality			
Q-FL		Flavor		Product flavor important
SUST	Sustainability			
SUST-EX		Extend # sustainable products		Incorporate more sustainable products in range, due to business strategy
SUST-Choice		Making sustainable choices		Use sustainability as an indicator for buying

				decision
SUST-req		Sustainability required		Require new products/suppliers to be sustainable
SUST-lab		Labels used as indicator		
REG	Regulations			
GOVReg		Governmental regulations		
GOVReg 1			Country of origin	
GOVReg 2			Mating	
GOVReg 3			Feed	
CE	Insights to Expand Category			
CE1		Category		Possible segments for category expansion
CE1.1			New product forms	E.g. battered gurnard
CE1.2			New species	
CE1.3			Expand product forms	E.g. high, mid, low range fish cakes
CATEXC		Consumer		Possible consumer preferences/groups for category expansion
	Marketing/Sales			
M-Comm		Communications		Use communication channels to educate/inform customers about new product
M-Inst		In store promotions		Use promotions for new products
M-Rest		Restaurants		Use Restaurants/chefs for new products
M-TV		Popular TV shows		E.g. popular TV shows improve demand
M-POS		POS advertising		Use advertising at counter for new products
M-Stag		Staged launching		Launch new products in stages (first some stores/customers)
M-trend		Trends in current food market		What are the trends in the market
M-edu		Educate customers		Try to form preference for new products/species
M-lead		Try to lead		Be ahead of the market

M-image	Create image	Either independent or jointly create image for new product
S-Team	Sales team sell to customers	
S-trial	Trail sales	Use trial sales before dissemination

C. Notes

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[14] http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/en/fish_pr_esms.htm

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