European Commission

EU CONSUMER HABITS REGARDING FISHERY AND AQUACULTURE PRODUCTS

ANNEX 1
MAPPING AND ANALYSIS OF EXISTING STUDIES ON CONSUMER HABITS

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Maritime Affairs and Fisheries

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1 Objectives and approach

According to the Methodological Guidelines of the study, Task 1 "Mapping and analysis of existing studies on consumer habits" is based upon the following works:

- Review of studies compiled in the 2008 survey to check whether authors/institutions listed at that time have continued to produce analyses and studies on the same topics.
- Desk research at national and EU level by the consultants in charge of the different countries.
- In the light of results above, contacts with EUMOFA national contact points for clarifying some information/contradictions.
- Collection of market data (type and presentation of products purchased, distribution channels, seasonality, …) through desk research (including EUMOFA library already, which already has market data on major consumer countries).

The output expected from Task 1 is a review of existing studies and relevant literature, and a presentation of general findings on consumer habits, with focus on major trends and consumption differences between Member States.

<u>Sub-regions of EU</u>

The results from the existing studies on consumer habits and from the compilation of market data sources vary a lot from country to country. Based on the scope of the study, and availability of relevant analyses, we have summarized findings on trends and habits for each country/MS and described them in various terms and references. These terms are in general not comparable, and generalizing across countries is risky.

However we have tried to find some common features at sub-region level. For this purpose we have divided the EU into sub-regions. For this preliminary presentation of findings, we have used the same sub-regions as in the 2008 survey **"Image survey on the perception of fishery and aquaculture products",** with two exceptions: we have included France in Southern EU, as France has a strong fresh fish consumption pattern like Spain and Italy. In addition we have included Croatia in Southern Europe. Croatia was not included as a MS in 2008.

Western EU	Northern EU	Central EU	Eastern EU	Southern EU
Ireland (IE)	Denmark (DK)	Austria (AT)	Lithuania (LT)	Portugal (PT)
United Kingdom (UK)	Sweden (SE)	Czech Republic (CZ)	Latvia (LV)	Spain (ES)
Netherlands (NL)	Finland (FI)	Slovakia (SL)	Estonia (EE)	France (FR)
Belgium (BE)		Slovenia (SI)	Romania (RO)	Italy (IT)
Luxemburg (LU)		Hungary (HU)	Bulgaria (BG)	Croatia (HR)
Germany (DE)			Poland (PL)	Greece (EL)
				Cyprus (CY)
				Malta (MT)

After completion of the other tasks of the study, in particular Tasks 2 (retailer survey) and 3 (Eurobarometer consumer survey), other conclusions can emerge and reasons to redefine the sub-regions are likely to appear.

Comments Sub-division; In this part of the EU Consumer habit study, we have not found any relevant existing studies for the MS Slovakia, Malta and Cyprus. In that view, it is not likely to review the grouping of these MS, i.e. in terms of consumer habits, it could be more likely that they belong in another sub-region. At this point of the study, the grouping is related to geographical issues and sub-divisions defined in the 2008-study.

2 Definitions and Limitations

FAP: Fishery and Aquaculture Products. For some markets the terminology fish and fish products occur. This is a terminology used when the study has been translated from original language to English.

Fish, Seafood (FAO): an aggregate of the following commodities/items in FAOSTAT: Freshwater Fish Cephalopods/Crustaceans/Demersal Fish/Marine Fish, Other/Molluscs, Other/Pelagic Fish

EU: EU 28 MS

3 General findings on consumer habits

The consortium has started to fulfil Task 1 by compiling/mapping existing studies on consumer habits for fishery and aquaculture products (FAP):

I. Review of the 2008-survey
II. Compiling of other studies/surveys on consumer habits (desk survey/research)
III. Summary of each consumer survey compiled

3.1 Comments

Existing studies on consumer habits in the 28 EU-MS have been compiled, listed, examined and summarized. We find that 25 of the MS have some kind of analysis on consumer habits. In Cyprus, Malta and Slovakia we did not find any study of relevance. We have worked through about 175 different studies, the funding of the studies has not been included in the scope of the mapping, but is noted in the summary, where the information has been registered. In general, there is a wide difference between the various countries related to the studies of consumer habits. The variations are related to different parameters, such as the extent to which studies on consumer habits are carried out at all, the scope of the studies, how wide the study is, the methodology used, time period of the studies, the responsible author and the recurrences of the study. In general, the regularity of studies is low; regularity is more related to market data and statistics.

As the consumption of FAP differs a lot between the different MS, the focus on consumer habits of FAP naturally also varies. Some states are important both when it comes to production (fisheries and/or aquaculture) and related to consumption. Others are opposite; very low or no production and marginal consumption of FAP. We do not see any obvious correlation between consumption of FAP/ importance of own FAP production and findings of existing studies of consumer habits. However, in some important markets for FAP, which also has an important own production (both from fisheries and aquaculture) we find examples of higher availability of studies on consumer habits, e.g. in UK, than in some markets where own production and consumption is low, e.g. as in Hungary.

For three countries (Slovakia, Malta and Cyprus), no relevant studies on consumer habits have been found.

In several MS we experienced that analyses are made, but the studies are not publicly available, e.g. reports from Seafish (UK) and Sjømatrådet (Norway). Reports from Seafish are only available to UK fish levy payers.

This part of the study will be complemented during the other phases, in particular through the stakeholder interviews and the contacts with the authorities in charge of the promotional campaigns.

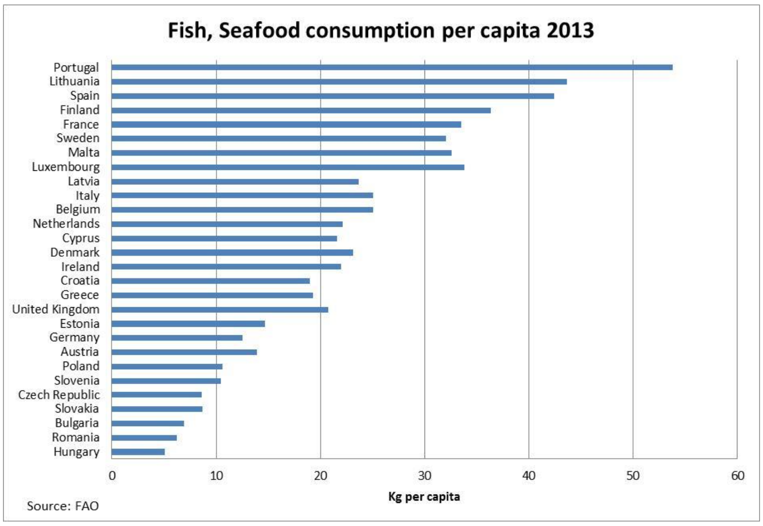
3.2 Major findings – EU wide

According to FAO, world fish and seafood consumption per capita is about 19 kg, with an increasing trend since 2005. The seafood consumption is increasing in Northern and Central America, in Oceania and in Europe. Per capita consumption in the EU (EU-28) is somewhat higher than in Europe as a whole, and was calculated at 22.5 kg in 2013, up by only 1% since 2005. In the figure below, consumption per capita is presented for EU-28 representing the development in the period from the recession and up to 2013. All figures are from FAO, category “Fish, Seafood”:

Consumption per capita	2007	2008	2009	2010	2011	2012	2013	CAGR* 07/13
EU-28	23,1	22,9	22,7	22,9	22,9	22,3	22,5	-0,4 %

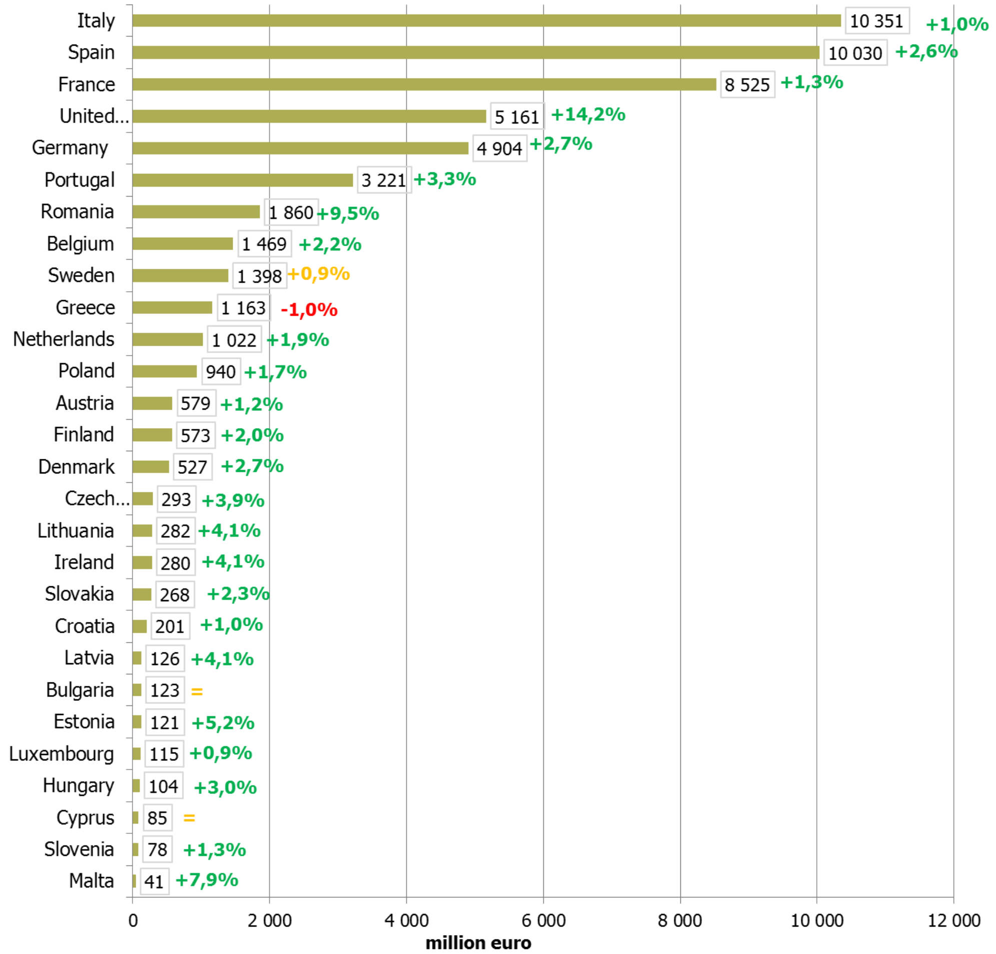
* CAGR; Compound Average Growth Rate

In 2013, Fish, seafood consumption per capita in each member state varied from approximately 54 kg in Portugal to approximately 5 kg in Hungary:

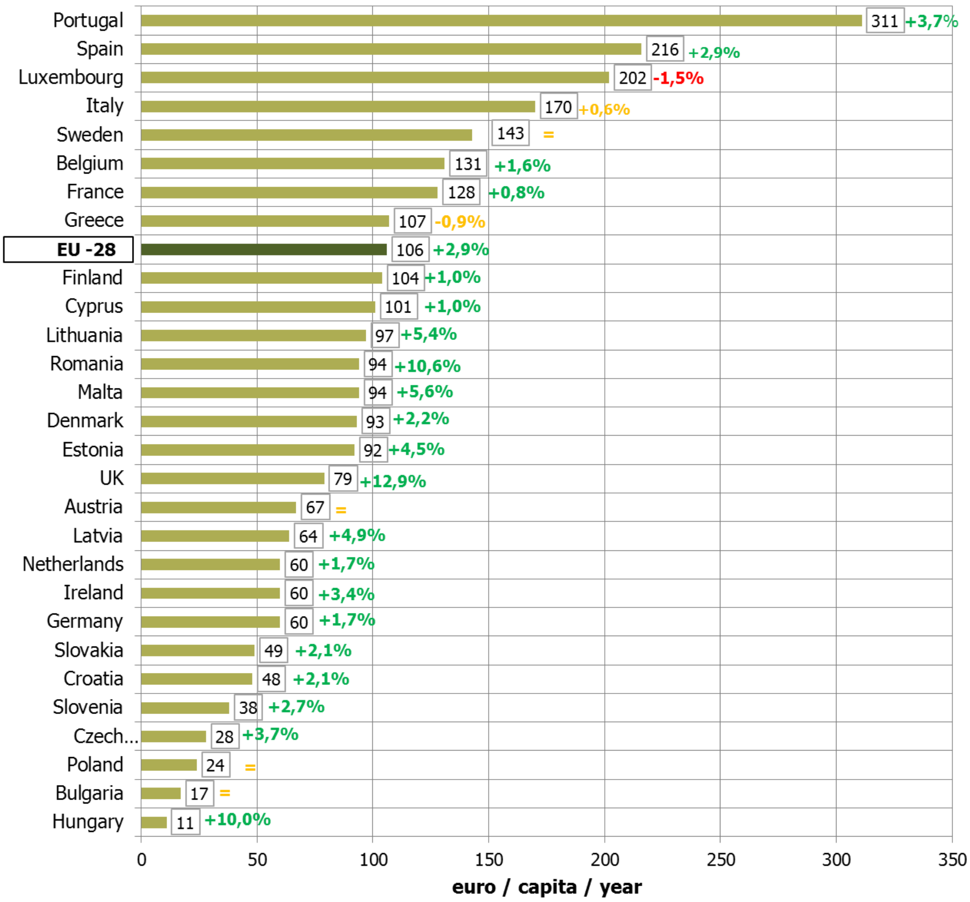


According to The EU Fish Market Report 2016, the household expenditure for fishery and aquaculture products in the EU in 2015 reached EUR 53.8 billion, increasing by 3% from EUR 52.2 billion in 2014, and by 19% from almost EUR 50 billion in 2005. Expenditure increases were reported in all EU countries. Spain, Italy and France accounted for 56% of EU expenditures.

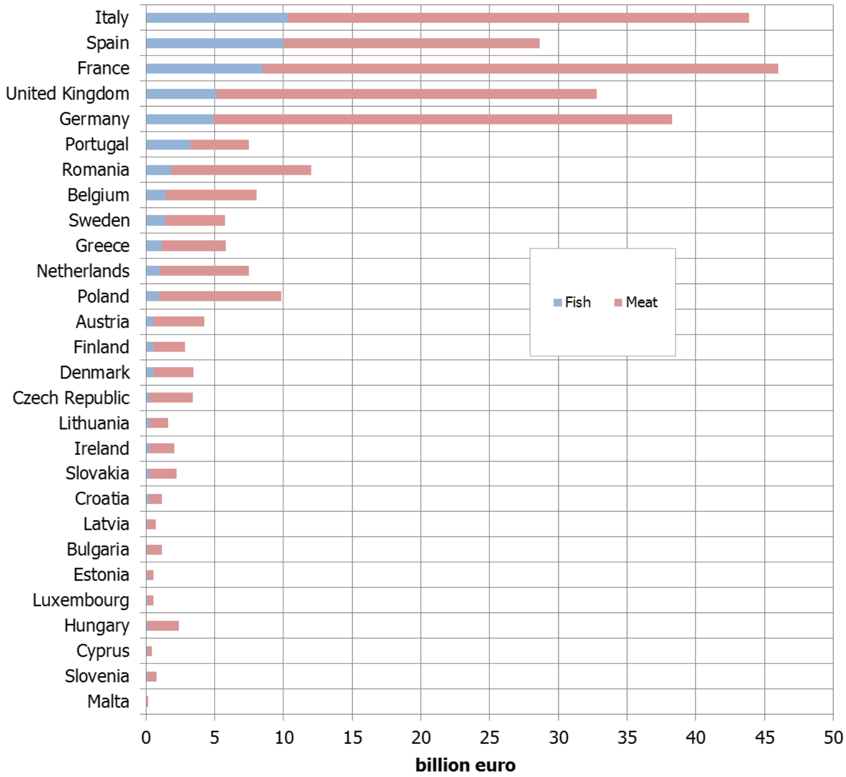
In the figure below, Household expenditure for fishery and aquaculture products in 2015 and in % variation 2015/2014 is presented. Out-of-home expenditure is excluded. Source: The EU Fish Market Report 2016/Eurostat: Purchasing Power Parities – PPPs – nominal expenditure.



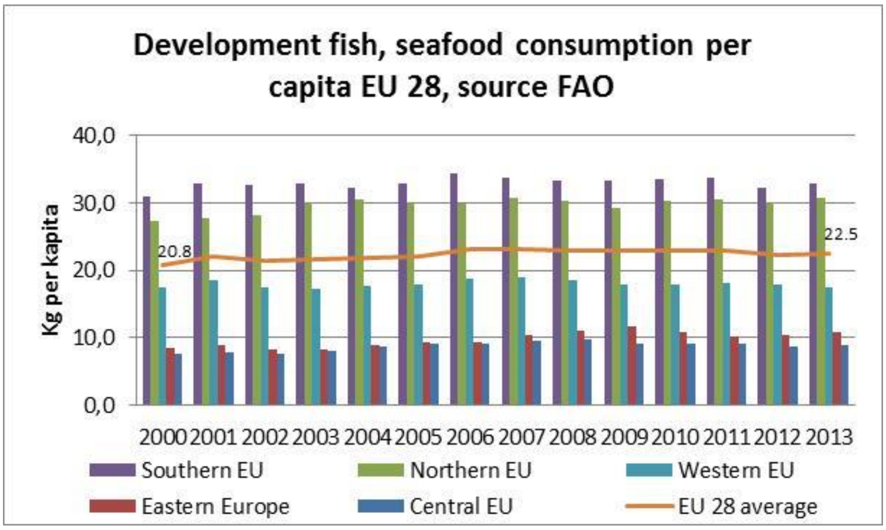
In the figure below, per capita household expenditure for fishery and aquaculture products in the EU in 2015 and in % variation 2015/2014 is presented. Out-of-home expenditure is excluded. Source: The EU Fish Market Report 2016/Eurostat: Purchasing Power Parities – PPPs – per capita nominal expenditure.



According to the EU Fish Market Report 2016, the EU expenditure for fishery and aquaculture products was lower than for meat and other foods. It reached EUR 53,8 billion, around one-fourth of the EUR 220 billion expenditure for meat. In the figure below, total household expenditure for fishery and aquaculture products vs meat in the EU in 2015 is presented. Out-of-home expenditure is excluded. Source: The EU Fish Market Report 2016/Eurostat: Purchasing Power Parities – PPPs – nominal expenditure.

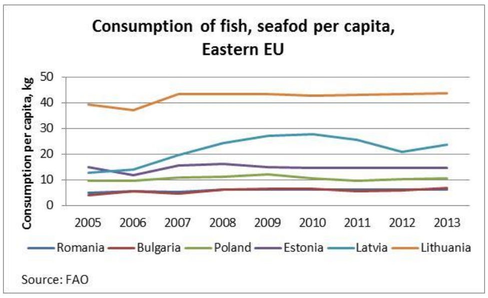


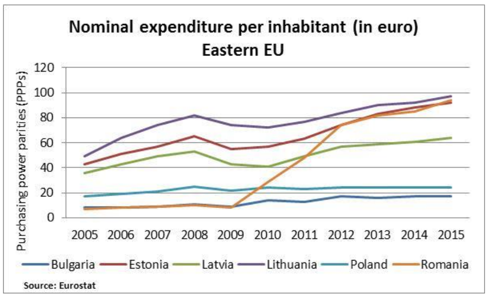
In the figure below, the consumption per capita in the different sub-regions of the EU (see map in session 1.1) is presented:



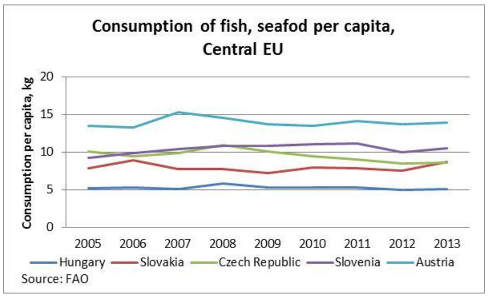
The development in consumption per capita differs in the different regions of EU, and so does the development of expenditure per capita. When looking at the period during the recession, we find:

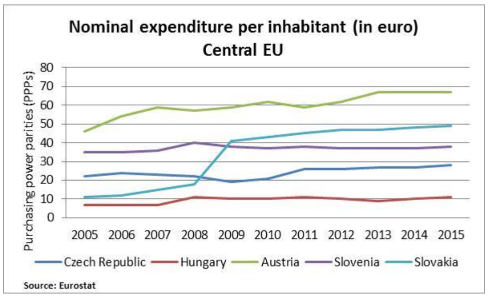
- Eastern Europe: consumption shows a mixed development during the recession and has stabilized by end of the period. Expenditure per capita showed a decreasing trend after the recession, before increasing by end of period, except for Poland and Bulgaria.



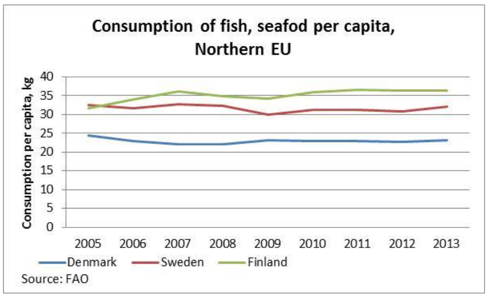


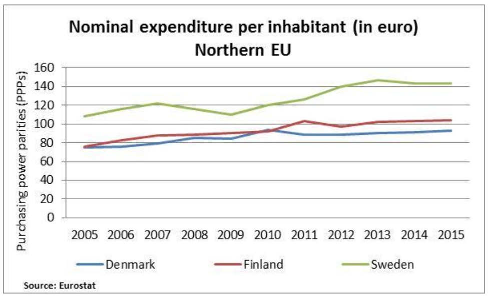
i. Central EU: Consumption grew in the period before recession, but decreased in 2009 and still struggling for several countries in 2013. Expenditure per capita has not either had a strong development, except for Slovakia, which grew in 2009 and is still growing. Also Austria showed a continuously growing trend up to 2013, before leveling, while the other countries are more or less stable.



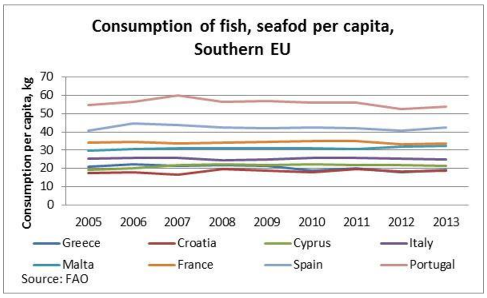


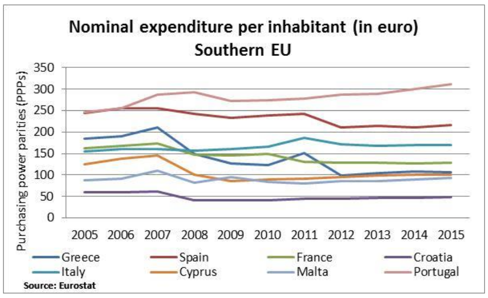
ii. Northern EU: Consumption per capita decreased after recession, but has been slowly growing afterwards, back at levels seen before recession. Expenditure per capita has been growing for all countries after recession. In Sweden there has been a strong growth up until 2013, before leveling.



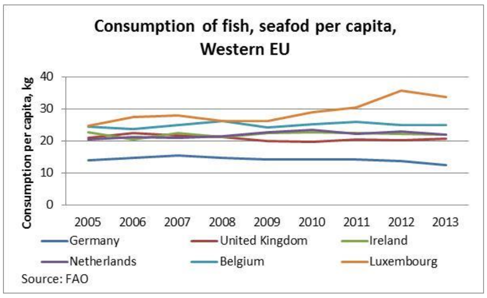


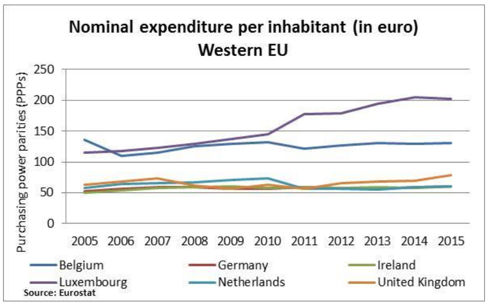
iii. Southern EU: after a growth in 2006, the consumption has marginally changed during the period, the largest change is seen in Portugal, down from nearly 60 kg/capita in 2007 to approx. 53 in the latest years. Expenditure per capita decreased during recession for all countries, in Portugal a year later. For all countries, except Portugal, expenditure per capita was lower in 2015 than before recession.





iv. Western EU: In this region the consumption per capita only developed marginally during recession. Since 2009, especially Luxembourg has growth. The same is more or less the situation for expenditure per capita, although this picture is more mixed. For Netherlands and Belgium, expenditure showed a downward trend in 2011, before leveling.





Note; the consumption and expenditure per capita referred in this section do not necessarily correspond to the figures presented in the paragraphs for each country/sub-divisions. The figures presented there are figures from findings of existing studies of consumer behavior at country level.

In the mapping of existing studies of consumer habits, we have analyzed approximately 175 existing studies. 10 of these covered more than 1 MS, and 1 covered the whole EU.

In general, the studies of consumer habits covered topics and findings as:

- Effect of health risk vs. benefit perception for seafood consumption, and information related to this: In general, the consumption is more affected by traditions and habits than by risk-benefit perceptions.

- Consumers use of information (mandatory or other) and interest in potential information placed on labels: There is a high use of on-label information and consumers are interested in information. Consumers were most familiar with expiry date, price, species name and weight and they felt able to derive clear quality expectations from the information this information conveys. Consumers displayed the strongest interest in additional information, such as safety guarantee and quality marks for seafood. Cross-country differences in both use and interest in information were observed.

- Image and perceptions related to farmed vs wild fish and effect on consumption: Consumers have in general a very positive image of fish products, especially with respect to health benefits. Fish origin seems to be of limited importance; however, wild fish was preferred when compared with farmed fish.

- Reasons and barriers to eating fish: The main reasons for eating fish are health and taste, while the main barriers are price perception, smell when cooking fish and the fact that fish does not deliver the same level of satiety as compared to meat. Big differences across Member States are found with respect to preparation skills and the use of quality cues (cues are pieces of information such as colour, smell, brand or price used to form quality expectations, and may be divided into intrinsic and extrinsic cues, see *Motives, barriers and quality evaluation in fish consumption situations: Exploring and comparing heavy and light users in Spain and Belgium, 2009*).

All the studies of consumer habits that are mapped in this analysis are listed in the Appendix.

3.3 Major findings – Eastern EU countries

In total, 60 studies have been mapped in the 6 MS countries, more than 80% of the studies in the countries' languages. The mapping of studies involves a wide scope, and not all studies cover relevant useful information for this analysis. A summary of the level of the analysis for Eastern EU countries is provided under each market/MS.

In general

- To some extent: own supply is important and pre-defines/affects consumer habits due to traditional local/regional fisheries and FAP availability.
- The consumption of FAP is low, largely related to local species as carp. The interest in local and traditional products are down – especially among the younger consumers
- Price is an important factor for purchase, many consumers consider FAP as not affordable. However, consumption of fresh products and convenience products is increasing.
- Increasing imports from other regions increases the availability of FAP which again seems to increase the consumption of FAP.
- There is an increasing focus on health benefits resulting from fish consumption.

Summary of Findings in Studies of Consumer habits	Eastern EU countries					
	BG	EE	LT	LV	PL	RO
Existing Studies of Consumer habits	Y	Y	Y	Y	Y	Y
General consumption of FAP	About 9 kg	11 kg (2012)	19,2 kg	16 kg	About 12 kg	Qualitative description
Effect of financial crisis*						Slight recovery after the crisis
Price sensitive*	Y	Y				Y
Main preservation		Fresh	Smoked	Fresh and smoked fish for households with higher income Cured fish for households with lowe income	Fresh, frozen	Fresh, frozen and live fish
Main presentation		Fillets	Quality/package design		Volume of fresh fish sold to consumers depending on distribution channel; fresh fillets through supermarkets, more than 50% of whole fish sold through traditional retail	not a clear trend
Main specie	Carp	Salmon	Herring	Local fish	Mackerel, herring, carp	Mackerel and carp
Main distribution		Shops/merchant		Affected by age; yonger consumers purchase in supermarkets	Hypermarkets, supermarkets, discounters and grocery	fresh fish: specialized shops and traditional markets frozen fish; super- and hypermarkets
Demographic; Age/Gender		Y	Y	Y	Y	Y
Main factor for purchase*	Price	Freshness, flavour and price	Freshness, quality	Income	Seasonal(?)	Freshness, taste and production method
Urban/Rural		Y	Y			
Sustainability issues*						Lack of information
Attitude to farmed*			Prefer caught			Not aware of difference/depends on gender
In-house/out-of-home	60:40				80:20	Prefer in-house
Recommendations		Y	Y	Y	Y	Y

* These themes are not included in the summaries for each country, but nevertheless featured in some country-summaries and incorporated in the table to expand the width of the summary. If not disclosed in summary, it is not commented in the table

Estonia

A total of 13 studies have been mapped, 10 of the studies are published in the country's language: 5 of the 13 studies were published before 2010 while 3 reports are recurrent (2003-2011-2014). Nearly all studies have some relevance to the scope of the analysis here. Some are quite general in nature, some focusing on FAP, some quite narrow focusing on preservation (canned fish and preserves) or a specific demographic group. The studies are a mix of research and market analysis.

According to the study *Fish and fish products market in Estonia (2014)*, the consumption per capita was 11 kg per year in 2012. In this study, it is noted that adult Estonian residents eats fish or fish products on average once a week. The decreasing trend of fish consumption registered in the period before 2007 has stopped. The most important criteria for buying fish are freshness, flavour and price. Price is an important factor for consumer purchases, and lower prices are stated to be an important factor for boosting the consumption (see "Fish and fish products market in Estonia" (July 2011), and the Baltic States Export Guide.)

Therefore, the growing price of fish also discourages the consumption of fish and fish products.

The origin of the product is important on the fresh fish and smoked fish (respectively 73% and 67%), where Estonian products are preferred, the origin of the fish is less important on frozen fish (63%).

The most popular fish and fish products are fresh salmon, trout, Baltic herring and sprat, salted herring, spice sprat and canned fish.

During the time between the two surveys in 2011 and 2014 (*Fish and fish products market in Estonia)*, the consumption of smoked and salted fish has increased. The popularity of frozen fish has not increased, people still prefer fresh fish. Nearly half of the amount of consumed fish was fresh fish or fillets (including frozen fillets).

Consumer purchasing preferences are not affected by the packaging of fish and fish products in retail sales.

Families with children spend nearly two times less for fish products than families without children. The consumption of fish and fish products per person was higher in rural areas than in urban areas, see the study "Food consumption trends in Estonia" (2010). Note that the rural areas can also be considered as coastal areas in Estonia due to the high number of islands.

Studies show that consumers prefer to buy processed fish and frozen fish products in shops, while they turn to alternative channels for fresh fish (e.g. directly from fishermen or fish mongers).

Research carried out on Estonia recommends that, in order to increase consumption, fish should be made more affordable and available. Consumers should be accustomed to other types of fish than salmon and trout. Fish is considered a healthy food, and therefore the health concerns and increased interest of healthy cooking should lead to an increase in the consumption of fish. Shops should arrange special offers to increase the consumption of fish, since the price of fish has become increasingly important. Moreover, it is necessary to pay attention to freshness and availability of fresh fish; especially in rural areas (fish cars, special sales points, fish markets, direct sales, etc.). In addition, young people should become more familiar with fish, e.g. through media and social network campaigns.

Latvia

In total, 13 studies have been analysed, about one third of these have comprehensive relevant information about consumer habits and trends. 8 of the studies are issued in the country's language. In general, the other reports are focused on own fishery and aquaculture production, framework conditions and the competitive conditions for the industry. All studies are one-time publications and 9 of the studies are from 2010 or later. The studies are of a general nature and a mix of scientific studies and market analysis. 1 study was funded by the EU (European Fisheries Fund).

Over the last decade food consumption patterns in Latvia have changed significantly, particularly after accession to the European Union thus experiencing a similar tendency with other more economically developed countries. In general fish and other seafood products are eaten quite often. While fish products are not considered as everyday products, the typical eating frequency is weekly. Latvians prefer to consume local fish or seafood (originating from Latvia or from the Baltic Sea and the Gulf of Riga). Fish and fish products are often consumed by people earning higher incomes.

There are remarkable differences in food consumption (diversity and price of products, quantity of high nutritional products, etc.) between households with different income levels; therefore income can be defined as the main factor influencing consumption.

The main species consumed in Latvia, like herring and sprat, but also flounder and cod, besides salmon and canned tuna, originate from the Baltic Sea and the Gulf of Riga.

In terms of preservation, it seems that households with higher income prefer fresh and smoked fish, while households with lower income tend to buy cured fish.

Most popular fish products among Latvian adults are herring and sprat, but also salmon, flounder, cod and canned tuna. Latvian students like or know mostly salmon, herring and sprat. Fish sticks are also popular among Latvian youngsters. Younger consumers more often purchase the food products in supermarkets. No differences are detected by gender.

Food purchasing factors are dominated by quality, taste, local origin and price. Price matters more for women and for retired people.

Research undertaken suggests that demand could rise as a result of reducing price or increasing the awareness about the nutritional value of fish.

<u>Lithuania</u>

In total 7 studies have been mapped, 6 of the studies are issued in the country's language. One study is undertaken recurrently (1997-2002-2007) while one is from before 2010. One study is of general nature, focusing on food in general, the rest is more narrative, focusing on FAP or one or several species. 4 of the studies are focusing on consumption trends and assess how much is eaten or spent every week or every month by different demographic groups. The studies are a mix of research and market analysis.

Fish consumption in Lithuania has increased after Lithuania's accession to the European Union. A growing number of Lithuanian consumers eat fish instead of meat. Lithuanians prefer caught fish to farmed fish and usually consume local fish or seafood (originating in Lithuania or from the Baltic Sea). According to the *Baltic State Export* Guide (2014), annual consumption of fish per capita is 19.2 kg.

Research *LT-005 Eating habits of the Lithuanian population in 2013 (2014),* stated that one-third of the adult population consume fat-free fish and fish products less than once a week, while 32.7% of respondents did not consume fish at all. About half of the population (49,2%) consume non-fatty fish or lean fish and fish products 1-2 times a week, while 13.7% of the respondents indicated that they eat fish 3-5 times a week. Fish and fish products are often consumed by people aged 50-59, employed and earning higher incomes.

According to the study *Consumption of the fish and fish products (2013), t*he most popular product in Lithuania is herring. Lithuanian consumers prefer smoked fish (58%), followed by fresh fish (55%) and frozen fish (53%). Demand for high quality products is quite important as consumers are choosing freshness and quality of the fish and fish products. Quality of package design is also very important.

Men often prefer canned and salted fish, while women prefer frozen fish and crab sticks. . In term of age groups, young people often consume crab sticks, fish fingers and herring with vegetables while older people consumes herring and frozen fish.

On the other hand, The Baltic Export Guide (2014) points at carp and salmon, as well as perch, trout and pangasius as the most popular species. Further, according to the same study, the main selection criteria when choosing fish products are price (89%), organoleptic qualities (84%) and type of fish species (79%), while the least significant criteria are type of packaging (57%) and whether it is from freshwater or marine (44%).

The two studies mentioned show an inconsistency regarding popularity of the species and also in terms of the main criteria when choosing fish. There is no obvious explanation of the inconsistency, as the period of scope is almost the same.

Bulgaria

In total, 11 studies have been mapped, 8 of these in the country's language. 4 studies are undertaken with recurrence (2012-2013-2014-2015) focusing on the status of the fishery and aquaculture market and sector and perspectives for the following year, including apparent consumption. 4 studies are statistical books regarding household consumption (2012-2013-2013-2014). One report gives a short overview of the Bulgarian fish and seafood market while 2 reports focus on the Bulgarian production of freshwater fish.

The seafood market in Bulgaria is relatively smaller compared to other markets in Europe. In general, the consumption of fish and seafood products is below the EU average level, mainly due to the lack of tradition in consuming fish, as well as the high prices of fish and fish products in the country. Bulgarians tend to consume fish and aquaculture products more at home than in restaurants.

FAP consumption per capita*	2003-2004		2012	2013	2014
From Aquaculture (15 species)	NA		2,8	3,8	NA
Other FAP	NA		7,4	5,2	NA
Total	4,3		10,2	9,0	NA
Apparent consumption per capita**	NA		5,4	5,4	5,7

* Source: Yearly household consumption of fish and other aquaculture products and their production in Bulgaria (2012-2013)

** Source: Situational-Perspective Analysis of Fish and Other Aquaculture Products (2011-2014)

The study Situational-Perspective Analysis of Fish and Other Aquaculture Products (2011-2014) shows a total annual consumption per capita at approximately 5,4 kg – 5,7 kg. On the other hand, the study Yearly household consumption of fish and other aquaculture products and their production in Bulgaria (2012-2013), shows that the cumulative consumption per capita, including the consumption in restaurants, varied between 9 kg-10 kg. The reason for the different figures related to consumption is not clear, but it is worth noting that the consumption outlined from the source Yearly household consumption of fish and other aquaculture products and their production in Bulgaria (2012-2013) is based on a monitoring of a sample of households.

According to the study Yearly household consumption of fish and other aquaculture products and their production in Bulgaria in 2012 (Годишна консумация на риба и други водни организми от домакинствата и тяхното производство в България през 2012 година), the vast majority of the Bulgarian households consider that if the fish products price decreases 10-20%, they will increase the consumption of fish and fish products.

Carp and mackerel are the most consumed species by the households in Bulgaria, followed by rainbow trout, silver carp and zander. Other main species consumed in Bulgaria are sprat and hake. An increased demand for mid- to high-end species like salmon, squid, lobsters and hake is observed.

In 2013, Among the highest prices were those of baramundi 12.3 lv/kg and Russian sturgeon at 11,3 lv/kg. The cheapest fish on the Bulgarian market was Crucian carp at 2,9 lv/kg.

Romania

In total, 6 studies have been mapped, all in the country's language. No studies are undertaken recurrently. All studies are quite new, all from 2012 or later. In general, they focus on FAP. 2 of the studies are co-financed by EFF-FOP 2007-2013.

The general trend of FAP consumption in Romania in the recent years is pointing out a slight recovery after the financial crisis of 2009 - 2011. Both reduced imports and domestic production led to a significantly decreased FAP consumption. EFF investments contributed to this recovery. Results from The Romanian Fisheries market Study (2015) show that 53% of the respondents are not consuming fish at all, while the study Consuming and buying habits for fish and fisheries products (2015) points out that 39% of Romania's population are eating FAP at least once a week.

A study carried out in 2013 indicates that consumers are not aware of differences among wild and farmed fish (City Audit 2013). 72% of the respondents do not know if the fish was farmed or caught. Furthermore, there seems to be a general lack of information about sustainability issues.

In the study Romanian Fisheries Market Study, released in 2015, freshness, taste and production method are revealed as the most important factors affecting consumption. However, the market is primarily price driven. There is a strong perception that fish consumption means health. The main barriers to increased consumption are: taste (35%), price (33%), and personal belief (25%).

Mackerel and carp are the most consumed fish species in Romania, and, in terms of preservation, consumers prefer fresh, frozen and live fish.

According to the study Buying and consumption habits for fish and fisheries products in Romania (2012), reasons for preferring fresh are health benefits, taste and freshness, while main reasons for buying frozen fish are taste, price and health benefits. The most frequent buying location for fresh fish is specialised fish shops and traditional markets, while super- and hypermarkets are the most frequent buying locations for frozen products. These choices are related to freshness when it comes to buying fresh fish at specialized fish shops, while price is the reason for choosing traditional markets and super-/hypermarkets when buying both fresh and frozen products. Traditional markets are also chosen as they are close to the residence place.

88% of the respondents are buying whole fish and only 22% prefer portioned fish (68% are buying fillets). In the study City Audit 2013, it was found that 51% of the buyers would like to have an additional service like gutting offered by the sellers. This is also pointed out in a study carried out in 2015 (EFF Project RO3431101109420350 - Consuming and buying habits for fish and fisheries products), where 75% of the respondents say thet would like to have scale removal as an additional service, while 34% pointed at gutting and portioning of the fish.

The Romanian fisheries market study carried out in 2015 recommended that promotional campaigns should focus on health benefits of FAP consumption and should target the families who are the main demographic category responsible for the FAP consumption. The promotional campaigns on internet or media should increase the visibility of the selling places and should focus on the methods of production and their impact on environment and on health benefits. There is a strong need for additional services offered at the selling place and also for quick access to different, new or dynamic recipes for fish and fish products.

Poland

10 studies have been mapped, 8 of them in the country's language. 3 studies are undertaken with recurrence (2013-2013-2014). In general, the studies are quite close to the scope of the analysis here, focusing on consumption trends and development in the retail market. The studies are a mix of research and market reports. All studies are from 2010 or later.

Annual fish consumption is low, about 12 kg per capita.

FAP consumption per capita	2008*	2009*	2010**	2011**	2012***	2013***	2014***
Total	13,7	13,2	13,1	12,3	11,8	12,2	12,3E

* Source: Agriculture and Food Economy in Poland (2010)

** Source: Overseas Market Introduction Service on seafood sector in Poland for Sea Fish Industry Authority (2013)

*** Source: Rynek ryb – stan I perspektywy (Fish market – state of play and perspectives), November 2014

Mackerel, herring and carp are traditional products for Polish consumers and remain the preferred species, while the popularity of salmon, tuna, trout and Alaskan pollack shows an upward trend.

Over 45% of consumers prefer to buy fresh and frozen fish while the rest gives preference to processed products ("Seafood Study 2015. Consumption of fish in Poland: overview and perspectives".). In 2012-2014 the consumption of fresh fish has been showing an upward trend, while the consumption of frozen fish has been slightly decreasing. At the same time the popularity of smoked salmon and trout has been growing. Consumers remain conservative when it comes to canned fish and prefer herring, mackerel and sprats, so demand in this sector remains stable.

Volumes of fresh fish sold to consumers differ depending on the distribution channel – e.g. fish fillets are mostly sold through supermarkets while over 50% of whole gutted fish is sold through traditional retail. Though most of the frozen fish comes packed, a lot of consumers still prefer to buy "loose" fish by weight.

Over 78% of consumers aged more than 50 eat fish at least once a week. In general, Polish men consume more fish than Polish women. Consumption is the highest in groups of people with higher education and higher income. It shall be added that fish consumption in Poland is seasonal and peaks during Christmas and Easter time.

Hypermarkets, supermarkets, discounters and grocery stores are the main distribution channels for fish products in Poland, though traditional fish shops are still important, especially in smaller cities and remote areas.

The split between in-house and out-of-home consumption of fish in Poland is 80:20 respectively. Out-of-home sector is slightly growing.

It is recommended in the studies compiled ("Seafood Study 2015. Opinie i perspektywy: konsumpcja ryb wśród polaków" / "Seafood Study 2015. Consumption of fish in Poland: overview and perspectives") that retail chains shall work more on fish promotion and improve ways of displaying fish in the shops, by focusing on consumer inspiration, more accessible fresh fish, reach younger people by more "on the go" products, more innovation in product categories towards kids, fish more visible in media.

3.4 Major findings – Central EU countries

The Central EU countries represent the landlocked region of the EU with no own harbors and where all supply of saltwater fish is based on imports. In general, there is a relatively low degree of studies related to consumer habits of FAP, only 9 studies have been mapped, six of which are in the countries' languages.

<u>In general</u>

- Central EU countries constitute a landlocked region with a quite low consumption of FAP, but tending to increase. Local produced carp is important species, especially in Hungary and in the Czech Republic and consumption is influenced by tradition.
- Availability of saltwater fish depends on import from other regions. Increasing import increases the availability of FAP and changes consumer habits, although traditional habits are strong.
- Consumption and purchasing is value-oriented (price sensitive)
- Increasing urbanization increases demand for convenient products.

Summary of Findings in Studies of Consumer habits	Central EU countries				
	AT	CZ	HU	SI	SL
Existing Studies of Consumer habits	Y	Y	Y	Y	N
General consumption of FAP	8 kg (2014)	Qualitative description	3.9 kg (2014)	Qualitative description	
Effect of financial crisis*					
Price sensitive*			Y		
Main preservation	Fresh, frozen and smoked/ salted ↑ Canned ↓	Fresh fish		Frozen, canned	
Main presentation	Prepacked fresh fish cuts ↑ Canned products ↓	Depending on distribution channel; expensive fresh and frozen products consumed in hotels/restaurants or sold in hypermarkets			
Main specie	Consumption of Freshwater increases	Carp -important freshwater fish	Carp	78% prefer saltwater fish	
Main distribution	Purchases in supermarkets has increased	Hypermarkets, restaurants	60% in hyper-/supermarkets		
Demographic; Age/Gender	Y		Y	Y	
Main factor for purchase*			Taste, price		
Urban/Rural	Y- per region				
Sustainability issues*					
Attitude to farmed*					
In-house/out-of-home	HORECA sales up/NP	Increasing presence in restaurant menues	Eating out increased with increasing income	Poor	
Recommendations		Y	Y	Y	

* These themes are not included in the summaries for each country, but nevertheless featured in some country-summaries and incorporated in the table to expand the width of the summary. If not disclosed in summary, it is not commented in the tabl

Austria

The mapping is based on one market analysis from 2012 which highlights the eating behavior of people in Austria and changes in their consumer behavior. The study looks at food intake in general and different demographic variables. It is in the country's language, and could be defined as a market analysis.

The evolution of Austrians' purchase behaviour vis-à-vis fish has significantly improved in the last 10 years. According to a survey of AMA Marketing, 46% of Austrian consumers say they buy more fish than 10 years before, 39% the same quantity, 11% less and 4% that they no longer buy fish.

Consumption per capita is trending upwards, from 5,3 kg 20 years ago (1995) to 7,5 kg in 2009 and 8,0 kg in 2014. The consumption of freshwater species has increased more than the average. Between 2005 and 2014, consumption of fresh fish, frozen fish and smoked/salted fish has significantly increased, while consumption of canned fish experienced a downward trend. Prepacked fresh fish cuts have increased, canned fish has decreased.

Concerning future trends, according to the same study, 53% of respondents say that in the future fish will grow in importance in their households and 44% that fish will keep the same importance. Only for 3% of respondents importance of fish will decrease. There are important regional differences: consumption is the highest in the regions of Vienna (monthly expenditures per adult equivalent: 9,1 EUR), Salzburg (7,0) and Tyrol (6,9) and the lowest in Vorarlberg (5,2), Styria (5,4) and Burgenland (5,5).

According to the Nutrition Report 2012, quantities of fish consumed by Austrians are below recommendations of the Federal Ministry for Health, which are at least 1-2 portions per week, i.e. min. 150-300 g/week or 20-40 g/day for adults. Consumption is 12 g/day for women and 19 g/day for men, which means respectively 40% and 67% of the quantities recommended.

Fish purchasing frequency in supermarkets has increased in the last years (2002-2010), while purchasing frequency in specialized retail shops was resilient.

Food-service sales represent 22,6% of all food consumer purchases in 2014, vs. 21,5% in 2009. The benefits of this development of out-of-home consumption have been rather limited for fish.

Czech Republic

6 studies have been mapped, 5 in country's language. 3 of the studies are issued in 2014, the others are less relevant as they are from before 2010. The studies are mix of research and market studies, but very generic. The relevance to the scope of the analysis here is low, focusing on supply (import, exports) more than consumption trends.

An older study carried out by the Foreign Agricultural Service, USDA (Market Brief-Product, Czech Republic: Seafood in 1999) points to the fact that the Czech Republic produces only freshwater fish (carp, trout, pike, bream etc.). All saltwater products are imported. Czech importers usually buy fish from large fish companies in Denmark, France and Norway. The most popular imports seem to be less expensive, frozen varieties. However, there is a niche market for more expensive fresh and frozen sea fish and seafood products, which are consumed in hotels and restaurants or sold in the new hypermarkets.

Even though the consumption of saltwater products in general is twice as high as the consumption of freshwater fish, Czech's tend to be more knowledgeable about the preparation of freshwater fish. This is mostly due to the fact that fried carp is a popular and traditional Christmas meal.

In the Annual Report Czech Republic – Situation and Outlook Report – Fish (Situační a výhledová zpráva ryby) from the Ministry of Agriculture issued in 2014, a general decline in sales of fish and fish products on the Czech market is outlined.

In the study Quality and gastronomy of fish and fish products (Kvalita a gastronomie ryb a rybích výrobků), issued in 2014, it is recommended to focus on increasing interest for fish products, as consumption of fish is very low.

Hungary

Two scientific studies are used when analysing Hungarian consumer trends. The studies are in English and published in 2012 and 2014. The studies are narrow, of low relevance and researching consumers of canned food products and consumer preferences with regard to institutional catering.

A landlocked country, Hungary imports the majority of its fish and seafood products. Consumption is lower than in many other EU countries. According to Hungarian Central Statistical Office, in the period 2007 -2014 the consumption of FAP has been fluctuating, but still at very low levels:

	2007	2008	2009	2010	2011	2012	2013	2014*
Consumption of FAP	3.8	3.8	3.7	3.5	3.6	3.5	3.7	3.9

* Source: Community Fish Marketing Programme

Household expenditure of FAP has remained stable at around 1% of household monthly expenditures.

Hungarian consumers are living increasingly busy lifestyles, with ongoing urbanization and suburbanization affecting consumer attitudes, preferences and behaviours towards food products. Hungarians are looking for products that offer added convenience and time-saving properties, but remain very value-oriented. Larger-format stores that offer one-stop shopping are growing in popularity amongst suburbanites, but many consumers are willing to shop at multiple locations in order to acquire the best deals. However, most consumers do not wish to travel far to do so, maintaining the successful growth of convenience stores.

Consumers are expected to change consumption habits due to factors such as increasing focus on health and healthy diets encouraged by government initiatives, in particular households with children as these consumers seems to have a significant level of disposable income. According to the study “The Hungarian consumer - Behaviour, Attitudes and Perceptions Toward Food Products , 2013, the aging population is expected to shift consumption to food products appealing to older consumers but households with children will remain an important market, in light of their high income. The changing trends also affect the main consumer trends for FAP.

Carp, the main species farmed in Hungary, is perceived as unattractive due to bones, fat and uneven quality. These characteristics seem to be barriers for increasing consumption, see the study A MAGYARORSZÁGI FOGYASZTÓK HALVÁSÁRLÁSI ÉS HALFOGYASZTÁSI SZOKÁSAINAK HELYZETE; Consumers in Hungary, Fish and seafood Consumption habits, 2008.

Studies (on canned products) show that taste is the main factor influencing buying behaviours, followed by price, labelled information and promotions.

Older people prefer the taste of traditions– traditional fish species and products, while the younger ones trend more to the healthy lifestyle. Women tend to buy frozen seafood. Carp seems to have highest potential among consumers over the age of 50.

60% of consumers buy fish in hypermarkets and supermarkets. Of total expenditures on food, 14% was spent on food consumed outside home (2015). The proportion of eating out seems to increase with the improvement of income situation.

Slovenia

3 studies have been referred and listed, all in the country's language. One study, issued in 2012 (Raziskava med splošno javnostjo ter ribiškim sektorjem o porabi rib in o kampanji "Rad jem ribe") is so far considered as the most relevant study. The second study (STROKOVNO SPREMLJANJE PREHRANE S SVETOVANJEM V VZGOJNO-IZOBRAŽEVALNIH ZAVODIH V ŠOLSKEM LETU 2012/13) was less relevant, monitoring the overall school catering.

The third looks into the nutrition quality of different species of fish available in the Slovenian market and analysed demand and supply of fresh fish based on its origin.

Information about general trends for FAP in Slovenia has not been found.

In 2012 an online survey was conducted (Raziskava med splošno javnostjo ter ribiškim sektorjem o porabi rib in o kampanji "Rad jem ribe") in the framework of a campaign aimed at changing the eating habits of Slovenians, and particularly in order to increase the consumption of fish and seafood products. This campaign was one of the firsts large-scale communication in this field and engaged 500 consumers and 401 persons in the fisheries sector: 48,3% women and 51,7% men.

In Slovenia the consumption of fish products tends to be low. In 2009, a survey on the dietary habits of the adult population in Slovenia in terms of health defined that the frequency of consumption of fish and seafood products decreased compared to 1997. A high price of fish products and a poor offer of fish products in the vicinity of purchasing stores, as well as the presence of bones (an obstacle in order to augment the consumption of fish products among children) and the difficulty of preparation (cleaning fish and a disturbing smell) represent the main reasons of the low consumption of these products.

According the 2012-online survey, the main results are the following:

- A large part of respondents that consumed fish less than twice a week are young people (18-25 years old);
- From the results, 77,9% of adults preferred Slovenian marine fish while the 22,1% preferred freshwater fish;
- Almost a third of the participants used to eat frozen fish and canned fish products. Consuming canned fish is particularly common among young people. The prioritization of frozen fish with respect to fresh was mainly due to the modern lifestyle and the relatively easy accessibility of frozen fish, because they are available in almost every store.

According to the latest 2014-study "Quality of fish sold on Slovenian market and analysis of possibility to amend fish supply with the demand aiming to increase food safety of consumers and competiveness of fishery sector. (Healthy fish- healthy as fish, viable fisher-satisfied consumer).", freshness and origin are attributes by which domestic fish can be differentiated in the perception of consumers. It is pointed that consumers give preference to domestic fish over foreign due to ethnocentrism and this is useful facts for improving competiveness.

In Slovenia, information about trends in household and out-of home consumption of fish products continues to be very poor. Taking into account the 2012 online survey it emerges that 83,3% of the respondents state that fish products are commonly consumed during the summer, because they are associated with holidays.

Despite the low consumption of fish products and the preference for frozen and canned products, in general the origin of fish products is strongly significant among people aged 56-65, with an high income (above 450 euro, as underlined in the survey) and with high education level. On the contrary, the rest of the Slovenian population tends neither to take into account the origin of fish products nor to consume fresh fish products.

Recommendations: Based on the results of the 2012 online survey, the following recommendations are defined in order to promote for the future the consumption of fish and seafood products:

- To promote cheaper fish (eg. Sardines) and to disseminate benefits related to it;
- To promote fresh fish products, conveying the important message to consume local products;
- To communicate on the recommended amounts of fish and seafood and their effect in reducing the risk of diseases;
- To provide for significantly higher presence of fish products in the school children menu, i.e. at least once a week;
- To promote the consumption of fish products, above all among the younger population, through simple recipes to taste;
- To consider the participation of fishermen in the promotion of fish products;
- To encourage the purchase of fresh fish and seafood markets, better-stocked stores and directly from fishermen;
- To inform about the quality of some fish products commonly consumed (breaded fish, canned fish, surimi, fish in brine, pate) underlining the effective amount of breading, quantity of fish, quantity and quality of fat and salt);
- To disseminate simple and rapid methods of preparing fish and seafood;
- To define an interactive website able to attract the younger generations.

Slovakia

No relevant studies have been mapped for this market.

3.5 Major findings – Western EU countries

In general

- These countries have a significant own supply both from fisheries and from aquaculture, and consumption of FAP is an important part of the culinary traditions
- Fish consumption is relatively high and consumption of products from aquaculture is trending upwards
- Consumption is value-oriented (price sensitive).
- Purchase in traditional fish markets or specialized fish shops are down, supply through super- and hypermarkets is increasing
- Increasing availability of fresh fish, convenience products and sushi changes the habits from more traditional meals, especially among the younger consumers
- Expenses per capita are increasing, but consumption per capita is down in UK.
- There is an increasing focus on health and sustainability.
- Communication with consumers increases through social networks

Summary of Findings in Studies of Consumer habits	Western EU countries					
	BE	DE	IE	LU	NL	UK
Existing Studies of Consumer habits	Y	Y	Y	Y	Y	Y
General consumption of FAP	Qualitative description	14 kg (2014)	21.4 kg (2007)	Qualitative description	Qualitative description	9.2 kg (2013)
Effect of financial crisis*						Y
Price sensitive*			Y			
Main preservation	Fresh	Fresh	Fresh ↑ Frozen/Ready-to-cook ↑ Coated ↓	Fresh, frozen	Fresh	Fresh
Main presentation		Prepacked increasing	Prepacked ↑ Loose ↓		Frozen	Fresh, incl sushi
Main specie		Alaska Pollack, salmon	Cod, salmon		Pangasius, tuna, salmon	Cod, salmon
Main distribution	2014 Retail channel: 78% Fishmongers: 12% Downward trend for fishmongers	Discounters ↑ Fishmongers ↓	Supermarkets: 65% Fish shops: 17% Convenience stores: 16%		Supermarkets	No major changes
Demographic; Age/Gender		Y	Y		Y	Y
Main factor for purchase*			Value for money		At supermarkets: price At fish stands: taste, freshness, quality	
Urban/Rural						
Sustainability issues*			Lack of awareness			Y
Attitude to farmed*						Y
In-house/out-of-home	60% in home, 28% in foodservice, 10% with family/friend and 3 % in delicatessen	65:35	Increasing out-of-home		Y	83:17
Recommendations		Y	Y			Y

* These themes are not included in the summaries for each country, but nevertheless featured in some country-summaries and incorporated in the table to expand the width of the summary. If not disclosed in summary, it is not commented in the table

United Kingdom

A total of 20 studies have been mapped, 19 of them issued in 2010 or later. All reports are in the country's language. Two reports are undertaken with a yearly recurrence, so that only the newest issue is included in the mapping. The studies are both of a general nature, focusing on food in general, and specific, focusing on only one species. The studies are a mix of scientific articles and market reports, including yearly statistical books.

According to the Seafood Consumption Fact Sheet (2015), the FAP consumption in 2013 was approximately 9 kg per capita per year of edible seafood. As seafood is an expensive protein choice, consumption is down in times of recession. The consumption of salmon, shellfish and pelagic species increased steadily until the recession in 2007, when consumption of shellfish and pelagic began to fall while consumption of salmon continued its long term growth. Total consumption (in-house and out) in 2013 was 175 g/person/week, representing nearly 2 portions per week. The adult population is aware of the fact that fish should be eaten minimum twice a week, of this one should be an oil-rich fish.

The economic crisis has led to changes both in retail and in foodservice. In retail, there has been a move away from the traditional large supermarket shop in a single supermarket. The past few years has seen a significant rise in the discounters and convenience channels, with "*….the focus on 'top up shop' and 'meal for tonight' and 'food on the go' shopper missions….*", as described in the Seafood Consumption Fact Sheet (2015). The vast majority (85%) of the shoppers is now using four or more retailers in their hunt for deals to reduce spending.

In foodservice, the austerity period has changed habits and resulted in consumers eating out less often, preferring to dine in to save money. Many remaining customers traded down within foodservice to cheaper channels; for example, they traded out of expensive full-service restaurants to cheaper quick service restaurants (e.g. chains). Seafood tends to be an expensive protein choice in foodservice, so consumers trade down to cheaper seafood options like fish cakes and indeed trade out of seafood altogether into cheaper options, such as burgers in fish and chips shops.

After the recession, purchasing power of families is low and it will take time to recover from seven years of austerity. Maximizing seafood quality is thus particularly important as seafood is a highly perishable product. Value for money is key, shoppers want to be delighted and are prepared to pay for a high quality product, but disappointment in front of low quality will risk shoppers trading out of the category altogether.

In UK, cod is an important species but not significantly growing, while consumption of salmon increases both in volume and value. Both species were affected by the recession, but since 2012 the consumption of salmon shows a significant growth (Seafood Consumption Fact Sheet 2015).

In general, there are no major changes in distribution channels. However, the development of new sushi chains for take-away and home-delivery has opened a new growing distribution channel. Younger urban people dominate the sushi market, while family economy struggles due to still low purchasing power and focus on value for money.

When consumption (by quantity) of FAP is down, it is mainly seen that in-house consumption is down, as the family purchasing power struggles, as shown in figures from DEFRA:

Consumption g/person/week	**2007**	**2009**	**2011**	**2013**
Househould	165	158	147	146
Eating out	13	14	13	13
Total	**178**	**172**	**160**	**159**

For household consumption, in general all categories of FAP are stable or down, except for salmon (fresh or chilled) and ready meals (frozen or not frozen). Total expenditure on FAP has increased by 11% in the period 2007-2013.

According to the study Jonathan Banks' Consumer Trends (2014), fish consumption is increasing, mostly in value, although volume is also growing. This trend is particularly relevant for ready meals and salmon. There is an increasing development of private labels. 80% of CEO's believe their brand provides a superior customer experience, only a marginal share (8%) of the customers agrees.

According to Seafish, UK consumers purchased £ 6,33 bn (EUR 5,1 billion) of seafood in 2014, up by 3.3% from the year before. This was split by £ 3.14 bn from retail for consumption at home (-0.4%) and £ 3.19 bn (+7.3%) for out of home consumption. In 2007, UK consumers purchased £ 5.4 bn (EUR 3,7 billion). These figures show that the value of seafood consumption has increased compared to before the recession. This can be a result of either increasing prices or more value added products or both.

UK consumer Seafood purchase (£ bn)	2007	2014
Retail – at home	2.6	3.1
Catering & institutions – out of home	2.8	3.2
Total	**5.4**	**6.3**

Species/products with ecolabels or sustainable labels seem to be preferred by consumers, although the understanding of the meaning of labels is still wanting, see Can Consumers Understand Sustainability through Seafood Eco-Labels? A U.S. and UK Case Study (2013,2014).

Recommendations: As the retailer has a key role in both providing new choices to customers and making choices for them, s/he acts as guardian of safety, quality and ethical issues for consumers. Shoppers trust their local food retailer doing the right thing. Online shopping offers a great potential in helping consumers make quickly ethical and personal decisions.

Young people are more important in the household than ever before and retailers needs to consider how to better attract the 11-16 year age group audience with tailored marketing and product offers, see Our Future with Fish – investigation customer attitudes, behaviours and motivations, 2014. The group of younger urban consumer is increasing and use of social networks and blogs are important to reach this group with information, see Consumer Knowledge and use of information about fish and aquaculture, 2013.

<u>Ireland</u>

In total, 8 studies have been mapped, all of them from the period 2012-2015 and all issued in English. The studies are a mix of production- and market reports and presentations based on data from expert panels on consumer behaviours. No reports are undertaken with systematic recurrence.

According to the Irish Seafood 2012, the total consumption of FAP is 21.4 kg per capita (2007). This is about the same as average EU consumption (22.1 kg per capita.) Fish consumption increases and it does so more than consumption of other protein sources. Seafood accounts for 2% of the Irish grocery market.

Smaller households and new household types are creating new needs for meal preparation, such as male single person households where men are on average less engaged with cooking and preparing traditional complete meals. Limited-service restaurants (including fast-food and fast-casual restaurants) will remain a key driving force in the long-term movement towards eating out, expanding offerings into breakfast and dinner. Like in UK, consumption of salmon is growing in Ireland, together with cod, haddock and hake. Freshness is the main driver. Together with cod and salmon, coley, hake, haddock and prawns are important species. Consumption of fresh fish increases, the summary of fish sales in the Irish grocery market, broken down on the main important species shows following development in the period June 2014-June 2015 (Irish Seafood Sales – Species Breakdown, 2015):

- Coley: +8 (fresh +, mainly prepacked RAW)
- Salmon: +15 (fresh+, frozen-)
- Hake: +20, fresh+, mainly prepacked RAW
- Haddock: -26 (fresh- prepacked/frozen- RTC)
- Prawns: -3 (fresh+/frozen-)

Irish consumer confidence is growing. Shoppers want to be healthy, and turn to pure and natural products. New technologies also helps consumer increasing the knowledge (Irish Retail Seafood Market Performance, 2015). Studies of consumer habits show increasing interest for fresh consumption, while available market data figures show an opposite trend: increase for frozen, decrease for fresh ones (2015 vs 2014), with ready-to-cook frozen products being the main driver behind this trend. Consumers are moving away from coated fish, with the strongest decrease in consumption signaled in fresh coated fish.

The Irish Fresh report (2013) is focusing on the Irish consumer who has become extremely price conscious and whose purchase patterns are affected by rising food prices . For FAP, the consumers are focused on good value in terms of fresh selection and high quality, which in turn are the main parameters when decisions where to buy is made.

The Irish Fresh Report (2013) points at some general recommendations with references to important characteristics of the developing consumer habits:

Fresh foods are integral to the success of the retailer and high-traffic volume boosters, thus expertise on shopper expectations is the key to unlock the potential. It is imperative to apply a style of category management based on the knowledge of the Irish consumer and to better understand how different consumer groups purchase fresh differently (at which stores, at which price points etc.)

Consumers buy fresh products with their ‘eyes’ and thus display and presentation are of critical importance. Freshness, quality, good value for money and importantly, the human connection are important factors that keep customers coming back for more.

One study points out a mismatch between fish landings and market trends and claims that Irish consumers are not aware of the problems the local marine systems are facing and that consumers that are lacking this awareness or that have a disbelief of the problems facing the fisheries industry are as a result unable, or not willing, to make responsible and informed purchasing decisions. In order to facilitate the influence consumers can exert through responsible decision-making, which could relieve pressure from overexploited stocks, transparency within seafood and fisheries industries is strongly recommended to be established (Mismatch between fish landings and market trends: A western European case study, 2012).

<u>Netherlands</u>

The information below is based on five different studies, conducted from 2008 to 2014. 3 of the studies are issued in the country’s language. The research is of a general nature, focusing on broad consumer studies targeting a range of commodities or current overall situation for fishery and aquaculture products. The latter are conducted by the Dutch Fish Marketing Board in cooperation with GfK in 2013 and 2014. The sources are a mix of scientific studies and market analysis.

The Dutch fish sector (on the consumption side as well as on the production side) has undergone major changes over the last 10 years. One development is the replacement of wild catch by fish from aquaculture. The consumption of fish is also increasing. Dutch people eat on average 70 grams of fish per week, i.e. more or less once every second week. Many people however do not eat any fish at all. Another important development is the rise in purchase of MSC-certified fish, see PATHWAYS project exploring transition pathways to sustainable, low carbon societies.

The main consumed products have a strong and increasing market presence. In 2008, the top-10 products purchased accounted for 46.7% of the sales of FAP, in terms of volume. In 2012 the corresponding percentage was 52.2%. Note that the top-10 products in 2012 changed from the top-10 in 2008.

Frozen fillets of Pangasius have become one of the main products sold (in terms of volume in 2013), while they were ranked number 8 in 2007, when canned tuna was ranked number 1. In value, products of salmon are dominating the ranking with 3 of the top-5 products (smoked, fresh and frozen). Nearly 40% of the FAP sold in the Netherlands in 2013 were fresh. The main distribution channel is represented by supermarkets, accounting for approximately 85% of the market share (2013). In 2006, the market share was less than 70%.

The older, the more often people eat fish. The reasons for opting or not for fish vary a lot according to generations. Pensioners eat more fish for health reasons, while young people often opt for fish because of its taste. Differences also exist in terms of which fish is consumed. Elderly and pensioners eat more often herring (tradition) than younger generations, who instead choose more frequently salmon.

More than half of the fish eaters regularly buy fish at the fish stands, and four in ten fish eaters eat fish in a restaurant.

<u>Germany</u>

The mapping of the German market trends are based on 2 studies, one of which is in the country's language. One study is a market analysis published by the Norwegian Seafood Council in 2014 and the other is a presentation based on a GfK panel study. Both reports are relevant for the analysis here and of general nature, targeting German consumers and their habits related to FAP.

The consumption of FAP shows a downward trend in the last years. In the years 2006-2011, fish per capita consumption was quite steady between 15,2 and 15,5 kg. It then decreased by more than 10% in 2012-2013 to reach 13,8 kg in 2013, before experiencing a slight improvement in 2014 (14,0 kg).

Some significant changes have been observed by species in the last decade. Alaska pollack, the main species used by the German industry, and salmon, have strongly improved their market shares, while herring and carp have experienced significant declines. Pangasius strongly increased its popularity among German consumers in the years 2005-2009 (its share in the fish consumption rose from 1,5% in 2005 to 6,7% in 2009) before falling to 2,8% due to image problems.

The actual consumption figures are not totally in line with the popularity of the various species. Asked about their preferred fish, 29% of consumers quote salmon. Prawns came second on the list of preferred species (12%), followed by saithe (10%) and tuna (9%).

The share of fresh fish has decreased from 11% of the total fish consumption in 2005 to 8% in 2012 before slightly bouncing back to 9% in 2013-2014, probably in relation with the new policy of hard discounters, who started to sell fresh fish at this time.

The share of preserves and marinades also clearly declined, from 30-31% in the years 2005-2008 to 26% in 2014. This drop is attributable to herring.

At the opposite, smoked fish has experienced a big increase, rising from 6% of total fish consumption in 2005-2007 to 12% in 2014 due to wide availability of cheap smoked salmon from Poland.

Prepacked fresh fish cuts have increased, cans have decreased.

Sushi consumption increased. The first sushi chain opened its doors back in 1990 and by 2014 there were over 800 shops of this kind in Germany.

The older the consumer, the more fish consumed. According to a GfK survey, consumers less than 34 years of age bought 5,5 kg of fish (all presentations) per capita in 2012 against 7,8 kg for 55-64 years and 8,9 kg for consumers above 75 years.

Between 2011 and 2013, discounters' share slightly increased, from 39% to 40% of fish products sales (value). Market share of other large-scale retailers remained stable at 37%, while fishmongers' share was slightly reduced from 11% to 10%.

Fish purchasing frequency in supermarkets has increased in the last decade (2002-2010), while purchasing frequency in specialized retail shops was resilient.

About two-thirds (65%) of all fish consumed in Germany is eaten in German households, while about one-third (35%) is eaten out of home. Out-of-home fish consumption has been stable over the last years.

The survey commissioned by the Norwegian Seafood Council concludes that to increase the presence of fish on German tables you have to focus on enjoyment and convenience, more than on healthy eating. This survey recommends taking into account two starting points to make fish more attractive: 1) fresh fish has to be perceived as convenient and 2) the enjoyable aspect of frozen fish needs to be emphasized.

Belgium

The analysis on Belgium is based on six scientific studies in English. The topics are mainly consumption of FAP and of a general nature. Some have a narrower scope, exploring differences in consumer attitudes towards farmed and wild fish, or differences between light and heavy users. Even though most of the studies contain relevant information on consumer habits and trends, most are dated with no information after 2011.

95% of the households purchased FAPs in 2014 (market data VLAM), with an average frequency of 20 times / year (stable compared to 2013).

Total fish expenses per inhabitant increased by 2.2% between 2012 and 2014. Almost all segments increased, at the exception of frozen fish (market data from SFP Economie).

Household expenses per capita for FAPs in Belgium in 2014 (EUR)

Product	Annual expenses per person (household)	Evolution 2014/2012	% total 2014
Fresh fish	40	+1.7%	33%
Preserved/processed	29	+10.2%	24%
Fresh crustaceans	23	+1.2%	19%
Smoked fish	14	+12.4%	11%
Frozen fish	9	-28.5%	8%
Frozen crustaceans	8	+20.6%	6%
Total	123	+2.2%	100%

Source: Statistics Belgium(enquête sur le budget des ménages, SFP économie)

In 2014, 43% of the households purchased fresh cod and 37% purchased fresh salmon. Those two species account for 46.9% of the purchases of fresh FAP while they "only" accounted for 34.2% in 2005 (VLAM).

In 2014, FAP account for 14.8% of the volume and 17.9% in value of household purchase of animal proteins, the share in volume remained stable between 2008 and 2014 but increased in value (16.6% in 2008). Over the same period, the most important increase has been registered for poultry (24.7% of volume purchased in 2008 and 28.0% in 2014).

FAP are mainly sold by large retailers with 43.2% of the sales. This share reaches 77.4% if we take into account hard discount and small supermarkets. These retail channels are increasing: they accounted for 75.6% of the sales in 2008. Fishmongers account for 12% of the sale in 2014 (15.4% in 2008) (VLAM).

Breakdown of FAP sales (volume) in the different retail channels in Belgium in 2008 and 2014

	2008	2014
Large retail	41.0	43.2
Hard discount	25.2	22.2
Local supermarket	9.4	12.0
Public markets	6.4	6.4
Fishmongers	15.4	12.0
Other	2.7	4.2

Source: Gfk PanelServices Benelux in VLAM

60% of FAP consumption takes place at home, 28% in food service, 10% with family/friends and 3% in delicatessen. This differs in function of the species: cod is highly consumed at home (70%) while mussels are more frequently consumed in food service (41%).

Luxemburg

Fresh and frozen products account for 45% of expenses for FAPs and have had a large increase since 2005 (+40.3%):

- Processed products account for 22% of expenses and increased since 2005 (+2.4%)
- The expenses for other products decreased for:
  - Dried, smoked, and salted fish: -21.4% between 2005 and 2013
  - Shellfish, crustaceans (fresh, frozen) : -16.9% between 2005 and 2013

	Expenses per household per year (EUR)	% total	Evolution 2013/2005
Fish (fresh, frozen)	152.0	45%	+40.3%
Shellfish, crustaceans (fresh, frozen)	57.2	17%	-16.9%
Sea products (dried, smoked, salted)	56.3	16%	-21.4%
Processed products	76.0	22%	+2.4%
Total	**341.4**	**100%**	**5.7%**

Source: STATEC, Enquête EBM

3.6 Major findings – Northern EU countries

In general

- Fish consumption is highly dependent on imports.
- Consumption is relatively low, well below EU average.
- FAP are generally considered as expensive products.
- Consumers are increasingly aware of sustainability issues.
- There is an increasing interest in FAP due to increasing availability, fresh fish consumption in specific has increased together with increasing availability

Summary of Findings in Studies of Consumer habits	Northern EU countries		
	DK	FI	SE
Existing Studies of Consumer habits	Y	Y	Y
General consumption of FAP	Qualitative description	14.6 kg (2013)	about 25 kg (2009)
Effect of financial crisis*			
Price sensitive*			
Main preservation	Fresh increases	Fresh	Fresh
Main presentation	Increasing interest of sustainability and organic products	Preserved FAP increases	Frozen fillets and prepared products increases
Main specie	NP	Salmon (4 kg/capita) Rainbow trout: 2 kg/capita, Canned tuna 1.9 kg/capita)	Salmon, herring, cod
Main distribution	Increasing door-to-door service	Hyper- / supermarkets and stores dominates in selling FAP	
Demographic; Age/Gender	Y	Y	
Main factor for purchase*			
Urban/Rural		Y	
Sustainability issues*		Y	Y
Attitude to farmed*			
In-house/out-of-home			Increasing out-of-home
Recommendations	Y	Y	Y

* These themes are not included in the summaries for each country, but nevertheless featured in some country-summaries and incorporated in the table to expand the width of the summary. If not disclosed in summary, it is not commented in the table

Sweden

9 studies have been mapped for this country/MS, 5 of which are drafted in the country's language or in other Scandinavian languages. Two reports are authored by the Norwegian Seafood Export Council and not available for the project team. There are relatively few relevant studies regarding fish consumption in Sweden, and the studies found are either quite wide and with little relevance for the scope of the analysis here, or, on the other hand, very narrative both related to species or scope. Based on the studies, the following findings can be presented:

Sweden is a net importer of fish. Main species are herring and cod. Fillets, both frozen and fresh, are experiencing a rapid growth in terms of market share. The Swedish seafood consumption in the period 2005-2009 is trending around 25 kg per capita, see the study Focus on the Swedish Market from 2011:

Consumption per Capita (kg)	2005	2006	2007	2008	2009
Fresh or frozen	13,8	13,0	13,5	13,7	14,0
Prepared or preserved	11,7	12,3	12,9	11,5	11,4
Total*	25,5	25,3	26,4	25,2	25,4

* Source: Focus on the Swedish market, Fish and Seafood (2011)

In the statistical report Livsmedelsverket-Konsumentstudie 2014, consumption per capita is about 15 kg in 2013, up from about 10 kg/capita in 2000. It is worth to note that these figures do not include the category Fresh Fish, as the data basis for the statistic is considered to be uncertain.

In the study European consumer perceptions and barriers for fresh, frozen, preserved and ready-meal fish products (2013) we find that consumers are positive towards fresh fish, although they perceive that category to be less available than other fish presentations. In general, consumers are concerned about environmental risks. Fish in general is perceived as a rather expensive product.

In the study Livsmedelskonsumtionen i siffror – Hur har konsumtionen utvecklats de senaste femtio åren och varför? (2015) we find that together with higher education, better standards of living and more health-consciousness, the consumption of fruit, vegetables, fish, dietary fiber and whole grain increases. At the same time, consumptions of fat and sugar are down. In general, the degree of processed food is increasing. Reduction in the relative cost of food, globalization and changing lifestyles are some factors that have contributed to changing eating habits.

The out-of-home consumption increases. Consumption of fresh fish is stable, while consumption of frozen fillets and other prepared products increases. Consumption of crustaceans and molluscs seems to have reached its highest level 15-20 years ago and has now stabilised at a lower level (Livsmedelskonsumtionen i siffror – Hur har konsumtionen utvecklats de senaste femtio åren och varför? 2015).

Denmark

4 studies have been mapped for consumer habits in Denmark, two of them in the country's language. Two reports are issued annually, and only the latest editions have been mapped. The study "Denmark Channel Habits, Behaviour and Attitudes Snapshot 2015" are only available for purchasing. The studies are in general production- and market reports, some based on panel data from The Nielsen Company.

The consumption of FAP is below the level recommended by national authorities (350 g per person per week), according to the study Dietary habits in Denmark 2011-2013 (2015). The accessibility of fresh fish has improved and Danish consumers are now eating significantly more fresh fish than previously. Campaigns for increasing fish consumption appear to have a positive effect on consumption, but only as long as the campaign is active.

In the study Seafood Export Profiles – Denmark sector report (2014) we find that supermarkets offers door-to-door service for fresh fish, in addition to fresh fish counters. Fresh fish has become more easily accessible thanks to the development of home-delivery activity by online fish retailers and delivery of fish boxes to households. Fresh fish sales in supermarkets are increasing, while sales of canned, frozen and fish ready meals are decreasing. There is a trend towards increased availability of sustainable and organic fish products, which has stimulated consumer interests and demand.

No specific information related to in-house/out-of-home consumption could be obtained. A small difference between genders is registered: men consume slightly more fish than women.

The study "Campaign effect measurement March 2012 - Fish twice a week" recommends to continue with consumer campaigns to increase consumption and to keep it at a higher level, by focusing on product availability and on younger consumers.

<u>Finland</u>

The analysis of the Finnish market is based on four market analyses published in 2012 and 2013. One of four studies is in Finnish, and the remaining in Norwegian and English. Most of the studies are of a general nature, focusing on the Finnish consumer's preferences and attitudes towards FAP, and the economic outlook for the fishery industry in Finland. One study has a narrow focus on a specific product group (frozen crustaceans).

Fresh fish is popular and widely available. The main species consumed fresh are domestically produced species as well as imported species such as Norwegian salmon and rainbow trout and fish of the North Sea.

Among Finnish households, slightly over 12% of total household expenditures are for food and non-alcoholic beverages. This share is relatively low. Yet, Finnish consumers perceive food prices as high and most of them give more importance to lower prices than to product characteristics such as quality and sustainability. In addition, fishing in domestic waters for leisure is widely popular among Finns and is a way to supply households with fresh fish at very low cost. This has an effect on willingness to pay for fishery products.

Seafood consumption in Finland has remained relatively stable from 2007 to 2013 with a slight dip in 2008 and 2009 (supposedly in relation with the financial crisis). Seafood consumption peaked in 2011 (14.9 kg/capita) and has since then trended slightly down – to 14.6 kg/capita in 2013.

Dependency on imported FAP has gradually increased. In 1999 the consumption ratio for imported FAP vs domestic FAP was 1. In 2006, 63% of consumption was made of imported FAP and in 2013 the percentage rose to 74%.

Farmed salmonids dominate consumption, with farmed Atlantic salmon in the lead (imported species). In 2013 Finnish consumption of farmed Atlantic salmon was 4 kg/capita, which represents a doubling from 2006.

As to domestic fish, rainbow trout is the most consumed species in Finland (1.1 kg/capita in 2013). Consumption has been stable since 2006, however lower than in the previous years. By adding imports, rainbow trout consumption in 2013 adds up to 2 kg/capita.

Canned tuna was the 3rd most consumed species in 2013 (1.9 kg/capita). Consumption of preserved FAP has increased in the last years, from 2 kg/capita (i.e. around 15% of total FAP consumption) in 2006 to 2.3 kg/capita in 2013 (tuna: 1.9 kg/capita and herring/Baltic herring: 0.4 kg/capita).

Households with elderly consumers consume most FAP. Average household expenditures on FAP are 216 EUR (2012). Households within the age group 55-64 years spent the most for FAP (275 EUR) followed by the age group 65-74 years (259 EUR). Studies also show that households in urban municipalities had the highest spending on FAP in 2012, 10% higher than in rural municipalities and nearly 23% higher than semi-urban municipalities.

The food retail market in Finland is highly concentrated. Almost all fishery products, including processed, are sold through the supermarkets, hypermarkets and other stores belonging to one of the few retail chain groups. Finnish retail is vertically integrated with sourcing (wholesale) and distribution companies.

Recommendations: The Finnish consumer is price-sensitive and price is an important factor when deciding what to eat. Furthermore, growing consumer awareness on sustainability suggests that the consumption/demand for certified products (organic, MSC, ASC) will increase. Source: Product Factsheet: Frozen Crustaceans in Finland, 2013.

3.7 Major findings – Southern EU countries

In general

- There is a large diversity within the countries regarding fish consumption, e.g. Croatia has a fish consumption level well below EU average, while Portugal is well above.
- All countries have an important self-supply of FAP
- Price seems to be an important key for increasing consumption.

Summary of Findings in Studies of Consumer habits	Southern EU countries, PART I			
	ES	FR	IT	PT
Existing Studies of Consumer habits	Y	Y	Y	Y
General consumption of FAP	20.4 kg (2014)	33,5 kg (2014)	Qualitative description	56.8 kg
Effect of financial crisis*	Y		Y	
Price sensitive*	Y	Y		Y
Main preservation	Per capita 2014 Fresh: 11,8 Canned: 4,4 Fresh crustaceans and shellfish: 4,2	Fresh products dominates	Fresh	Fresh/chilled Frozen
Main presentation		Fresh fish (incl whole and cuts)	Fresh ↓ Frozen → Dried/salted ↑	Whole
Main specie	Hake, shrimp, squid/octopus	Up for finfish Down for mokluscs and crustaceans	mussels, seabream, anchovies, seabass, clam, octopus, trout, salmon, cod, hake and squid	Cod, Tuna, Hake, Sardines Gilthead seabream, salmon
Main distribution	Specialized shops: fresh hake, whiting, fresh and frozen sole, frozen mussels Super- and hypermarkets: frozen hake, anchovy, fresh salmon, canned and smoked products	Large retailers remain the main market	Fishmongers: molluscs Large-scale retailers: farmed products	Large scale retailers
Demographic; Age/Gender	Y	Y		Y
Main factor for purchase*	Freshness, advice by seller, orice and tidiness of shop	For fresh FAP; freshness, species and price	Description of barriers that hinder more consumption of fresh fish products	
Urban/Rural	Y		Regional	Regional differences
Sustainability issues*				
Attitude to farmed*		Y		Y
In-house/out-of-home		Y		
Recommendations		Y	Y	

* These themes are not included in the summaries for each country, but nevertheless featured in some country-summaries and incorporated in the table to expand the width of the summary. If not disclosed in s

Summary of Findings in Studies of Consumer habits	Southern EU countries, PART II			
	EL	HR	MT	MT
Existing Studies of Consumer habits	Y	Y	CY	N
General consumption of FAP	nearly 21 kg	8-10 kg		
Effect of financial crisis*				
Price sensitive*	Y	Y		
Main preservation		Fresh		
Main presentation		Gutted or filleted		
Main specie		Sardines, hake		
Main distribution	Main: Traditional fish shops and local markets	Taditional fish shops and fishmongers		
Demographic; Age/Gender		Y		
Main factor for purchase*	Freshness, price	Y		
Urban/Rural				
Sustainability issues*				
Attitude to farmed*	Y	Y		
In-house/out-of-home				
Recommendations	Y	Y		

* These themes are not included in the summaries for each country, but nevertheless featured in some country-summaries and incorporated in the table to expand the width of the summary. If not disclosed in s

France

The information below is based on a total of nineteen studies ranging from 2009 to 2015. 16 of the studies are in French and 3 in English. In general, the studies contain comprehensive relevant information about consumer behaviour with regard to FAP and are a mix between scientific studies and market analysis. Some are wide, focusing on food in general; some are closer to the scope of the analysis here, focusing on FAP. Certain studies are quite narrative e.g. only one specie in the scope or one supply chain, or the importance of labelled information for one product group. 5 of the studies are conducted as part of a larger research project co-financed by the EU, focusing on consumer behaviour with regard to fresh FAP.

Between 2009 and 2014, total consumption of FAP decreased in volume (-5,8%) but increased in value (+6.9%).

By group of species, clear differences can be observed: consumption increased by 1.7% for finfish and decreased by 14.7% for molluscs and crustaceans. This decrease is mainly the result of the drop of the shellfish supply, due to mortality issues in the oyster farms.

Evolution of FAP products consumption in France between 2009 and 2014 (kg / inhabitant)

	Finfish	Shellfish Crustaceans Cephalopods	Total
2009	23.2	11.6	34.8
2014	23.6	9.9	33.5
Evol. 2014/2009	+1.7%	-14.7%	-3.7%

Source: FranceAgriMer

Specific trends can be observed by preservation state or by presentation.

- ✓ Fresh products: decrease in volume (-12.3%), increase in value (+0.2%)
- ✓ Delicatessen products ("produits traiteur"): increase in volume (+7.4%) and value (+19.5%)
- ✓ Frozen products: decrease in volume (-8.6%) and value (-0.1%)
- ✓ Preserved products: decrease in volume (-6.5%) and increase in value (+8.5%).

Household consumption of FAP in France 2009-2014

	Volume (t)				Volume (k€)			
	2009	2014	Evol 2014/2009	%total 2014	2009	2014	Evol 2014/2009	%total 2014
Fresh products	259 662	227 790	**-12.3%**	34.3%	2 342 937	2 346 902	**0.2%**	33.2%
Fresh fish	142 494	124 755	**-12.4%**	18.8%	1 600 895	1 603 736	**0.2%**	22.7%
Fresh fish (whole)	45 829	38 121	**-16.8%**	5.7%	385 156	366 679	**-4.8%**	5.2%
Fresh fish (cut)	93 894	83 746	**-10.8%**	12.6%	1 179 357	1 193 383	**1.2%**	16.9%
Fresh crustaceans	18 313	15 582	**-14.9%**	2.3%	211 319	198 772	**-5.9%**	2.8%
Shellfish fresh	94 539	81 948	**-13.3%**	12.3%	496 362	487 846	**-1.7%**	6.9%
Cephalopods fresh	4 316	4 408	**2.1%**	0.7%	34 361	39 156	**14.0%**	0.6%
Delicatessen products	164 819	176 974	**7.4%**	26.6%	1 910 891	2 284 107	**19.5%**	32.3%
Frozen products	153 346	140 200	**-8.6%**	21.1%	1 397 966	1 396 352	**-0.1%**	19.8%
Preserved products	127 475	119 148	**-6.5%**	17.9%	955 478	1 037 143	**8.5%**	14.7%
Total	**705 302**	**664 112**	**-5.8%**	**100%**	**6 607 253**	**7 063 974**	**6.9%**	**100%**

Source: FranceAgriMer

The consumption rate is quite high for FAP, mainly for processed products: 95.5% of the people consume delicatessen products, 94.8% canned products, 86.6% frozen products and 79.6% fresh products. Only 23% of consumers eat fresh fish at least once a week (versus 87% for fresh fruit and vegetable and 71% for fresh meat), so the average consumption frequency is 1.5 times a week (versus 6.4 for fresh fruit and vegetable and 2.9 for fresh meat). However, while the consumption of fresh meat products is on a decreasing trend since 2010, the consumption of fresh fish remains more stable (source: Kantar Worldpanel).

By demographic segment, the following observations can be made:

- ✓ Fresh products are more consumed by people above 50 years, who represent 51.0% of the French total population and consume 73.5% of fresh fish.
- ✓ Delicatessen, frozen products and preserved products are more consumed by the age classes 35-64 years.
- ✓ People under 35 years are the ones who consume less FAP.

Distribution of consumption (volume) by age class in 2014

Age class	**% in total population**	Fresh products	Delicatessen products	Frozen products	Preserved products
Less 35 years old	**21.3**	7.9	15.8	17.5	17.0
35-49 years old	**27.7**	18.5	30.4	31.0	30.5
50-64 years old	**25.3**	33.7	30.0	27.1	29.3
More than 65 years	**25.7**	39.8	23.8	24.3	23.2
Total population	**100.0**	100.0	100.0	100.0	100.0

Source: FranceAgriMer

By distribution channel there are differences according to the presentation/preservation state of the product, but large-scale retailers are dominant, including for fresh fish. They have a smallest market share for frozen fish (50% in value) due to the strong position of retailers specialized in frozen products (17% in value) and home delivery (14% in value).

Distribution channels by product category in 2014 (% value)

Presentation/ Preservation	**Large-scale retailers**	**Hard discount***	**Freezer centers Door-to-door selling**	**Outdoor markets**	**Fish- -mongers**	**Other**	**Total**
Fresh products	71%	/	/	15%	9%	5%	100%
Delicatessen	78%	9%	/	/	2%	11%	100%

Presentation/ Preservation	**Large-scale retailers**	**Hard discount***	**Freezer centers Door-to-door selling**	**Outdoor markets**	**Fish--mongers**	**Other**	**Total**
products							
Frozen products	50%	11%	31%	/	/	8%	100%
Preserved products	75%	14%	/	/	/	11%	100%

* hard discount is included in large-scale retailers for fresh fish

Source: FranceAgriMer

The perception of the point of sale differs in function of the retail channels. The following table displays the consumers' perception for each type of shop.

Perception of the points of sales for fresh FAP

	Large retail	Outdoor market	Fishmongers
Positive	Lower prices (promotion) Easy access Large range Attractive shelves	Good quality / price ratio Freshness Large range Professionalism	Attractive shelves Freshness Friendly Trust
Negative	Stressing Lack of professionalism	Prices sometimes high	Prices sometimes high Low dynamism

Source: Mesnildrey et al. in Cogépêche, 2015

Out of home consumption: purchases of foodservice companies have exceeded EUR 1.1 billion in 2013. Main product categories are:

- plain fish (salmon 18%, cod 13%, Alaska pollack 8%),
- raw shellfish (scallop 40%, mussel 28%, oyster 24%),
- delicatessen (smoked salmon 34%, precooked breaded fish 33%, cooked shrimps 9%),
- canned fish (tuna 67%, mackerel 16%).

Purchases of aquatic products by HORECA (food service) companies in 2013

	Million EUR
Plain fish (« poisson nature »)	693
Raw shellfish	157
Delicatessen (« produits traiteur »)	155
Raw crustaceans	65
Canned products	44
Cephalopods	22
Total	**1 135**

Source: FranceAgriMer-CREDOC

Consumers perception on fresh FAP is positive. For most people, these products are liked for freshness, good taste, pleasure, togetherness, health and richness in omega 3. However, on the other side, fresh FAP are also linked to pollution risks, high prices, cooking difficulties and product fragility (Mesnildrey et al. in Cogépêche, 2015).

Consumer knowledge on FAP remains limited in many cases, notably due to the large development of the processing industry and the distance between the consumer and the catching/farming stage. For instance, the knowledge on FAP seasonality is limited among consumers (example from fruit & vegetable sector shows that it can be improved through communication). As they are not necessarily aware of seasonality and thus do not understand the evolution of range and prices during the year. This explains why a limited number of species with low seasonality accounts for a great share of the consumption. In front of a large range of products, consumers focus on species they know and which reassure them. Secondly, the organisation of the shop may encourage the purchase in self-service compared to loose fish, notably the presence of ice which leads to humidity and puddles (Cogépêche, 2015).

The demand from consumer for fresh FAP is related to pleasure, safety, ethic, convenience and health-nutrition. Discrepancy has been highlighted between purchase intentions and purchases. Based on survey among consumers, the most important criterion for fresh FAP purchase is freshness, followed by aspect, species and price. From the seller's point of view, the first criterion is price, followed by freshness. Furthermore, while consumers declare they are looking for fresh FAP from wild fishery with low fat, cut, boneless and fresh, the first product purchased is salmon which is cut, boneless, fresh but mainly comes from aquaculture and is considered as a fat fish (Cogépêche, 2015).

Recommendations

The Cogépêche project (2015) provided recommendations to increase fresh FAP consumption:

- Identification of the market trends and innovations on the processed products market. In 2012, the following trends have been identified: "fish is not only for Friday", "eating is a social behaviour", "new processes respecting the product", "exceptional daily" and "multi-uses products".
- Improvement of extrinsic features of the fresh FAP (compared to intrinsic features: what the consumer eats): service, packaging, function/uses, process and image of fresh FAP.

Greece

2 scientific studies of consumer habits for FAP are mapped for the Greece market. Both studies are in English and conducted in 2013 and 2014. The scope is general for fish products in one study and for farmed fish in the other.

Greece stands for approximately 3% of EU's total fisheries production in terms of volume. The country is the main supplier of seabass/seabream in the EU, and represents 9% of the total volume of EU aquaculture production. The Greek fishery and aquaculture sector contributes significantly to the country's primary sector production and to its national Economy (FAO, National Aquaculture Sector Overview). The aquaculture production is dynamic and with rapid changes in market and it has influenced the consumer demands. Especially, the long term growth of aquaculture will be market driven and will depend not only on consumer demand but also on the capability to adapt to the structure and legislative demands of the target markets.

The average fish consumption per capita is nearly 21 kg/year.

Results from a consumer survey conducted on a sample of 395 randomly selected consumers ("Consumer's attitude concerning the marine captured fish market in Greece" Ch. Batzios *et al.,* 2002), show that the majority of respondents buy fish "once a week". The preferred points of purchase are traditional fish shops and local markets and freshness is the most important purchasing criterion. 78,2% of the respondents consume fish all along the year and prefer a certification of fish quality.

Another study ("consumers' attitudes towards fisheries products", Kaimakudi E., *et al.,* 2013) identifies two consumer groups with different potential for aquaculture products; the first one with lower educational level and a monthly income of around 700 euro, the second one with higher educational level and higher incomes (1000-1500 euro). The first one resulted to be "low potential aquaculture consumers", considering that 22% of the sample preferred aquaculture products. The group with higher incomes resulted to be "high potential aquaculture consumer", indicating a larger preference towards farmed products (37%).

On the other hand it has to be underlined that the second group preferred frozen and processed products to fresh products and purchases products in supermarkets, while the cluster with lower income preferred traditional counters and fishmongers, and purchases fish at a higher frequency (1-2 times per week, vs 1-2 times per month for the group with higher income).

In general, in both groups, preferences are for wild fish more than for aquaculture products, independently from consumers' demographic and socio-economic status. This preference for fish coming from fisheries is related to the fact that Greek fish consumers are accustomed by tradition to wild products and also to the fact that a high percentage of aquaculture products is exported.

For approximately 50% of the respondents, price is important purchase criterion.

Portugal

4 studies related to consumer habits of FAP are mapped, all drafted in English and conducted in the period from 2012 to 2015. One market report is undertaken recurrently. The studies are a mix of market reports and scientific studies. The market reports are wide, focusing on production and supply of FAP to the market. The scientific reports are more narrative and contain valuable information of consumer habits related to gender and regional variability, as well as main drivers for consumption.

Portugal is the EU country with the highest average annual per capita seafood consumption (56,8 kg/per capita), also supported by an important fishing tradition.

With 1.187 km (including Madeira and Acoras), Portugal is a country with a large coastal area, while its Exclusive Economic Zone propagates for 1,7 million km square; 76% of its population live in coastal areas. Consequently, food consumption has always been based on marine resources: Portuguese culinary tradition is mostly linked to small pelagics fish products (sardine), whole fish prepared with bones, and other different types of seafood.

Portuguese fish consumers perceive fish as healthy food. However, due to the current high level of seafood consumption, further increases may generate impacts on both: (i) population diet, already saturated of proteins, and (ii) stocks, with increased fishery pressure (source: "The seafood market in Portugal: Driving forces and consequences", Almeida C., Karadzic V., 2015).

In 2005, the household consumption for main species amounted as follows: (source: "Fish and seafood in Portugal – as review of its availability and consumption", Teixeira A., *et al.* 2013):

- Horse mackerel: 8,4 g/per capita/day
- Sardines: 6,6 g/per capita/day
- Frozen hake: 5,9 g/per capita/day
- Salted and dried cod: 5,1 g/per capita/day
- Canned tuna: 2,9 g/per capita/day
- Octopus (fresh/refrigerated): 1,6 g/per capita/day
- Octopus (frozen): 1,32 g/per capita/day
- Frozen squid: 1,2 g/per capita/day
- Shrimp and prawn (frozen): 1,0 g/per capita/day

In 2009, Portugal ranked 4th in the world in terms of fish and seafood supply, moving from 152,6 g/per capita/day in 1961 to 167,4 g/per capita/day in 2009 (source: "Fish and seafood in Portugal – as review of its availability and consumption", Teixeira A., *et al.* 2013). Categorizing the fish consumption, it emerges that the consumption of demersal fish significantly decreased from 108,49 g/per capita/day in 1961 to 91,23 g/per capita/day in 2009. Crustaceans increased from 0,27 g/per capita/day in 1961 to 6,3 g/per capita/day in 2009. Molluscs augmented from 0,82 g/per capita/day in 1961 to 11,51 g/per capita/day in 2009 (source: cit.). Due to a downward trend in terms of production, imported quantities have been increasing.

The Portuguese seafood consumption is characterized by a wide variety of species. Despite the culinary tradition, cod (salted and dried) does not exist into the Portuguese waters. However, there are several reasons to explain why it became the main species consumed in Portugal, and the consumption campaigns played a pivotal role in this. In fact, the "Cod Campaign" (1934 – 1967), during the period known as "Estato Novo", increased its relevance within the Portuguese diet up to recent days.

Through a 2012-consumer survey, it emerged that Portuguese consumers prefer wild fish to farmed products and fat to lean fish. Soaked cod, canned tuna and hake are the most eaten seafood products:

- Soaked cod: the main fish product consumed;
- Canned tuna: despite it being considered a staple product, with a low consumption value, it has become increasingly convenient due to the "new" and modern food habits and lifestyles;
- Hake (the third most consumed species): its importance is linked to the popularity of frozen hake products during the 20th century. In fact, prices of frozen hake products became lower than fresh fish ones, due to fishery expansion in African areas and the improvements in processing technology on board of fishing vessels.

Their consumption frequency is twice a week.

Gilthead seabream and salmon, though they are farmed species, register high consumption level, indicating the significant penetration of the farmed fish products into the Portuguese diets. In fact, soaked cod, hake, canned tuna, sardine, horse mackerel, as well as gilthead seabream and salmon are consumed at least once a week. On the other side, sardine and horse mackerel are currently losing their importance, despite the fact that they represent traditional Portuguese fish products. Pangasius, chub mackerel, perch, redfish, canned sardine and common mussel are much less consumed, while squid, octopus, cuttlefish, shrimp, edible crab, grooved carpet shell, pink cusk-eel, black scabbard fish, sole and seabass have recorded a moderate consumption level during the last years.

Despite the increasing importance of frozen fish products in the Portuguese diet, fresh/chilled fish products represent the main culinary choice, underlining a low interest for processed products. This preference is suggested by the perception of loss of the original and natural characteristics of the fish product: the longer distance between fisherman and consumer and the higher uncertainty in terms of safety, quality and nutritional features (Survey into the seafood consumption preferences and patterns into the Portuguese population. Gender and Regional Variability, 2013). Since fish is exposed to microorganism degradation after filleting without proper packaging or other protection, whole fish is more appreciated than fish steaks or fillets fish, in particular when it comes to sardine and mackerel.

Table 1 - Household consumption of main fresh species in Portugal - 2014

Species	**1000 tonnes**	**million EUR**
Clam	1,84	5,02
Gilthead seabream	4,78	31,05
Hake	5,04	29,03
Mackerel	7,21	19,74
Octopus	3,31	21,38
Salmon	5,11	37,88
Sardine	3,25	16,07
Scabbardfish	2,23	14,06
Seabass	2,91	19,12
Shrimp	2,24	22,67
Other products	19,41	117,69
Total Fresh	57,35	333,73

Source: EUMOFA, based on TNS – EUROPANEL data

According to the 2011 study conducted by IPMA (Portuguese Institute for the Sea and the Atmosphere), consumption preferences in Portugal show a tendency for fresh (chilled) fish rather than frozen, salted/dried, canned and smoked fish. Frozen is better accepted than canned and salty/dried fish. 49% of Portuguese consumers prefer whole fish products than steaks and fillets.

Consumption varies between men and women. What emerges is that men significantly prefer wild, smoked, salted and dried fish, while women prefer frozen fish products. In addition, men consume more cephalopods (octopus), while women show a high consumption of hake, pink cusk-eel and red fish. In fact, traditionally women are more sensitive to health issues than men, and this is why they prefer to consume lean fish species (source: "Survey into the Seafood Consumption Preferences and Patterns in the Portuguese Population: Gender and Regional Variability", Cardoso C., et al., 2013).

The distance from the sea is an important geographical parameter in matter of seafood consumption preferences and frequencies. In fact, coastal populations present a higher consumption of octopus while farmed fish products (gilthead seabream and seabass) are not so much eaten/preferred. In the Madeira archipelago, black scabbard fish is more frequently consumed than in other Portuguese areas, while sole and sardine is higher consumed in the southern areas of Portugal (Algarve and Alentejo).

Over the last years, the market dependency on imports has shrunk. Between 2010 and 2011, although the Portuguese consumption was one of the highest in the world, production represented only one third of the seafood consumption. The main species imported in 2011 were cod, shrimps, hake, squid, octopus, horse mackerel, tuna, sardines, mackerel, salmon, seabass, monk, crab and gilthead seabream.

Price has obviously effects on consumption frequencies. However, despite the risk that it could deter consumers from eating expensive products, such as cod, Portuguese consumers' choices are strongly affected by tradition. For this reason, despite the fact that its prices are two times higher than those of other fish species, cod remains the most consumed species.

Although fresh/chilled fish products are preferred to the frozen, salted/dried, canned and smoked fish products, consumption of frozen products and ready-to-cook meals has increased, not only because of the economic crisis (fresh/chilled fish are generally more expensive), but also because lifestyles have changed. In 2012, large scale retail became the most dominant sale channel (with 45,6% in value), mainly due to the 2010 legislation that allowed such stores to have more flexible opening hours.

Spain

A total of eight studies have been analysed in order to map the Spanish market. The language is Spanish in all articles. 6 of 8 studies have been undertaken recurrently by two different sources with a year or more time gap between publications (2010 – 2015). The studies are of a broad nature, focusing on FAP, food or products in general. Two are narrower, targeting only farmed fish quality or evolution of fishing. Most of the studies can be defined as a market analysis.

In 2014, Spanish households purchased 1,18 million tonnes of seafood products, which accounted for 8.9 billion euros (26,4 kg/capita and 199,5 euros / capita in 2008 vs 31,2 kg and 215,9 in 2008). Fresh fish accounted for the largest share of the consumption with 11,8 kg / capita / year, followed by canned products (4,4 kg / capita / year) and fresh crustaceans and shell fish (4,2 kg / capita / year) (source: MAGRAMA).

Household consumption decreased by 10% (volume) between 2008 and 2014. Most preservation states have been affected by this decrease; only canned and smoked products, which represented 16% of total FAP consumption in 2014, have increased.

Fresh experienced a downward trend but remains by far the dominant segment, with 61% of the total FAP consumption in 2014.

Evolution of FAP consumption in Spain (1000 tonnes)

Preservation state	2008	2014	Evolution 2014/2008	% total 2008	% total 2014
Fresh	832	717	-14%	63%	61%
Frozen	279	241	-14%	21%	20%
Cooked	34	29	-15%	3%	2%
Canned	151	173	+15%	11%	15%
Smoked	7	8	+14%	1%	1%
Salted	19	15	-21%	1%	1%
Total	**1 321**	**1 184**	**-10%**	**100%**	**100%**

Source: MAGRAMA

Hake, which is only the 7th most consumed species (per capita) in the EU (source: EUMOFA- The EU fish market consumption), is by far the main species consumed in terms of both quantity and value in Spain, accounting for 13% of Spanish fish consumption at home in 2014, and 24% of finfish species consumption.

On the opposite, cod and salmon are much less popular in Spain compared with France, UK or Portugal. Hake is consumed 3 times more than cod or salmon. But cod and salmon are the only species among the 10 most consumed which experienced an increase between 2010 and 2014 (+34% for cod and +58% for salmon), while hake registered a significant decline (-13%).

Consumption of fish (fresh and frozen) by species in kg/capita

Species	2010	2011	2012	2013	2014	Evol. 2010/2014
Hake	4,02	4,09	3,84	3,78	3,5	-13%
Shrimp	2,28	2,3	2,21	2,09	1,93	-15%
Squid/octopus	1,7	1,47	1,48	1,81	1,61	-5%
Mussel	1,25	1,23	1,24	1,1	1,21	-3%
Cod	0,82	0,85	0,88	1,08	1,1	34%
Salmon	0,73	0,86	1,09	0,97	1,15	58%
Anchovy	1	1,03	0,84	1	0,97	-3%
Sole	1,07	0,88	0,78	0,91	0,83	-22%
Seabream	0,68	0,59	0,72	0,64	0,61	-10%
Tuna/bonito	0,6	0,58	0,66	0,61	0,61	2%

Source: elaboration EUMOFA from MAGRAMA

Large scale retailers (supermarkets and hypermarkets) gather more than two thirds of the markets (67.3%) in terms of volume (48.1% for supermarkets, 12.7% for hypermarkets and 6.5% for hard discount). Specialised shops account for a large share of the market with 26.4% of the sales volume; however, the market share of these specialised shops has decreased between 2010 and 2014 while the market share of supermarkets increased. There are large differences for the retail channels depending on the type of products sold (source: MERCASA):

- Sales in specialised shops are notably important for fresh hake, whiting and anchovy, fresh and frozen sole, frozen mussels and fresh crustaceans.
- Sales in supermarkets are notably important for frozen hake and anchovy, fresh salmon, cooked crustaceans, canned and smoked products.
- Sales in hypermarkets are notably important for canned and smoked products.

Based on a study led in the Madrid Region (El consumo y la compra de pescado en la Comunidad de Madrid, Communidad de Madrid, 2010), the first criterion when purchasing fish is the freshness, followed by the advices by seller, the price and the tidiness/organisation in the shop. Consumers who are mainly interested in freshness are frequent consumers (between 1 and 3 times a week) and this attention to freshness increases with the age (35% of the 18-30 years old and about 55% of consumers who are more than 45 years old). Consumers for which the first criterion is the price are young people (less than 30 years old) and not frequent consumers. In term of interest for information, 43,0% of consumer would be interested in getting more information to assess the freshness of fish, 20,1% on the nutritional properties and 16,9% on the origin.

The survey led in the Madrid Region showed that 87.9% of the people consumed fish at least once a week, the consumption for women being more frequent than for men. Furthermore, the frequency of consumption increases with the age: only 27,8% of people between 18 and 30 years old consume fish more than 2 times a week while they are 48,1% for people of 60 years old and more. This study also showed that the three first motivations for eating fish were:

- the need to eat all food,
- because they like fish,
- because fish is healthier and more nutritional than other food products.

Households that consume the most FAP show medium or high income. Furthermore, the consumption of FAP tends to decrease when the number of people in the household increases: households with one person consume 67.3% more FAP that the national average and households with five people and more consume 40.8% less FAP than national average. Households consuming less FAP are couples with young children (less than 6 years old). Research indicates that if the person in charge of food purchase in the household does not work, the consumption of FAP increases (source: Mercasa based on MAGRAMA data).

Consumption of FAP is higher in large cities (more than 100 000 inhabitants) than in urban areas with 2 000 to 100 000 inhabitants. However, consumption is also high in rural areas (less than 2 000 inhabitants). FAP consumption is high in North-West regions (País Vasco, Castilla y León, Asturias and Galicia) while it is low in the South-Est (Murcia) and island regions (Baleares and Canarias) (source: Mercasa based on MAGRAMA data).

Croatia

The summary of consumer habits in Croatia is based on 3 studies conducted in the years 2007, 2012 and 2015. The period analysed in the 2012 study is 2007. No studies have been undertaken recurrently. All studies are drafted in the country's language. The studies are characterized as scientific with relevant information regarding consumer habits of FAP.

Fish consumption in Croatia is lower than the EU average (8-10 kg per capita vs. 24 kg per capita) and pelagic fish consumption is higher than other species, being it a specialisation of Croatian fishery. Nonetheless, also demersal fishes cover an important role in the Croatian seafood consumption.

Results from a research survey (conducted during the period February-June 2007 - "Preferencije u Ishrani Ribom u Republici Hrvatskoj Sa Posebnim Obziromna Ribu iz Uzgoja", Vlasta Franičević) revealed that 95% of the consumers surveyed prefer local rather than imported fish, 91% prefer fresh fish rather than frozen, 79% prefer wild to farmed fish, 44% prefer cleaned fish and 27% prefer fish fillet. The fish species most commonly eaten are the cheaper species such as sardines (31%) and hake (28%).

The majority of respondents buy fish "once a week" (39%). 21% of the respondents purchase fish 2-3 times a week, 25% 2-3 times a month and 2,4% buy fish on a daily basis. Almost 12% of the respondents admitted that they buy fish very rarely, and 0,4% do not buy it at all.

The most important factor driving consumption frequency in fresh fish is the price, while there is a lack of awareness regarding aquaculture products and their potential safety and quality characteristics. Consumers remain skeptical about quality of farmed fish and generally prefer wild fish. In general, the main reasons for poor sales are high prices, the general impoverishment of the Croatian population, accessibility (no fresh fish in regular supermarkets, no parking close to the fish shops and fishmongers).

Traditional fish shops and fishmongers are considered as the most preferable points of purchase for fishery products.

According to the same study, there is no relationship between social status, educational level and frequency of fish consumption.

Another study ("What determines fresh fish consumption in Croatia?", Tomić M, et al., 2015) has investigated on the relationship between attitudes, perceived behavioral control, subjective norm (*Subjective norm refers to the perceived social pressure to perform or not to perform the behavior*), moral obligation, involvements in health, availability, intention and consumption of fresh fish. Within this study, a consumer survey on a heterogeneous sample of 1151 Croatian fresh fish consumers has been conducted. The results show that attitudes are the strongest positive predictor of the intention to consume fresh fish (i.e. consumers that know that fish is healthy consume more fish). Other important predictors are perceived behavioral control, subjective norm, health involvement and moral obligation.

Tasty and healthy image of fish are two well appreciated characteristics in fish consumption. Although attitudes towards fresh fish are relatively positive, new information about the importance of regular fresh fish consumption may further contribute to more positive attitudes. In order to improve communication about the product and, in consequence, increase the demand for aquaculture products, the adoption of a marketing strategy at national level, aiming at rising awareness and promoting the consumption of aquaculture products, could reinforce the image of the sector as a whole (Croatian fish consumer preferences with specific focus on fish originated from aquaculture, 2012).

<u>Italy</u>

The summary of consumer habits in Italy is based on a mapping of 7 studies, all in Italian. Except one, the studies are from 2011 or later. Two studies have been undertaken recurrently. The studies are a mix of scientific and market reports, with comprehensive and relevant information about consumer habits regarding food in general and FAP. Some are more narrative, targeting only a few species or fewer product groups.

In 2010 in Italy, the domestic purchases of fresh seafood products have regarded quite a number of species. The first ten products (mussels, gilthead seabream, anchovies, seabass, clam, octopus, rainbow trout, salmon, cod, hake and squid) have covered 56% of the domestic demand and 46% of the total purchases of seafood products. Among the first five products, mussel, gilthead seabream, seabass and clam are mainly farmed while anchovy is the first wild species caught. Between 2005 and 2010, a positive consumption trend had been recorded for salmon, shrimps, gilthead seabream and seabass, thanks to imports and lower prices. On the contrary, Nile perch, squid and trout have shown a negative trend. According to the consumers’ perception, farmed products are sold in the large scale retail (LSR) and come from freshwater while wild caught products are sold in neighborhood markets and fishmongers and come from saltwater. In parallel, between 2005 and 2010, a demand increase for processed products has been registered in particular for dried, salted and smoked fish products.

The following reasons have mainly influenced the increased consumption of fish products: the healthy aspect of the fish products, the consistent availability of the fresh fish in the LSR and the “fashion” of sushi (and other varieties of “raw fish”). On the other side, the consumption of fish products has been negatively influenced by the presence of children, the high cost of the fish products and the “more accelerated” life style.

As regards fresh fish, between 2005 and 2010, the increasing importance of selling fish and seafood processed products through LSR has been registered as well as a parallel decrease of the fishmongers’ market share. However, in 2010, by observing domestic purchases of the first ten fresh fish products through the main distribution channels, it emerged that:

- → fishmongers are chosen for purchases of molluscs (mussels, clam, octopus and squid) and not farmed products (anchovy, cod and hake);
- → Large-scale retailers are preferred for farmed fish products.

This may be due to the accessibility of products and prices. As regards accessibility, LSR is the preferred sale channel for farmed products, also considering that LSR has direct linkages with farmers. On the opposite, fishmongers and traditional shops have lower accessibility and direct contacts with farmers. As regards prices, it may be assumed that LSR are more competitive than fishmongers.

In 2012, mainly due to the economic and financial crisis, the Italian fishery sector has shown deep difficulties: fish production and per capita consumption decreased by 5,7% and 5%, respectively, while fresh fish products decreased by 3%.

In Italy, compared to North and Centre, the consumption of fish products is highly important in the South, covering 40% of the total. In fact, in the South of Italy, the consumption of fish products is historically more traditional/common than in the North and fresh fish is particularly preferred, compared to the processed and frozen fish products. The Centre covered the 24% of the total domestic consumption of fish products while in the North (especially North-East) the consumption of the fish products is the lowest with respect to the Italian average.

With 40% of the total, the most used distribution channel is the large-scale retail, where processed products register significant level of purchases (above all, frozen products, prepared and preserved products and salted and smoked products).

In 2013, a slight improvement of the fish products trade deficit (compared to 2012) is registered thanks to the exports. However, the domestic consumption of fish products decreased by 2,6% mainly due to the negative trend of purchases of fresh fish products. Among these, the main fresh fish decreases were registered for anchovies, seabass, squid, mussel and clam. In the same period, trout and red mullet increased. In 2013, the consumption of frozen products was stable because of positive trend of processed fish products. On the contrary, the consumption of prepared and preserved fish products decreased caused also by the 2,2% fall of purchases of tuna. The consumption of dried, salted and smoked fish products (such as "baccalà") increased by 18,7%.

In 2014, the domestic consumption has started with negative trend. In fact, in the first two months of 2014, a decrease of 0,6% in volume and 5% in value of the purchases of fresh fish was recorded (octopus, gilthead seabream, cod, hake and seabass). The consumption of salmon has increased by 5,9% while trout was stable since 2013.

The principal barriers that hinder a more frequent consumption of fresh fish products are the following:

- A low confidence in the freshness of the fish product;
- A low confidence in the available label and information;
- A higher perishability;
- Little chances of making domestic stocks;
- Hygiene and health risks;
- A higher purchase price

The out-of-home consumption is preferred in special occasions (celebrations, anniversaries or summer holidays). The main important reasons for the out-of-home fish consumption are the following:

- Flavor (greediness);
- Variety of dishes and products;
- Digestibility and lightness;
- Conviviality;
- Refinement;
- Gratification;
- Healthy effects;

The importance of "pesce azzurro" (pelagic fish) as a more healthy and cheaper fish product alternative is well known, but eating "pesce azzurro" out of home is very unusual and infrequent because the out of home consumption is a matter of "gratification" and "refinement". In fact, the main distribution channel for eating fish products out of home remains restaurant. According to the consumers' perception, fresh fish products preferred by consumers are only those caught while their preferred origin is the domestic (national) one.

As regards recommendations, the need for new market strategies is stressed. The most important scope is an increased consumption of fish products because of their healthy aspects compared to meat. To achieve this objective, the following aspects should be pursued:

- Product innovations (fish hamburger, “fishballs” instead of meatballs);
- Valorization of other fish species/categories, for example valorization of “pesce azzurro”;
- Improvement of the information and labeling of the species sold;
- Shortening of the supply chain for selling fish products;
- Extension of opening times of supermarkets and fishmongers;
- Online selling of fish products, also already cooked and prepared;
- Packaging with more appeal;
- Fish street food (not only as fish & chips).

<u>Cyprus</u>

No relevant studies have been mapped for this market.

<u>Malta</u>

No relevant studies have been mapped for this market.

4 Appendix 1: List of surveys on consumer habits

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
IT-001	Consumi agro-alimentari in Italia e nuove tecnologie	ISMEA	Italian	2007	38	Italy
IT-002	Il pesce a tavola: percezioni e stili di consumo degli italiani	ISMEA	Italian	2011	25	Italy
IT-003	Tendenze ittico: trimestrale ISMEA di analisi e previsioni	ISMEA	Italian	2014	16	Italy
IT-004	Il consumo extradomestico di prodotti ittici	ISMEA	Italian	2013	19	Italy
IT-005	Il comportamento dei consumatori infrequenti di pesce	ISMEA	Italian	2014	39	Italy
IT-006	Il pesce azzurro nella mente del consumatore. Analisi quali-quantitativa del prodotto	Eugenio Demartini (PHD thesis)	Italian	2011	129	Italy
IT–007	Check up 2013 – il settore ittico in Italia	ISMEA	Italian	2013	129	Italy
MT-001	The dietary habits of Maltese Università students	Carmel Cefai and Liberato Camilleri	English	2011	3	Malta
MT–002	Agriculture and fisheries 2013	NSO	English	2015	139	Malta
PT-001	Fish and seafood in Portugal – a review of its availability and consumption. Report for the IJUP 2012-2013 Project (PP_IJUP2011_235)_impac	A. Teixeira, S. Rodrigues, A. Cavadas, B. Neto	English	2013	41	Portugal

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	t evaluation of the consumption of fish and seafood in Portugal					
PT-002	Portugal - overseas market introduction service sea fish industry authority	Paulo Coimbra and Cláudia Luís. UK Trade & Investment	English	2012	24	Portugal
PT-003	Survey into the seafood consumption preferences and patterns into the Portuguese population. Gender and regional variability.	C. Cardoso, H. Lourenço, S. Costa, S. Gonçalves, M. L. Nunes. Unit of upgrading of Fishery and Aquaculture Products (U-VPPA), Portuguese institute for the sea and atmosphere (IPMA)_2013	English	2013	12	Portugal
PT-004	The seafood market in Portugal: driving forces and consequences	Cheila Almeida, Vanja Karadzic and Sofia Vaz	English	2015	7	Portugal
EL–001	Consumers' attitudes towards fisheries products	Eleni Kaimakoudi, Konstantinos Polymeros, Maria-Georgia Schinaraki, Christos Batzios	English	2013	6	Greece
EL–002	Investigation of the factors affecting farmed fish consumption	Eleni Kaimakoudi, Konstantinos Polymeros, Christos Batzios, Papamichalopoulos A.	English	2014	6	Greece
HR-001	Croatian fish consumer preferences with specific focus on fish originated from aquaculture. Ph.D. thesis	Vlasta Franičević	Croatian	2012	173	Croatia
HR-002	Sociological studies on the dietary preferences of fish and other fishery products of the Croatian population	Ognjen Čaldarović	Croatian	2007	148	Croatia
HR-003	What determines fresh fish consumption in Croatia?	Marina Tomić, Daniel Matulić, Margareta Jelić	English	2015	22	Croatia
SI - 001	STROKOVNO SPREMLJANJE PREHRANE S SVETOVANJEM V	Matej Gregorič, Katja Ceglar, Rok Poličnik, Branka Đukić	Slovenian	2014	34	Slovenia

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	VZGOJNO-IZOBRAŽEVALNIH ZAVODIH V ŠOLSKEM LETU 2012/13					
SI - 002	Kakovost rib na slovenskem trgu in analiza možnosti prilagajanja ponudbe rib povpraševanju z namenom zagotavljanja prehranske varnosti prebivalstva in zviševanja konkurenčnosti ribiškega sektorja	Stibilj, Pohar	Slovenian	2014	91	Slovenia
SI -003	Raziskava med splošno javnostjo ter ribiškim sektorjem o porabi rib in o kampanji »Rad jem ribe«	Zveza potrošnikov Slovenije	Slovenian	October 2012	67	Slovenia
FR-001	L'image de l'huître auprès des consommateurs et des acheteurs professionnels	Marketing Seafood & Cospirit Mediatrack for FranceAgriMer	FR	2013	12	FR
FR-002	Etude sur l'image de la moule auprès des consommateurs et des professionnels de la filière	Marketing Seafood & Cospirit Mediatrack for FranceAgriMer	FR	2014	12	FR
FR-003	Les effets de la crise sur les comportements d'achats des ménages en produits animaux	BIPE for FranceAgriMer	FR	2015	16	FR
FR-004	Les unités de vente consommateur dans les filières carnées et aquatiques	ABSOconseil and Segments Études consommateurs for FranceAgriMer	FR	2012	8	FR
FR-005	Le marché des produits aquatiques décongelés en France	ABSOconseil and Cabinet Segments for FranceAgriMer	FR	2013	16	FR
FR-006	Les unités de vente consommateur dans les	ABSOconseil and Segments Études consommateurs for FranceAgriMer	FR	2012	8	FR

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	filières carnées et aquatiques					
FR-007	Poisson ou viande, est-ce seulement une question de prix ?	FranceAgriMer	FR	2011	12	FR
FR-008	L'avenir de la poissonnerie en France	Via Aqua and Protei+ for FranceAgriMer	FR	2011	18	FR
FR-009	La consommation des produits de la mer frais	AgroCampusOuest, COGEPECHE	FR	20154	24	FR
FR-010	MOTIVATIONS AND NEEDS OF CONSUMERS OF FRESH SEAFOOD PRODUCTS IN FRANCE: NEW OPPORTUNITIES AND MARKETING STRATEGIES	Lucile Mesnildrey, Marie Lesueur, Stéphane Gouin,	EN	2010	9	FR
FR-011	Analyse des attentes des consommateurs de produits de la mer frais	MESNILDREY Lucile, HADOUNI Laila, QUINTON Claire, FOURNIS Marion, LESUEUR Marie, GOUIN Stéphane	FR	2009	66	FR
FR-012	Etude des attentes des consommateurs de produits de la mer frais et de leur comportement selon les circuits de distribution - N°1 Focus Group	Fournis M., Mesnildrey L., Lesueur M., Gouin S.	FR	2009	30	FR
FR-013	Etude des attentes des consommateurs de produits de la mer frais et de leur comportement selon les circuits de distribution - N°2 Analyse conjointe - Trade Off	Guyader V., Mesnildrey L., Lesueur M., Gouin S.	FR	2009	32	FR
FR-014	Etude des attentes des consommateurs de produits de la mer frais et de leur comportement selon les circuits de	Hadouni L., Mesnildrey L., Lesueur M., Gouin S.	FR	2009	38	FR

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	distribution -N°3 Analyse des chaînes moyens-fins					
FR-015	Etude des attentes des consommateurs de produits de la mer frais et de leur comportement selon les circuits de distribution - N°4 Analyse des dissonances cognitives	Quinton C., Mesnildrey L., Lesueur M., Gouin S.	FR	2009	36	FR
FR-016	Etude des attentes des consommateurs de produits de la mer frais et de leur comportement selon les circuits de distribution - N°5 Analyse des opinions d' experts	Mesnildrey L., Lesueur M., Gouin S. (	FR	2009	38	FR
FR-017	A Comparison of French and English Consumers' Expectations Regarding Labelled Cod Fillet Products	Themistoklis Altintzoglou & Morten Heide	EN	2014	12	FR, UK
FR-018	Comportements, attentes et besoins des consommateurs vis-à-vis des produits de la mer frais: le point de vue des experts	Mesnildrey Lucile	FR	2009	60	FR
FR-019	French consumer profiles' reactions to information on cod fillet products	ltintzoglou, Themistoklis; Heide, Morten; Carlehög, Mats	EN	2014	19	FR
BE-001	Communicating Risks and Benefits from Fish Consumption: Impact on Belgian Consumers Perception and Intention to Eat Fish	Wim Verbeke, Filiep Vanhonacker, Lynn J. Frewer, Isabelle Sioen, Stefaan De Henauw and John Van Camp	EN	2008	18	BE
BE-002	Association of health involvement and attitudes	Themistoklis Altintzoglou, Filiep Vanhonacker, Wim Verbeke, Joop Luten	EN	2009	14	BE, NO, ES

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	towards eating fish on farmed and wild fish consumption in Belgium, Norway and Spain					
BE-003	Motives, barriers and quality evaluation in fish consumption situations : Exploring and comparing heavy and light users in Spain and Belgium	Karen Brunsø, Wim Verbeke, Svein Ottar Olsen, Lisbeth Fruensgaard Jeppesen	EN	2009	18	BE, ES
BE-004	Fish Market Segmentation Based on Consumers' Motives, Barriers and Risk Perception in Belgium	F. VANHONACKER, Z. PIENIAK, and W. VERBEKE	EN	2010	20	BE
BE-005	Does fish origin matter to European consumers? Insights from a consumer survey in Belgium, Norway and Spain	Filiep Vanhonacker, mistoklis Altintzoglou, Joop Luten, Wim Verbeke	EN	2011	16	BE, NO, ES
BE-006	Consumer Interest and Marketing Potential of Information on Fish Labels	Z. PIENIAK, and W. VERBEKE	EN	2008	3	BE, DK, NL, PL, ES
EU-001	Consumer knowledge and use of information about fish and aquaculture	Zuzanna Pieniak, Filiep Vanhonacker, Wim Verbeke	EN	2013	7	CZ, DE, GR, IT, PT, RO, SE, UK
BE-007	European consumer perceptions and barriers for fresh, frozen, preserved and ready-meal fish products	Filiep Vanhonacker, Zuzanna Pieniak and Wim Verbeke	EN	2013	19	BE, IE, IT, PT, ES
EU-002	European consumer image of farmed fish, wild fish, seabass and seabream	Filiep Vanhonacker, Zuzanna Pieniak, Wim Verbeke	EN	2013	18	EU
BE-008	The Image of Fish from	Themistoklis Altintzoglou , Wim Verbeke,	EN	2015	19	BE, NO, ES

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	Aquaculture Among Europeans: Impact of Exposure to Balanced Information	Filiep Vanhonacker Joop Luten				
BE-009	Consumers' health risk–benefit perception of seafood and attitude toward the marine environment: Insights from five European countries	Silke Jacobs, Isabelle Sioen, Zuzanna Pieniak, Stefaan De Henauw, Ana Luisa Maulvault, Marieke Reuver, Gabriella Fait, German Cano-Sancho, Wim Verbeke	EN	2015	10	BE, IE, IT, PT, ES
DE-001	Seafood Study 2014. Insights and outlook : how the Germans eat fish	Norwegian Seafood Council	DE/EN	2015	44	DE
DE-002	Der Einfluss der soziodemografischen Entwicklung auf den Fischkonsum	Helmut HÜBSCH GfK Consumer Panels	DE	2013		DE
AT-001	Ernährungsbericht 2012	IfEw-Universität Wien	DE	1998-2003-2008-2012 (every 4th/5th year)	424	AT
ES-001	Analisis de las preferencias de un nuevo product de conveniencia a base de pescado	Domingo Calvo Dopico, Alina Tudoran, Svein Ottar Olsein	ES	2010	38	ES
ES-002	El consumo y la compra de pescado en la Comunidad de Madrid	Communidad de Madrid	ES	2010	16	ES
ES-003	Estudio de Mercado Observatorio del Consumo y la Distribución Alimentaria - Monográfico Productos de Acuicultura	MAGRAMA	ES	2010	53	ES
ES-004	Caracterizacion de la calidad del pescado de	MAGRAMA / JACUMAR	ES	2013	216	ES

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	crianza					
ES-005	Estudio sobre habitos de compra y consumo alimentario	CEACCU / MAGRAMA	ES	2014	32	ES
ES-006	Consumo de productos pesqueros Evolución de la demanda y cambios en los hábitos de compra	VÍCTOR J. MARTÍN CERDEÑO Universidad Complutense de Madrid	ES	2013	12	ES
ES-007	Distribución y consumo de productos Pesqueros - Evolución de la demanda y cambios en la cadena comercial	Víctor J. Martín Cerdeño. Universidad Complutense de Madrid.	ES	2015	11	ES
ES-008	Consumo de pescados y mariscos - Diferencias sociales y territoriales	Víctor J. Martín Cerdeño. Universidad Complutense de Madrid.	ES	2012	16	ES
IE-001	How is the Irish Fish Market Performing	Kantar Worldpanel	English	2015	82	IE
IE-002	Mismatch between fish landings and market trends: A western European case study	Dana D. Miller, Maurice Clarke, Stefano Mariani	English	2012	12	IE
IE-003	Irish Seafood Industry 2012	BIM/Irish Sea fisheries Board	English	2012	4	IE
IE-004	Irish Food 2-2012	Irish Food Board	English	2012		IE
IE-005	Future of the Global Seafood Industry	John Ballantyne, The futures company	English	2014	124	IE
IE-006	Irish Retail Sefood Market Performance	BIM/Irish Sea fisheries Board	English	2015	86	IE
IE-007	Irish Seafood Sales – Species Breakdown	BIM/Irish Sea fisheries Board	English	2015	8	IE
IE-008	Irish Fresh report	The Nielsen Company	English	2014	14	IE
UK-001	Family Food 2013,	Isabella Hayes, Julie Rumsey, David Lee, Andrew Scaife	English	2013	77	UK

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	Department of Environment, food and Rural Affairs OBS! Also market data					
UK-002	Investigation Purchasing & Consumption of Fish – only Project Debrief presentation available	Richard Watson, Seafish	English	2015	25	UK
UK-003 Report fee: EUR 3 196 (1 user license)	The UK Fish and Seafood Market: What Consumers Eat and Why? – report not available	Sarah Smith , Canadean Ltd Market Research Reports	English	2013	89	UK
UK-004	Can Consumers Understand Sustainability through Seafood Eco-Labels? A U.S. and UK Case Study	Alexis Gutierrez * and Thomas F. Thornton	English	2014	23	UK
UK-005	Attitudes of UK Consumers to Farmed Seafood – report not available, only a summary	Emiko Phillips and Lyn Newton	English	2013	NA	UK
UK-006	Consumer empowerment survey report (This research examines how consumers go about making major purchases or choosing a utility provider. It also looks into the motivations for different types of customer behaviour.)	Bridget Williams, Claire Bhaumik, Anna Silk, GfK NOP Social Research	English	2015	95	UK
UK-007	Yellowfin Tuna Global and UK Supply Chain Analysis	Angus Garrett, Seafish Economics Adam Brown, Seafish Economics	English	2009	40	UK

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
UK-008	Outlook for European brown crab: understanding brown crab production and consumption in the UK, Republic of Ireland, France, Spain and Portugal	A.Garrett et al (Seafish, UK)	English	2015	38	UK, IE, FR, ES, PT
UK-009	SR667: ASSESSMENT OF THE BENEFITS OF MSC CERTIFICATION TO A MAJOR UK FISHERY AND ITS SUPPLY CHAIN.	Poseidon Aquatic Resource Management Ltd.	English	2014	40	UK
UK-010	FS**83_10_13** Headline Findings Pan European Crab Omnimas	Caroline Hughes	English	2013	18	UK, IE, PT, ES, GE, FR, IT
UK-011	FS84_01_14 Headline Findings Pan European Crab Omnimas	Caroline Hughes & Andy Fraser	English	2014	17	UK, IT, FR, ES
UK-012	Retail Overview Q1 2012 – lite relevans, mer aktuell som mraketdata?	R. Watson	English	2012	38	UK
UK-013	Seafood industry Fact Sheet – seafood consumption	Richard Watson, Seafish	English	2015	16	UK
UK-014	CBI Product Factsheet; Pangasius in the United Kingdom	Ministry of Foreign Affairs LEI Wageningen UR, Siegfried Bank	English	2014	13	UK
UK-015	Consumer Trends	Jonathan Banks	English	2014	30	UK
UK-016	Consumer Knowledge and use of information about fish and aquaculture	Zuzanna Pieniak, Filiep Vanhonacker,Wim Verbeke	English	2013		UK, GE, SE, IT, GR, RO, PT, CZ
UK-017	Markedsforskning; Sushi og Sashimi	Agnete Ryeng, Nofima	Norsk	2011	51	UK, FR, SE, GE, USA, CH, JP, NO
UK-018	Seafish Consumption	Richard Watson, Seafish	English	2015	25	UK

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	June 2015					
UK-019	Chilled vs Frozen research	Brahm Insight	English	2010	18	UK
UK-020	Our Future with Fish – investigation customer attitudes, behaviours and motivations	The Future Foundation	English	2014	27	UK
FI-001	LAKSENS POSISJON HOS FORBRUKER	NSEC Asbjørn Warvik Rørtveit	Norwegian	2012	22	Finland
FI-002	Kalatalousbarometri 2012 yritysten taloudelliset näkymät	Asmo Honkanen, Anssi Ahvonen, Jyrki Holopainen	Finnish	2012		Finland
FI-003	Seafood Consumer Insight (SCI) totaltall for Finland Not publically available	Norwegian Seafood Export Council	Norwegian	2012		Finland
FI-004	Product Factsheet: Frozen Crustaceans in Finland	CBI, Ministry of Foreign Affairs	English	2013	6	Finland
HU-001	CONSUMER CHARACTERISTICS IN THE INSTITUTIONAL CATERING ACCORDING TO PRIMARY RESEARCH	Mónika Fodor Dr.Ph.D. College Senior Lecturer, Budapest Business School, Faculty of International Management and Business Ágnes Csiszárik-Kocsir Dr.Ph.D. Associate Professor, Óbuda University – Keleti Faculty of Business and Management András Medve Dr.Ph.D. Professor, Óbuda University – Keleti Faculty of Business and Management	English (abstract)	2012	8	Hungary
HU-002	ROMANIAN-HUNGARIAN CANNED FOOD BUYING BEHAVIOR	GIDNI Ghassan Shakhshir, PhD Candidate, ”Babeş-Bolyai” University of Cluj-Napoca	English (abstract)	2014	8	Hungary/Romania
NE-001	Food Quality and Preference	ELSEVIER Kolbrún Sveinsdóttir a,e,*, Emilía Martinsdóttir a, Ditte Green-Petersen b,	English	2008	6-12	Netherlands (DK,IR)

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
		Grethe Hyldig b, Rian Schelvis c, Conor Delahunty d				
NE-002	VIS 't uit Effectmeting Campagne Duurzame Vis	GfK, Netherlands Visbureau Marcel Temminghoff & Anne van Vlerken	Dutch	2014	43-88	Netherlands
NE-003	Jaarpresentatie Nederlands Visbureau – GfK april 2014	GfK, Netherlands Visbureau Bas van Eekelen, Yvonne van Bakel, Gerben van Helden, Rene Bekkers	Dutch	2013	1-44	Netherlands
NE-004	Consumentenonderzoek 2014	Deloitte	Dutch	2014	20,21, 29, 38, 40, 48, 49, 54,55, 64	Netherlands
NE-005	Eten van Waarde Peiling Consument en Voedsel Eating Value; Gauging Consumer Food Perceptions and Behaviours	J. Bartels M.C. Onwezen A. Ronteltap A.R.H. Fischer A.P.W. Kole R.J.F.M. van Veggel M.J.G. Meeusen (red.)	Dutch	2009		Netherlands
NE-006	PATHWAYS project Exploring transition pathways to sustainable, low carbon societies Grant Agreement number 603942	Joyce Zwartkruis, Henk Westhoek, Marcel Kok PBL Netherlands Environmental Assessment Agency	English	2015	54	Netherlands
SE-001	Miljömärkningens betydelse för fiskkonsumtion	Sveriges lantbruksuniversitet Swedish University of Agricultural Science Fakulteten för naturresurser och	Swedish	2015	22, 29 – 44	Sweden

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	– en intervjustudie The consequence of eco-labelling on fish consumption – an interview study	jordbruksvetenskap Institutionen för vatten och miljö Ida Jansson Matsson				
SE-002	Torsk I det svenske og tyske dagligvaremarkedet Forprosjekt: Tilstedeværelsen av tinte torskeprodukter i etablerte kanaler for fersk fisk Rapport 11/2011	NOFIMA Finn-Arne Egeness, Jens Østli, Bjørn Inge Bendiksen	Norwegian	2011	3,-12	Sweden (Germany)
SE-003	Focus on the Swedish market Fish and Seafood	Swedish Chambers, Fox Research AB	English	2011	4, 5, 15	Sweden
SE-004	European consumer perceptions and barriers for fresh, frozen, preserved and ready-meal fish products	Filiep Vanhonacker, Zuzanna Pieniak, Wim Verbeke Department of Agricultural Economics, Ghent University, Ghent, Belgium	English	2013	511, 519-520	Sweden (and Europe)
SE-005	Markedsrapport torskefisk Sverige The report is not publically availble	Norwegian Seafood Export Council	Norwegian	2015		Sweden
SE-006	Sjømat I Sverige The report is not publically availble	Norwegian Seafood Export Council	Norwegian	2015		Sweden
SE-007	Livsmedelskonsumtionen i siffror – Hur har konsumtionen utvecklats de senaste	Helena Lööv, Lars M Widell, Olof Sköld, Jordbruksverket	Swedish	2015	84	Sweden

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	femtio åren och varför?					
SE-008	Risk and Benefit Assessment of Herring and Salmonid Fish from the Baltic Sea Area	Anders Glynn, Salomon Sand and Wulf Becker	English translation of a report published in Swedish	2013 (2011)	124	Sweden
SE-009	Livsmedelskonsumtion och näringsinnehåll	Monica Eidstedt, Emma Wixe, Johan Holmer Statens Jordbruksverk	Swedish	2014	66	Sweden
LV-001	Sustainability of salmon production and perspectives in the market	Ingūna Gulbe, Ilona Osīte	Latvian	August, 2015	48	Latvia
LV-002	Overseas Market Introduction Service on overview of seafood sector in the Baltics. Sea Fish Industry Authority. OMIS BLT0126	Laura Leščinskienė. Rolands Kumpins. Maarika Poldes	English	January 20th, 2014	37	Latvia
LV-003	Economic analysis of the implementation of the 2nd priority axis of the EFF 2007 – 2013 with regard to aquaculture and research of potential markets	Latvian State Institute of Agrarian Economics	Latvian	December, 2013	147	Latvia
LV-004	Comparative analysis of the competitiveness indicators of the Latvian food industry	Latvian University of Agriculture / Funded by the European Agricultural Fund	Latvian	October, 2013	262	Latvia

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
LV-005	Comparative analysis of the competitiveness indicators of the Latvian fish processing sector	Latvian University of Agriculture / Funded by the European Fisheries Fund	Latvian	October, 2013	124	Latvia
LV-006	Latvian household's demand elasticity for the main food groups	Edgars Brēķis, Aleksejs Nipers	English	May 9 – 11, 2013	9	Latvia
LV-007	Quality Competitiveness of Latvia's Food Industry in the Fish Products Group	J. Priede	English	May, 2013	5	Latvia
LV-008	Foodweb Consumer Awareness Study report II: Estonia, Finland, Latvia	Triin Esko, Marja-Liisa Vieraankivi, Hanna Aho, Mari Kovero, Raimonds Ernšteins, Sintija Kuršinska, Diāna Šulga, Virpi Vorne, Yrjö Virtanen, Sirppa Kurppa, Valdis Antons, Diāna Kronberga, Päivi Munne	English	November, 2012	124	Latvia
LV-009	The LATVIA Food Consumption Survey of adults (19-64), 2012 - 2013	Institute of Food Safety, Animal Health and Environment - "BIOR" Food and Veterinary Service Assessment and Registration Department	Latvian	2012	16	Latvia
LV-010	The National Food Consumption Survey of LATVIA, 2007 – 2009	National Diagnostic Centre, Food Centre of the Food and Veterinary Service R. JOFFE, G. OZOLINŠ, D. ŠANTARE, V. BARTKEVICS, L. MIKE, I. BRIŠKA	Latvian	2009	115	Latvia
LV-011	Trends in food expenditure, consumption and nutrition in Latvia	Dina Popluga, Ligita Melece	English	2009	10	Latvia
LV-012	Overall research on competitiveness conditions and situation in non-specialised retail shops	Ērika Pančenko, Danuta Jasjko, Tatjana Ivanova	Latvian	November, 2008	119	Latvia
LV-013	Food consumption study, analysis and determination of the future perspectives in the territory of the Republic of Latvia	Latvian State Institute of Agrarian Economics in collaboration with "Euro Data" Ltd.	Latvian	2007	59	Latvia

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
EE-001	Fish and fish products market in Estonia	Estonian Institute of Economic Research	Estonia	2014	195	Estonia
EE-002	Fish and fish products market in Estonia	Estonian Institute of Economic Research	Estonia	2011	248	Estonia
EE-003	Fish and fish products market in Estonia	Estonian Institute of Economic Research	Estonia	2003	119	Estonia
EE-004	Consumers’ buying preferences of fish and fish products in packaging in small retail sector Mapping of the sector training needs	Estonian Marine Institute, University of Tartu	Estonia	2011	13	Estonia
EE-005	Study of fish and fish products consumption raising options in Estonia (final study report)	Agentuur Kämp OÜ	Estonia	2011	81	Estonia
EE-006	Nutrition survey of coastal fishermen	Emor AS, Gerda Möller	Estonia	2010	58	Estonia
EE-007	Food consumption trends in Estonia	Tagli Pitsi, National Institute for Health Development Merle Paats, Piret Tikva, Statistics Estonia	Estonia	2010	15	Estonia
EE-008	Overview of fish products’ market trends	Competence Center of Food and Fermentation Technologies	Estonia	2009	16	Estonia
EE-009	Production and consumption of canned fish and preserves	Competence Center of Food and Fermentation Technologies	Estonia	2008	12	Estonia
EE-010	Consumption of fish and fish products in different parts of the World and in the key countries.	Competence Center of Food and Fermentation Technologies	Estonia	2008	13	Estonia
EE-011	FOODWEB Consumer Awareness Study, Report II, Estonia, Finland, Latvia	Triin Esko & Marja-Liisa Vieraankivi, Hanna Aho, Mari Kovero, Raimonds Ernsteins, Sintija Kursinska, Diana Sulga, Virpi Vorne, Yrjo Virtanen, Sirppa Kurppa, Valdis Antons, Diana Kronberga, Paivi Munne	English	2012	115	Estonia
EE-012	Dietary habits of adolescents in Estonia: equity and social	By Liis Kambek, Tagli Pitsi, Marge Eha, Natalia Gluskova, National institute for health	English	2013	45	Estonia

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	determinants	development, WHO European office for investment for health and development.				
EE-013	Baltic States export guide	The UK Trade & Investment Laura Lescinskiene, Rolands Kumpins, Maarika Poldes	English	2014	37	Estonia
LT-001	Diet, nutrition and lifestyle habits survey of the adult population in Lithuania	Albertas Barzda, Roma Bartkevičūtė.	Lithuanian	2007	9	Lithuania
LT-002	Fish and fish product consumption development in Lithuania	Alina Sandu; Algirdas Miškinis	Lithuanian	2010	64	Lithuania
LT-003	Survey of fish and fish products users 2011	The Society for Sustainable Development	Lithuanian	2012	47	Lithuania
LT-004	Closed recirculating systems production market	International Centre of Aquaculture	Lithuanian	2010	259	Lithuania
LT-005	Eating habits of Lithuanian population in 2013	Valerij Dobrovolskij Rimantas Stukas	Lithuanian	2014	152	Lithuania
LT-006	Consumption of the fish and fish products	Norstat LT, JSC	Lithuanian	2013	20	Lithuania
LT-007	Baltic States Export Guide	Laura Lescinskiene, Rolands Kumpins, Maarika Poldes, The UK Trade & Investment	English	2014	37	Lithuania
RO-001	Romanian Fisheries Market Study	Gea Strategy&Consulting, Conceta Silva Consulting Company, Agrotec	Romanian	2015	422	RO
RO-002	Buying and consumption habits for fish and fisheries products in Romania	TNS- CSOP	Romanian	2012	31	RO
RO-003	Consumption patterns for fish and fisheries products in Romania	Operations Research	Romanian	2013	165	RO

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
RO-004	Final Market Study for Measuring the Effects of Communication Campaign and of the change of buying and consumption pattern	Bacău County Council	Romanian	2013	53	RO/N-E
RO-005	Consuming and buying habits for fish and fisheries products	SC MATBEN Concept SRL	Romanian	2015	24	RO
RO-006	Market Study regarding fish consumption, production and distribution in Lower Prut River Meadow – Lower Danube	Tourism and Ecology Association PRO ECO-TUR	Romanian	2015	129	RO, S-E
PL-001	"Seafood Study 2015. Opinie i perspektywy: konsumpcja ryb wśród polaków" / "Seafood Study 2015. Consumption of fish in Poland: overview and perspectives".	Kristin Pettersen	Polish	2015	58	Poland
PL-002	"Rynek detaliczny produktów rybnych w Polsce. Wyniki badania krajowego rynku rybnego w 2011 r." "The retail market of fish products in Poland. The results of a national study of the fish market in 2011"	Tomasz Kulikowski	Polish	2012	19	Poland
PL-003	"Raport Sklepy Rybne w Polsce. Raport o wielkości i strukturze sprzedaży w	Tomasz Kulikowski	Polish	2011	10	Poland

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	sklepach rybnych. Zrealizowano w ramach PO RYBY 2007-2013”. “Fish shops in Poland. Report on the size and structure of sales in fish shops. Implemented under OP FISH 2007-2013”.					
PL-004	“Preferencje polskich konsumentów w zakresie nabywania ryb. Raport rynkowy opisujący deklaratywne preferencje polskich konsumentów w odniesieniu do zakupów ryb i produktów rybnych w handlu detalicznym i HoReCa”. Polish consumer preferences in fish purchasing. Market report describing major preferences of Polish consumers regarding fish and fish products purchasing through retail and HoReCa chains.	Tomasz Kulikowski	Polish	2011	25	Poland
PL-005	OCENA ZACHOWAŃ ŻYWIENIOWYCH WYBRANEJ GRUPY KONSUMENTÓW NA RYNKU RYB I PRZETWORÓW RYBNYCH THE ASSESSMENT OF THE DIETARY BEHAVIOUR OF A	Anita Kukułowicz	Polish	2014	98	Poland

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
	SELECTED GROUP OF CONSUMERS ON THE MARKET OF FISH AND FISH PRODUCTS					
PL-006	Rynek ryb – stan I perspektywy Fish market – state of play and perspectives	Institute for Agriculture and Food Economics-National Research Institute	Polish	2014	40	Poland
PL-007	Rynek ryb – stan I perspektywy Fish market – state of play and perspectives	Institute for Agriculture and Food Economics - National Research Institute	Polish	2014	40	Poland
PL-008	Rynek ryb – stan I perspektywy Fish market – state of play and perspectives	Institute for Agriculture and Food Economics - National Research Institute	Polish	2013	40	Poland
PL-009	Agriculture and Food Economy in Poland	Ministry of Agriculture and Rural Development	English	2010	76	Poland
PL-010	Overseas Market Introduction Service on seafood sector in Poland for Sea Fish Industry Authority	Ewa van Veenendaal-Rawicz	English	2013	32	Poland
BG-001	Situational-Perspective Analysis of Fish and Other Aquaculture Products in 2014 and forecast for 2015	Ministry of Agriculture and Food of Republic of Bulgaria	Bulgarian	2015	19	Bulgaria

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
BG-002	Situational-Perspective Analysis of Fish and Other Aquaculture Products in 2013 and forecast for 2014	Ministry of Agriculture and Food of Republic of Bulgaria	Bulgarian	2014	19	Bulgaria
BG-003	Situational-Perspective Analysis of Fish and Other Aquaculture Products in 2012 and forecast for 2013	Ministry of Agriculture and Food of Republic of Bulgaria	Bulgarian	2013	23	Bulgaria
BG-004	Situational-Perspective Analysis of Fish and Other Aquaculture Products in 2011 and forecast for 2012	Ministry of Agriculture and Food of Republic of Bulgaria	Bulgarian	2012	22	Bulgaria
BG-005	Yearly household consumption of fish and other aquaculture products and their production in Bulgaria in 2013	National Statistical Institute of Bulgaria	Bulgarian	2014	16	Bulgaria
BG-006	Household consumption of fish in Bulgaria in the second quarter of 2013	National Statistical Institute of Bulgaria	Bulgarian	2013	14	Bulgaria
BG-007	Household consumption of fish in Bulgaria in the first quarter of 2013	National Statistical Institute of Bulgaria	Bulgarian	2013	13	Bulgaria
BG-008	Yearly household consumption of fish and other aquaculture products and their production in Bulgaria in 2012	National Statistical Institute of Bulgaria	Bulgarian	2012	22	Bulgaria

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
BG-009	Fish and seafood market brief – Bulgaria	USDA Foreign Agricultural Service	English	2015	15	Bulgaria
BG-010	Dynamics and Tendencies of Freshwater Fish Production in Bulgaria	L. Hadjinikolova - Institute of Fisheries and Aquaculture, Varna, Branch Plovdiv, BG- 4003 Plovdiv, Bulgaria; At. Rusenov – National Centre for Agrarian Sciences, BG – 1373 Sofia, Bulgaria	English	2006	7	Bulgaria
BG-011	Status and Development Tendencies of Freshwater Aquaculture production in Bulgaria	L. Hadjinikolova, T. Hubenova and A. Zaikov, Institute of Fisheries and Aquaculture, BG-4003 Plovdiv, Bulgaria	English	2010	8	Bulgaria
CZ-001	Market Brief-Product, Czech Republic: Seafood	Foreign Agricultural Service, USDA	English	1999	19	Czech Republic
CZ-002	Fresh water fish in public catering - Bachelor thesis, Faculty of Technology, University of Tomas Bata in Zlin; (Sladkovodní ryby ve veřejném stravování)	Zdenka Jarosova	Czech	2006	41	Czech Republic
CZ-003	Processing and market with salmon in Czech Republic - Master thesis – Faculty of Agriculture, University of South Bohemia in Ceske Budejovice	David Kolousek	Czech	2009	102	Czech Republic

PROJECT	TITLE	AUTHOR	LANGUAGE	YEAR	PAGES	MEMBER STATE/REGION
CZ-004	Annual report, Ministry of Agriculture, Czech Republic – Situation and Outlook Report – Fish (Situační a výhledová zpráva ryby)	Ministry of Agriculture	Czech	2014	36	Czech Republic
CZ-005	The economic value of foreign trade with fish in the Czech Republic (Journal – Rybářství (this journal belongs to Association of Czech fish farmers – Rybářské sdružení České republiky), volume 20, December 2014)	Regenda, J., Matouskova, M.	Czech	2014	6	Czech Republic
CZ-006	Quality and gastronomy of fish and fish products (Kvalita a gastronomie ryb a rybích výrobků) - Book, Faculty of Fisheries and Protection of Waters, University of South Bohemia in Ceske Budejovice	Sampels, S., Levy, E., Mraz, J., Vejsada, P., Zajic, T.	Czech	2014	247	Czech Republic
DK-001	"Campaign effect measurement March 2012 - Fish twice a week"	"Fish twice a week" (yougov.com) http://www.2gangeomugen.dk/	Danish	2012	66	Denmark
DK-002	"Retail market for fish in Denmark after nine years campaign- Twice a week"	Twice a week – Anne C. Bech – Consumer Insight 2015	Danish	2015	19	Denmark
DK-003	"Seafood Export Profiles – Denmark sector report"	Sea Fish Industry Authority Joanne Ganthier	English	2014	25	Denmark

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DK-004	Denmark Channel Habits, Behaviour and Attitudes Snapshot 2015.	The Nielsen company	English	2015	Na	Denmark (for sale only €440.00 excl. VAT)

"The EU Consumer Habits – Annex 1: Mapping and analysis of existing studies on consumer habits" is published by the Directorate-General for Maritime Affairs and Fisheries of the European Commission.

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