

## **ESTIMATING CONSUMPTION OF SHRIMP AND WHITEFISH IN EUROPEAN MARKETS: FINDING NEW MARKETS FOR VIETNAMESE SEAFOOD**

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### **ABSTRACT**

This project is a field study that deals with seafood consumption in Europe, focused on shrimp and whitefish products. This includes seafood consumption, seafood trade, market tendencies and market analysis. The project has identified opportunities and potential markets in Europe to support Vietnamese seafood products. The target markets, potential markets and competitors were also identified. The shrimp and tra, basa catfish markets were analysed. The project also includes a SWOT analysis for the Vietnamese seafood industry and gives suggestions for exporters and policy makers in the Vietnamese fisheries sector.

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## 1 INTRODUCTION

Fisheries are one of the key sectors in the Vietnamese economy. The fisheries sector is in third position amongst exporters of Vietnamese products. Most Vietnamese seafood products are exported to Japan, United States, and Asian markets. The heavy dependent on a few markets such as Japan and US has caused many disadvantages for Vietnamese exporters. Vietnamese seafood exporters need to diversify their markets as well as diversify product category.

The aim of this project is to single out opportunities and potential markets in Europe to support the entrance of Vietnamese seafood products. Methodology for this project will be explained in chapter 2. Vietnamese seafood industry is introduced in chapter 3. Chapter 4 will analyse and evaluate fish and fish products in European countries as well as their fish consumption. Chapter 5 and chapter 6 focus on shrimp and whitefish markets analysing and evaluating European production and trade in shrimp and whitefish products. Then the chapters will show the potential markets for Vietnamese export of these products. Based on the results of chapters 3 through 6 strengths, weaknesses, opportunities and threats Vietnamese seafood in European markets will be analysed. Suggestions for Vietnamese exporters and policy makers are finally given in chapter 8.

## 2 METHODOLOGY

### 2.1 Marketing research and market research

Both marketing research and market research is a branch of social science, which uses scientific methods to collect information about markets for goods and services. But there is a difference in role and nature between marketing research and market research.

According to American Marketing Association the definition of *marketing research* is: "The process of planning and executing the conception, pricing, promotion and distribution of ideas, goods, and services to create exchanges that satisfy individual and organisational objectives" (American Marketing Association, Dictionary of Marketing Terms).

According to US Small Business Administration, *market research* is "a systematic, objective collection and analysis of data about your target market, competition, and/or environment with the goal being increased understanding of them. Market research is the study of markets (or groups of people) you would like to sell your product to. In other words, it is learning about your customers. Who are they? What do they want or need? What are their lifestyles?" (US Small Business Administration, Glossary)

Marketing research focuses on certain products or certain services, but market research concentrates on a certain market, competition and environment. Marketing research refers to customer behaviour, especially behaviour about purchase and consumption of product. Market research emphasise on factors of a market such as quantity of consumption, social environment, tendency and analysis the other macro-factors.

Most market research is done using desk research involving the sourcing of published information. Both primary and secondary data are used. Primary data is the information collected specifically for the purpose of the investigation at hand. The secondary data is the statistics not gathered for the immediate study at hand but for some other purpose, often collected by government agencies.

## 2.2 International business research

Entrance to foreign markets is not the only way to gain more benefits but also a way to diversify the risk of firms. The first step to enter a foreign market is market research.

In progressive market research, the most important work is to determine the objectives of the research before undertaking research. A frequent objective of international research is that of foreign market opportunity analysis (Czinkota *et al.* 1999). The researchers find out the chances to enter the market by using analytical tools.

The work should begin with a general analysis of macro-variables of a country or of an area. This analysis can be undertaken through criteria such as GNI (Gross National Income) per capita, population, consumption of goods and services, economic growth, inflation, and even the status of corruption of a country or an area. Even though these factors in themselves will not provide any detailed information, they will enable the researcher to determine whether corporate objectives might be met in the market (Czinkota *et al.* 1999). In this project, the following criteria were used in the step of general analysis: population, GNI per capita, production and trade of seafood commodities, and trends of seafood markets in European countries.

In the next step, the researcher should collect information on each individual country or territory from preliminary evaluation. Most information collected may highlight the fastest growing markets, the largest markets, potential markets for a particular product or service, demand trends, and business restrictions. Although precise and detailed information may not be obtainable, information is available for general product categories or service industries. This overview will serve to evaluate markets quickly and further reduce their numbers (Czinkota *et al.* 1999).

At this stage, the researcher must select appropriate markets for in-depth evaluation. The focus will be on opportunities for specific type of service, product, brand or particular markets and will include an assessment as to whether demand already exists or can be stimulated. Finally, a competitive assessment needs to be made, matching market to corporate strengths and providing an analysis of best potential for specific offering (Czinkota *et al.* 1999).

For this project, after the general analysis of European market the target market was determined and the competitive producers identified. Then the shrimp and whitefish markets were researched in detail. Shrimp and whitefish are main export items of Vietnam. Vietnamese enterprises have faced trade barriers from foreign markets, especially American markets. To diversify the risk Vietnamese seafood producers must reduce the dependency on unique markets like United States markets. European markets were targeted to conduct a study of market diversification.



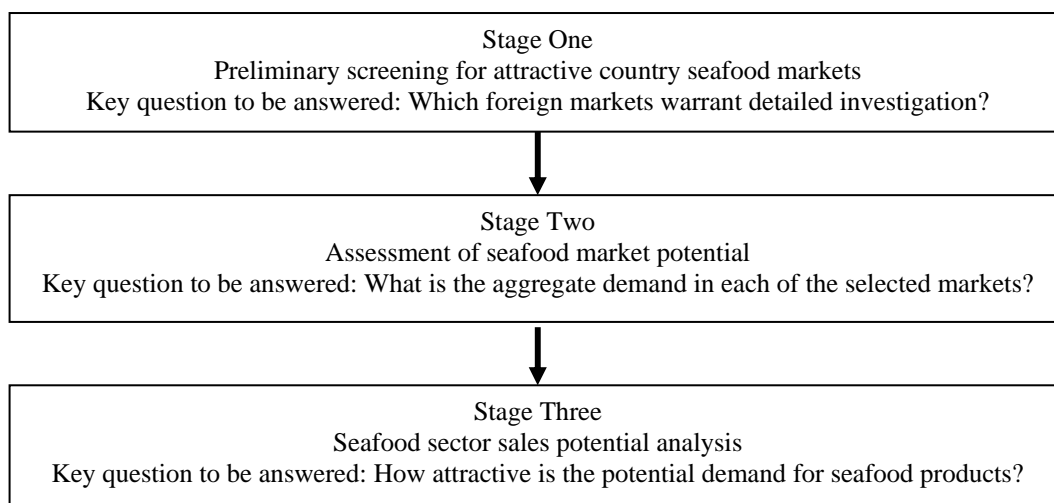


Figure 1: A sequential process of research of foreign market potentials applicable in the seafood sector (Tamer 1989).

As Figure 1 shows, the first step of seafood market research is to discover the attractive country markets that warrant detailed investigation. The first step begins with a cursory analysis of European countries. The aspects are analysed including total GNI, GNI per capita, population figures, consumption of fish products, budgets for consumption, production and trade of seafood commodities.

Based on the country markets chosen from step one, assessment of seafood market potential is undertaken in step two. The second step will reveal the total demand in each selected market. Quantity research as well as qualitative research is used in this step.

In the last step the seafood industry sales potential will be analysed. The step will figure out the level of demand from the selected markets. The step also analyses the advantages of the seafood industry to meet that demand.

### 2.3 SWOT analysis

After international market research for seafood sector in Europe has been undertaken the project continues to environmental analysis for Vietnamese seafood export by SWOT analysis.

SWOT analysis is a tool for evaluating organisation or sector and its business environment, economy, society, politics, culture, and even nature. It is the first stage of planning or policy-making and helps marketers or policy makers to focus on key issues (website: QuickMBA, SWOT analysis).

SWOT analysis stands for **strengths, weaknesses, opportunities, and threats**. Strengths and weaknesses are internal factors. Opportunities and threats are external factors.

The SWOT scans the environment and provides information that is helpful in matching the organisation's resources and capabilities to the competitive environment in which it operates. As such, it is instrumental in strategy formulation and selection.

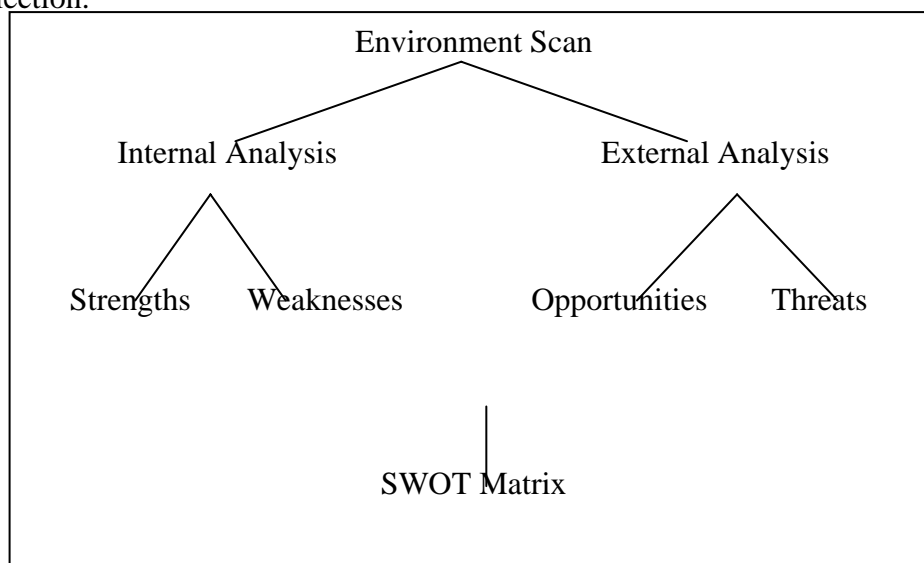


Figure 2: SWOT analysis framework. [www.quickmba.com](http://www.quickmba.com)

The strengths are resources and capacities that can be used as a basis for developing a certain objective and a competitive advantage.

The strengths of a sector could be:

- Specialist marketing expertise
- A new, innovative product
- Location of business
- Quality processes and procedures
- Price and quantity of product or service, prestige of business
- Any other aspect of the business that adds value to the product or service

The weakness may be the absence of certain strengths. So if a firm lacks the strengths above, they are weaknesses for the firm.

The weaknesses could be:

- Lack of marketing expertise
- Undifferentiated products
- Location of business making the disadvantage of delivering and conserving of products
- Poor quality goods or service
- Damaged reputation
- Other aspects those are not more advantage than competitors.

The opportunities are things that originate from external environment and businesses maybe obtain profit and growth from.

The opportunities could be:

- A developing market
- Mergers, join ventures or strategic alliances

- Moving into new market segments that offer improved profits
- A new international market
- A market vacated by an ineffective competitor

The threats often originate from changing of external environment.

The threats could be:

- A new competitor in the home markets
- Price wars with competitors
- A competitor that has innovative products or services
- Competitors which have superior access to channels of distribution
- Taxation is introduced on the firm’s products or service
- Other protective policies of government to domestic production

Whilst strengths and weaknesses are internal factors that businesses can bring into play and adjust by internal changes, the opportunities and threats are external factors that businesses need to make use of and overcome by efficiency and expertise.

A firm or a sector should not necessarily pursue the more lucrative opportunities. Rather, it may have better chance at developing a competitive advantage by identifying a fit between their strengths and upcoming opportunities. In some cases, the firm can overcome a weakness in order to prepare it to pursue a compelling opportunity.

To develop strategies that take into account the SWOT profile, a matrix of these factors can be constructed. The SWOT matrix (also known as a TOWS matrix) is shown below:

	<b>Strengths</b>	<b>Weaknesses</b>
<b>Opportunities</b>	S-O strategies	W-O strategies
<b>Threats</b>	S-T strategies	W-T strategies

Figure 3: SWOT/TOWS matrix (www.Quickmba.com).

- S-O Strategies pursue opportunities that are a good fit to the companies strengths
- W-O strategies overcome weaknesses to pursue opportunities
- S-T strategies identify ways that the firm can use it strengths to reduce it vulnerability to external threats.
- W-T strategies establish of defensive plan to prevent the firm’s weaknesses from making it highly susceptible to external threats.

This project will evaluate the strengths, weaknesses, opportunities and threats of the Vietnamese seafood sector based on critical areas such as knowledge and concerns of exporters, price of products, quality of products, competition, regulation, location of the country, taxation, innovation of product, etc.

### 3 INTRODUCTION OF THE VIETNAMESE SEAFOOD SECTOR

#### 3.1 Natural conditions

Vietnam is located in the tropical monsoon area of South East Asia. It has a coastline of more than 3,260 km, crossing 13 latitudes, from 8° 23' north to 21°39' north. The total area of the territorial water is 226,000 km<sup>2</sup>. The Exclusive Economic Zone (EEZ) is about 1 million km<sup>2</sup>.



Figure 4: Map of Vietnam showing the long coastline and South China Sea. Website: <http://www.greenwichmeantime.com>

Vietnam has advantage for developing aquaculture with total area of fresh water and brackish water around 1.7 million hectares. It includes paddy fields, river systems, ponds, lakes and reservoirs.

#### 3.2 Fishery production

Since opening of the economy, the fishery sector has developed fast, becoming a key sector in the Vietnam economy. Production volume has increased constantly throughout the years. In 2002, the total production volume reached 2.4 million MT, in which marine capture accounted for 60%, the rest came from aquaculture. The average growth rate of fisheries production is about 30% annually in the period 1990-2002. Table 1 shows in more detail the growth of fisheries production.

Table 1: Fisheries production of Vietnam, selected years, MT (Ministry Fisheries of Vietnam).

Target	1990	1995	2000	2001	2002
Marine capture	709,000	928,860	1,280,590	1,347,800	1,434,800
Aquaculture	310,000	415,280	723,110	879,100	976,100
<b>Total</b>	<b>1,019,000</b>	<b>1,344,140</b>	<b>2,003,700</b>	<b>2,226,900</b>	<b>2,410,900</b>

Table 1 shows that marine capture increased from 709 thousand MT in 1990 to 1.4 million MT in 2002 (a twofold increase) and aquaculture production increased from 310 thousand MT in 1990 to almost 1 million MT in 2002 (more than threefold increase).

The average growth of fisheries production in the period 1990-2002 was 28%, in which the growth of marine capture was 26% and 30% aquaculture.

There are over 2,000 species of fish in Vietnamese water, among which around 130 species with economic value are: 1,600 crustacean, 2,500 molluscs and many other types of seaweed and seabirds. The total potential of fisheries resources is estimated at 4.2 million tons; the annual sustainable production is assessed at about 1.7 million tons (Vietnam Fisheries 2001). However, scientists say that inshore fisheries resources have been over exploited.. Volume of fish exploitation in Vietnam should peak at 1.2-1.3 million MT per year, according to fisheries scientists (Plan of Vietnam Fishery 2000-2010).

Vietnam has huge potential to develop aquaculture. The Government of Vietnam puts much attention to aquaculture development aimed to create a sustainable fisheries structure of marine resources, to contribute to the food safety assurance, poverty alleviation, and job creation for people, especially to improving women’s role in rural and mountainous areas. Aquaculture development also helps to increase products for export. The target in production is that 40% comes from capture fisheries and 60% from aquacultures in 2010 (Plan of Vietnam Fishery 2000-2010).

In 2002, Vietnam had about 81,800 motorised fishing boats of all types. This was increase from 72,000thousand boats in 1990 (see Table 2 for details) but a decrease compared to 95,700 boats in 1995. Among the motorised boats, there were more than 6,000 units with engine capacity of over 90 hp, which are capable of performing offshore fishing (Fisheries Ministry of Vietnam).

Table 2: Capacity of Vietnamese fisheries production, selected years (Fisheries Ministry of Vietnam, 2002).

Target	1990	1995	2000	2001	2002
Number of boats	72,328	95,700	79,017	78,978	81,800
Total capacity (hp)	727,585	1,500,000	3,204,998	3,722,577	4,038,365
Aquaculture area (ha)	491,723	581,000	652,711	900,109	955,000

In 2002, the total water surface used nationwide for aquaculture purposes was 955,000 ha, an increase by 94% since 1990. Total aquaculture production reached 976,100 tons, 15% among which was black tiger shrimp. It is expected by the year 2005, under the policy of transferring structure of land for agriculture, the water surface area used for aquaculture will be 1.4 million ha, including 500,000 ha of fresh water surface and 900,000 ha of brackish and marine water. The production in year 2005 is expected to reach 1.15 MT (Plan of Vietnam Fishery 2000-2010).

In 1997 fisheries ministry implemented offshore capture strategy. The plan was to increase capacity of fishing sector by building large vessels but reducing number of

small boats. This explains the numbers of boats have gone down but total capacity has gone up during the period from 1995 to 2000.

Since the beginning of the 1990s, the fisheries processing industry of Vietnam has had remarkable growth. In the year 2003, there were 332 freezing seafood-processing enterprises nationwide and thousand of traditional processing units. In which there are 152 processing plant qualified for food safety and sanitary regulation under HACCP, ISO or region standard (Vietnam Finance Newspaper, 2004).

Table 3: Vietnamese seafood exports, volume and value for selected years (Fisheries Ministry of Vietnam, 2002).

Target	1990	1995	2000	2001	2002
- Value (million US\$)	205	550.1	1,478	1,777	2,023
- Export amount (MT)	49,332	127,700	291,922	358,833	458,658

By 2002 the total quantity export of seafood industry reached 459 thousand MT, valued at more than US\$ 2 billion US\$. The average growth rate of export value in the period from 1990 to 2002 is 21% annually. Vietnam plans to reach US\$ 3 billion US\$ of seafood export value in 2005 (Vietnam Finance Newspaper, 2004).

The seafood products consist of both traditional items and new items. Traditional products are live, salted, iced, fermented, fish sauce and dried. Almost all these products are used to meet domestic demand. Meanwhile new products such as frozen, canned, value-added and ready to eat are mostly used for exporting.

The seafood industry in Vietnam is today the third largest exporting industry in the country. It is followed by petroleum and textile and clothing exporting industries. But it has been one of the highest growth sectors and created many jobs, especially in rural areas.

### 3.3 Export markets

In the 1990s, the Japanese market was the dominating market for Vietnamese seafood exports. But in recent years the structure has changed profoundly. Vietnamese seafood exports are less dependent on a single market today than before. United States market share for Vietnamese seafood has increased rapidly, especially in the years since the implementation of the Bilateral Trade Agreement (BTA) between Vietnam and United States in 2001. Table 4 below shows the changes in the structure of the seafood export share of Vietnam.

Table 4: Vietnamese seafood export share, by import country, period 1997-2003 (Fisheries Ministry of Vietnam).

Market	1997	1998	1999	2000	2001	Dec.2003
Asia (ex. Japan)	31%	29%	29%	28%	27%	25%
Europe	10%	11%	10%	5%	5%	4%
USA	5%	10%	14%	20%	28%	32%
Japan	50%	44%	41%	32%	26%	27%
Others	4%	6%	7%	15%	14%	13%
<b>Total value, million US\$</b>	<b>761.5</b>	<b>818.0</b>	<b>938.9</b>	<b>1,478.6</b>	<b>1,777.5</b>	<b>2,022.8</b>

The US market has the highest export share, which has increased constantly since 1997, after the establishment of diplomatic relations in 1995 and following the exchange of Ambassadors in May 1997. The United States market has become the most important for Vietnam replacing the Japanese market. However, Japan is still a target market for Vietnamese fish products.

In contrast the export share into European market has fallen, which does not correlate with the increasing seafood export capacity of Vietnam. Although the total value has increased constantly year-by-year it has done so more slowly than other markets such United States and some Asian markets. As a result the export share into European markets has fallen. The Vietnamese government has set a target of export share into European countries as 10% of the total export value by 2010.

The export share in value terms in the markets such as China, Taiwan and South Korea has also fallen in recent years. Two reasons for this are the increasing number of exports into the US market and the SARS disease.

### 3.4 Export items

Frozen and fresh products are the main seafood export categories of Vietnam. There is only about 20%-30% value added products such as canned and ready to eat in the total export value as well as the export volume.

Shrimp is the dominant commodity of seafood in single export items. Shrimp export value has accounted for approximately 50% of the total export value. Shrimp has a high price but it has also a risk in aquaculture. The share of each product category is shown in Table 5.

Table 5: Fisheries exports in 2001 classified by products (Fisheries Ministry of Vietnam 2001).

Items	Volume		Value	
	Tons	Percent	Million US\$	Percent
Frozen shrimp/prawn	87,151.2	23%	777.8	44%
Frozen finfish	74,093.1	20%	221.9	12%
Dried squid	18,109.8	5%	153.8	9%
Frozen Squids/Cuttlefish	21,069.7	6%	80.7	5%
Tuna	14,475.7	4%	58.6	3%
Molluscs/Crustacean	18,465.2	5%	49.5	3%
Dried fish	12,906.8	3%	36.8	2%
Others	129,219.3	34%	398.3	22%
<b>Total</b>	<b>375,490.7</b>	<b>100%</b>	<b>1,777.50</b>	<b>100%</b>

From Table 5 we can see that by the year 2001 total export value of seafood reached US\$ 1,778 million US\$, in which frozen shrimp accounted for 44%, frozen finfish 12%, dried squid 9% and other fish accounted for 37%. Frozen finfish includes fresh water fish and marine fish. Catfish has a high percentage of the total export value and is included in the frozen finfish category. Other species include frozen octopus, crab, dried krill, lobster (slipper) and dried shrimp.

### 3.5 Raw material resources

Historically, the Vietnamese seafood industry has been based on offshore fishing and catching in the mangrove areas of the Mekong Delta. Since the 1990s, the total area transferred from rice production to aquaculture production has increased year by year. The total area under aquaculture farming in the period 1996-2001 rose by almost 300% to 1.1 million ha in 2001. Today, 80% of raw material input of shrimp production in the south of the country comes from aquaculture shrimp farming. The Vietnamese government is expecting the total area for aquaculture farming to increase to more than 3 million ha by 2005 (Plan of Vietnam Fishery 2000-2010). Aquaculture farming and seafood processing are decisive sectors for the developing economy in the Mekong Delta.



Figure 5 : Map of the Mekong Delta, southern Vietnam (<http://cantho.cool.ne.jp/mekong/mangrove/map.jpg>).



The Vietnamese fisheries sector is expected to increase its total landing volume up to 3.5 million tons by 2010 of which, the landing volume from aquaculture will account for about 60%. The average growth rate of export value is set to increase by 15-20% during period 2000-2010. It is estimated that the number of people in direct employment in the fisheries sector will be about 4.4 million in 2010 (Plan of Vietnam Fishery 2000-2010).

### **3.6 Summary**

Vietnam has huge potential to develop its fisheries sector in both marine capture and aquaculture. The fisheries sector has become a key industry in the Vietnamese economy. Seafood export value is in third position among export products of Vietnam. Aimed to create a sustainable fisheries structure of marine resources, promoting aquaculture is a priority in the development strategy of the fisheries sector.

Shrimp products are the dominant export items, accounting for nearly 50% of total export value annually. Vietnamese export depends heavily on few markets such as United States, and Japan, especially in shrimp and tra and basa catfish. It is therefore necessary to diversify the export markets.

Value added products account for a modest portion, about 20-30%, of the total export value annually. To gain high profits and meet the taste trends of consumers Vietnamese seafood exports need to improve the portion of value added products in total export items.

## 4 OVERVIEW OF THE EUROPEAN SEAFOOD MARKET

### 4.1 European demographic and societal study

The European continent is bordered by the Atlantic Ocean, Mediterranean Sea, and Barents Sea. Fishing is a traditional form of work within many European countries. Seafood is a favourite product of many European people, especially people of the western part of the continent.



Figure 6: Map of Europe (<http://www.graphicmaps.com/aatlas/world.htm/>)

The European continent includes industrialised countries with good health and hygiene infrastructures, with universal primary education. People tend to have fewer children at a later stage in life and they tend to live longer (Maas 2004).

The European continent consists of 45 countries with an approximate population of 860 million people in 2000 and accounts for 14% of the world’s total population (World Bank). The population is expected to be stable over the next 10 years.

Table 6: Population of the European continent (UN Population Division 2000).

Countries	2000		Est. 2010		Est. 2015	
	Million	Percent	Million	Percent	Million	Percent
EU members (15 countries)	377.3	44%	382.9	43%	383.7	43%
New EU members (10 countries)	74.7	9%	73.6	8%	72.9	8%
None - EU members	408.3	47%	424.7	48%	434.0	49%
<b>Total European continent</b>	<b>860.4</b>	<b>100%</b>	<b>881.3</b>	<b>100%</b>	<b>890.6</b>	<b>100%</b>

The European Union (EU) is made up of 15 countries. The current member states are Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, Sweden and The United Kingdom. Ten other countries will become official members of the EU in 2004. They are Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia. These candidates include several Eastern European countries having a

traditional trade relationship with Vietnam. Three applicant countries are Bulgaria, Romania and Turkey. These countries are negotiating to join the Union in the near future

The population of Europe is very distinguished among countries. There are 9 countries with over 40 million people and there are some countries with only some thousand people such as Andorra, Faeroe Islands, Monaco, Liechtenstein and San Marino. Figure 7 shows the top 10 populated countries in Europe.

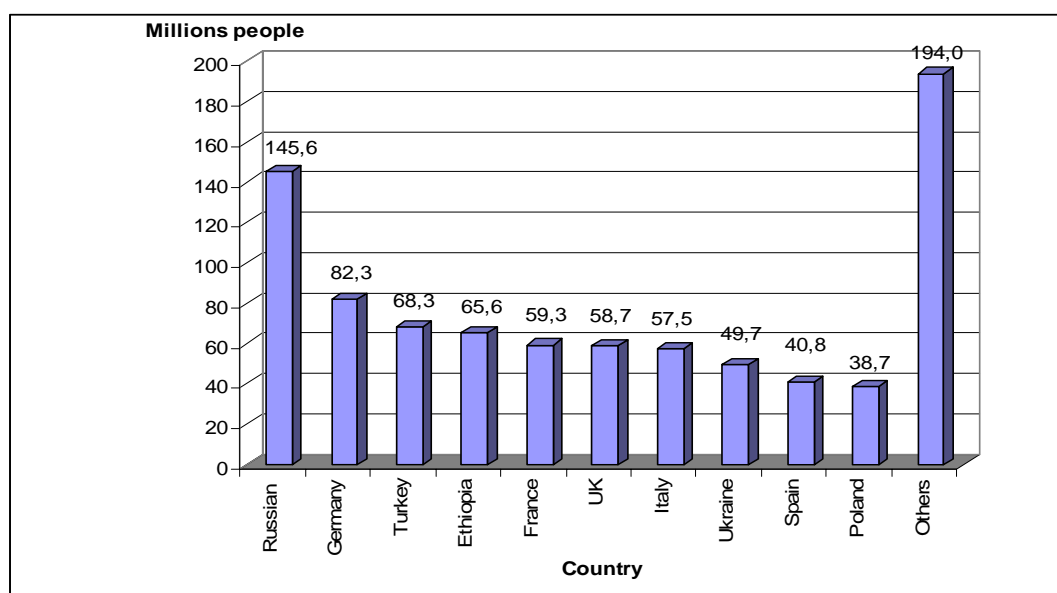


Figure 7: Population of the top 10 European countries (UN Population Division 2000).

The top 10 largest countries account for 80% of European population. The largest country is Russian with 145.6 million, then Germany with 82 million, Turkey with 68 million, France with 59 million, United Kingdom with 58 million, Italy with 57 million, Ukraine with 49 million, Spain with 40 million, Poland with 38 million and Romania with 22 million (numbers in 2000).

Europe is a prosperous and developed continent. Most European countries have Gross National Income (GNI) per capita higher than the average level of the world. The average GNI per capita of Europe is nearly 14,000 US\$ per year, three times more than the world average.

Most of all the countries listed in Figure 7 have high income per capita and high quality standard of life. Countries such as United Kingdom, France, Italy, Spain and Netherlands have not only high GNI per capita but also high total Gross Domestic Production (GDP). These are assurances of high demand for seafood because of the raising hygiene and safety concern in developed countries. However, countries such as Iceland, Norway, Ireland or Cyprus have high average income as well as high seafood consumption per capita but these countries are not target markets for seafood exporters.

The Atlas method was applied from 2001; and a conversion factor was used to reduce impact of exchange rate cross-country fluctuation . The method used explains in real terms the income of countries. This application has led to a decrease in the figure of GNI of almost all of countries since 2001. Table 7 shows this in more detail.

Table 7: European countries with more than 10,000 US\$ in GNI per capita (World Bank data Atlas method).

Country	1998	1999	2000	2001	2002
Luxembourg	45,060	43,630	41,860	39,840	38,830
Switzerland	40,820	39,220	39,650	38,330	37,930
Norway	34,710	33,630	34,530	35,620	37,850
Denmark	32,770	32,250	31,770	30,600	30,290
Iceland	27,700	28,690	30,250	28,910	27,970
UK	22,830	24,080	25,200	25,120	25,250
Sweden	27,660	27,510	27,420	25,400	24,820
Netherlands	25,170	25,270	25,260	24,330	23,960
Ireland	20,530	21,620	22,870	22,850	23,870
Finland	24,740	24,750	25,090	23,780	23,510
Austria	26,690	25,700	25,230	23,940	23,390
Belgium	25,630	25,090	25,070	23,850	23,250
Germany	26,630	25,690	25,130	23,560	22,670
France	24,830	24,460	23,990	22,730	22,010
Italy	20,560	20,340	20,130	19,390	18,960
Spain	14,880	14,690	14,760	14,300	14,430
Cyprus	12,110	12,220	12,460	12,320	12,320
Greece	12,130	11,910	11,730	11,430	11,660
Portugal	11,130	11,190	11,190	10,900	10,840
<b>EU average</b>	<b>13,868</b>	<b>13,758</b>	<b>13,842</b>	<b>13,425</b>	<b>13,418</b>

Russia has an average income per capita of about 2,000 US\$ per year. This level is much lower than the average level of the world. However, the total annual GDP is the sixth highest in Europe. This country has a high total GDP, high population, and traditional trade links with Vietnam.

## 4.2 Fisheries production in Europe

Europe has a rich resource of fishing with four main areas of capture including North Sea, Baltic Sea, Atlantic Areas, and Mediterranean Sea. To meet the demand of seafood consumption fisheries production of Europe has increased throughout the years. Figure 8 illustrates the historical fisheries production, both marine capture and aquaculture, of Europe in the period 1950-2001.

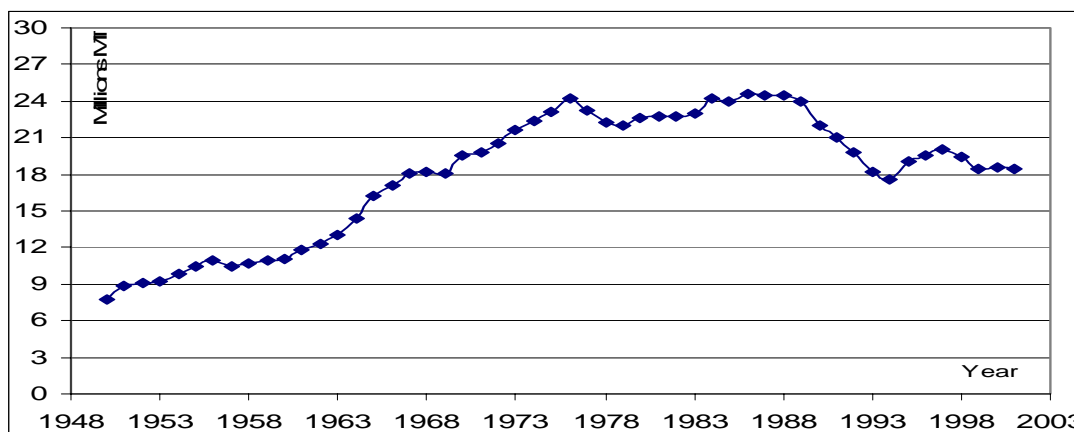


Figure 8: Historical fisheries production of Europe in the period 1950-2001 (FAO 2001).

Total fisheries production of the European continent increased continuously between 1950 and 1975. Peak years of production were 1986, 1987, and 1988 with a total volume of about 24.5 million metric tons.

However, the European portion of fisheries production when compared to the total world volume has decreased continuously from more than 30% in 1950s, 1960s, and 1970s to less than 20% in 1990s and 13% in 2001.

The countries with rich marine resource have the highest volume of fishery production in Europe. These countries are Russia, Norway, Iceland, Denmark, Spain, France, UK, Faroe Islands.

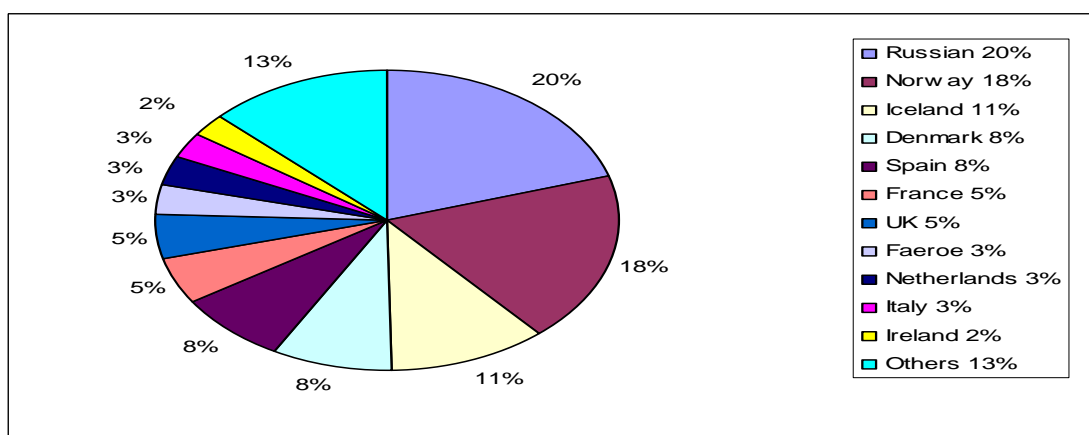


Figure 9: Fisheries volume production share of European countries in 2001, by country.

In 2001, total fisheries production of Europe was about 18 million tons. The countries with highest quantity of marine capture are Russia with 3.6 million MT, Norway with 2.8 million MT, Iceland with 2 million MT, Denmark with 1.5 million MT, Spain with 1.1 million MT; and the UK, France, Faeroe Island, and Netherlands with over half a million MT each in 2001. These countries accounted for more than 80% of total capture in Europe.

The aquaculture production of European countries has increased considerably since the late 1990s. The volume of aquaculture reached 2 million metric tons in 1999. However, the average growth rate for European aquaculture is 6.5%, which is much lower than average growth of 11.4% for the world in the period 1950-2001. European fisheries production still depends approximately 90% on natural resources, whilst the average of capture volume from total production is 66% for the world.

The main countries in aquaculture are Norway with 512,000 MT, Spain with 312,000 MT, France with 252,000 MT, Italy with 221,000 MT, the UK with 170,000 MT, Greece with 97,000 MT, and Russia with 90,000 MT in 2001. These countries accounted for 80% of aquaculture production in Europe. Marine fish is the main type of fish in Europe and explains the importance of marine recourse for European countries. Table 8 shows the percentage of production by species.

Table 8 : Fisheries volume production share of Europe, by species, in 2001 and 1950-2001.

Species	2001	Total 1950-2001
Demersal marine fish	39.8%	42.2%
Pelagic marine fish	36.6%	38.3%
Freshwater and diadromous fish	9.8%	4.9%
Molluscs (excl.cephalopods)	6.3%	5.1%
Crustaceans	2.4%	2.0%
Others	5.1%	7.5%
<b>TOTAL, million MT</b>	<b>18.4</b>	<b>700.7</b>

Average percentage landing of marine fish accounts for more than 80% in the period 1950-2001. This percentage was 76% in 2001.

Freshwater fish and molluscs are not common species in Europe as they have direct competition with finfish and shrimp from tropical countries.

Figure 10 shows the increase of freshwater fish production, including capture and aquaculture, of European countries in the period 1950-2001.

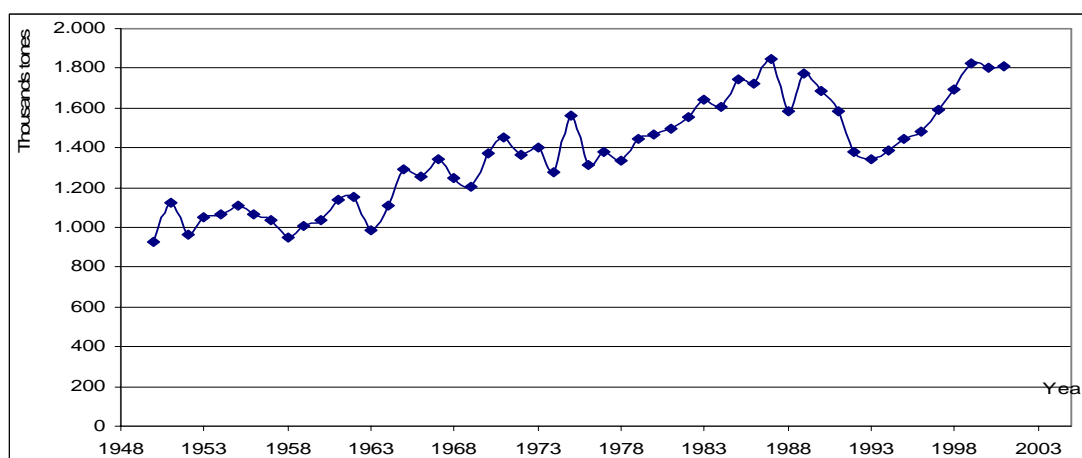


Figure 10: Increasing freshwater fish production by years (FAO 2001).

Freshwater fish production was stable in the 1950s with production less than one million MT, 1960s with 1-1.3 million MT, 1970s and 1980s with 1.3-1.8 million MT. The peak of 1.85 million MT in 1987 dropped to 1.59 million MT in 1988. In the last three years between 1999-2002 the landing volume has stabilised around 1.8 million per year. The dropping of the landing volume between 1989-1994 from 1.7 million MT to 1.3 million is probably a result of the changing political situation of Former Soviet Union (USSR area).

The increase of freshwater fish production has led to increase competition of this species in markets and reflects the acceptance of this species from consumers.

### 4.3 Trade and consumption of fish and fish products in Europe

#### 4.3.1 Export fishery commodities

In the period 1992-2001, European countries exported fishery commodities valued from 15 to 19 billion US\$ annually. In volume terms, the total quantity of exporting commodities amounts to between 8 and 11 million MT. The peak volume reached 11.1 million MT in 2001.

Export value has increased rapidly since the 1990s, but almost all fisheries products are traded within European continent.

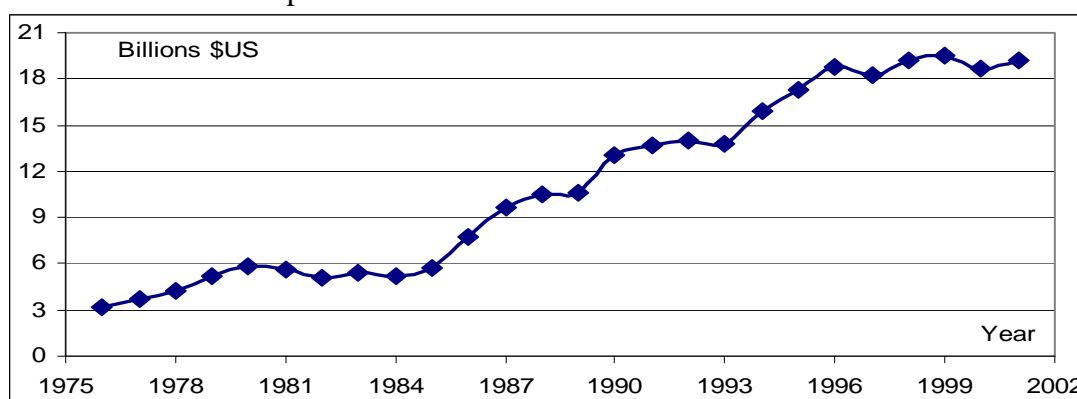


Figure 11: Export value of fishery commodities in Europe from 1976-2001 (FAO 2001).

Figure 11 illustrates that the export value of fish commodities has increased strongly in the period 1976-1996. This increase can be explained by the increase of quantity and price. Between 1976-2001 the export quantity increased by more than 3 times; and average growth was 4.5% annually. Meanwhile the export value has increased nearly 7 times; the average growth is 7.5% annually in the same period.

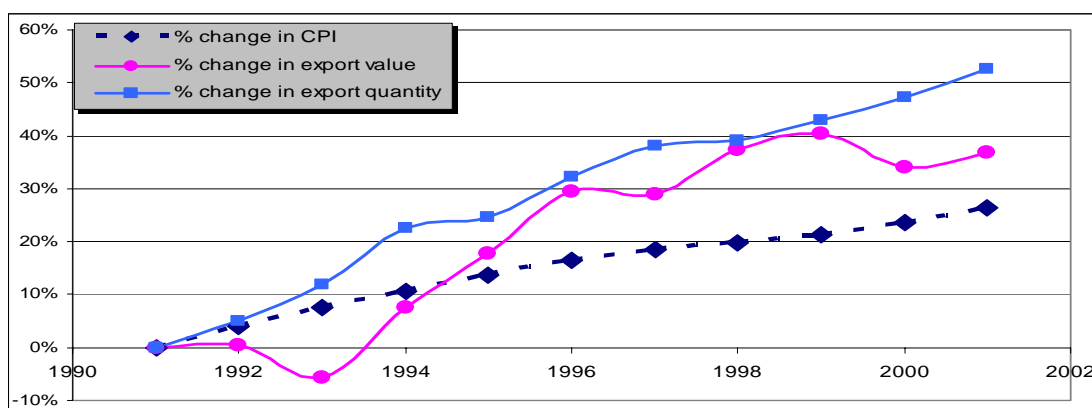


Figure 12: Change in CPI, export volume and export value of the 15 EU states in %, 1991-2001.

Increasing price is an important factor affecting the increasing export value. The increase in price can be explained by increasing demand and inflation. The change in price was measured by the Consumer Price Index (CPI). Figure 12 shows the change in CPI, export value and export quantity of fish commodities of the 15 members of the EU.. As Figure 12 shows, although quantity export increased constantly, export value has increased at a lower rate and has fluctuated more. Export value has increased by 2.9% yearly while export quantity has increased annually by 3.9% yearly between 1991-2001. The average increase of the CPI in the period 1991-2001 is 2.2%. Export value increased annually by 0.7% more than inflation, showing a real increase in price.

In recent years the increase in export volume has been a major factor in the increase in export value. Table 9 illustrates clearly this influence. In the period between 1995-2001, the export volume increased by a factor of 1.2 times and the average annual growth was 2.7%. Yet the export value increased only by a factor of 1.1 times and the average annual growth was 1.5%. The lower increase in total value compared to quantity shows that competition is fiercer in the market and the increasing demand of seafood in European continent. It is possible to conclude indirectly that the export price has decreased during the period. The entry of products from Asian countries such as China, India, Thailand and some American countries such United States and Chile is also a possible explanatory factor. The result is that exporters in countries such as Norway, Denmark, Russia, Spain, and Iceland are faced with more competition.

The export items include commodities for food and non-food. The food commodities account for more than 80% of the total export volume. Fish products are main export commodities. Crustaceans and molluscs products account for just a few percent in total export commodities.



Table 9: Export volume by main groups from Europe, 1995-2001, 1,000 MT (FAO 2001).

Commodity	1995	1996	1997	1998	1999	2000	2001
Fish, fresh, chilled or frozen	5,649	6,133	6,448	6,145	6,326	6,536	6,930
Meals	1,075	1,096	1,034	1,077	1,151	1,102	1,101
Crustaceans and molluscs	537	672	690	686	740	792	771
Fish, canned	542	599	689	718	665	726	761
Inedible	299	377	447	445	310	475	492
Fish, dried, salted, or smoked	453	472	500	477	460	445	448
Oils	430	404	367	263	296	308	300
Crustaceans molluscs, canned	144	153	159	159	170	175	196
Sponges, corals, etc.	39	44	60	35	30	26	37
Aquatic plants	11	14	14	15	15	16	20
<b>Total</b>	<b>9,180</b>	<b>9,966</b>	<b>10,408</b>	<b>10,020</b>	<b>10,163</b>	<b>10,603</b>	<b>11,055</b>

Fresh and frozen fish dominates export commodities, accounting for more than 60% of total export volume. The species with highest export value in total are herring, mackerel, salmon, capelin and cod. The value added products such as canned, ready to eat fish account for a modest portion.

The countries that have high production also have high export value. However some countries export essential raw material and then import high processed products. There are some countries such as Norway, Denmark, and Iceland mainly having surplus trade from fisheries. Table 10 shows the 10 countries having highest export value.

Table 10: Fish products export value from Europe, by country, 1995-2001, in million S\$ (FAO 2001).

Country	1995	1996	1997	1998	1999	2000	2001
Norway	3,140	3,434	3,422	3,683	3,781	3,550	3,385
Denmark	2,471	2,715	2,670	2,915	2,891	2,766	2,677
Spain	1,208	1,472	1,494	1,552	1,619	1,617	1,863
Russian	1,635	1,686	1,356	1,147	1,218	1,390	1,530
Netherlands	1,464	1,489	1,435	1,374	1,755	1,352	1,430
UK	1,209	1,316	1,280	1,564	1,439	1,270	1,319
Iceland	1,343	1,426	1,361	1,437	1,383	1,237	1,280
Germany	907	1,065	987	1,063	975	1,111	1,047
France	1,002	1,016	1,109	1,112	1,120	1,109	1,034
Belgium	371	393	442	485	455	479	527
Others	2,533	2,807	2,701	2,828	2,876	2,828	3,091
<b>Subtotal</b>	<b>17,284</b>	<b>18,819</b>	<b>18,256</b>	<b>19,158</b>	<b>19,513</b>	<b>18,709</b>	<b>19,184</b>

Norway is one of the largest fishing countries in the world with annual export value of more than 3 billion US\$. Following, this are Denmark with an export value of more than 2 billion US\$ and Spain, Russia, Netherlands, United Kingdom, Iceland, Germany and France with export value worth more than 1 billion US\$ annually each.

#### 4.3.2 Import of fishery commodities

United States, Japan and the European Union are the biggest importers of seafood in the world. These countries import fish commodities for about 45 billion US\$ annually, accounting for nearly 80% of the total import value in the world.

Total import value of fishery commodities in European continent has increased year by year. In 1998 the total import value reached its peak point with more than 23 billion \$ worth of fish being imported in the EU.

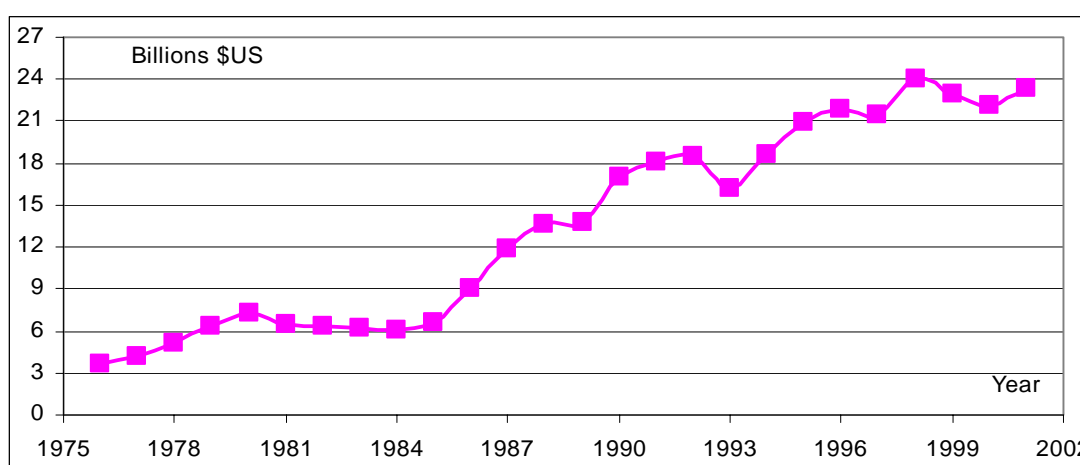


Figure 13: Historical import value of fishery commodities into Europe, 1976-2001.

The import value of fish products increased between 1976-2001. The total import value in 2001 is more than 6.5 times higher than in 1976 and the average annual growth is 7.5%. Meanwhile the import quantity has increased 2.7 times and the average growth is 3.9% during the same period. Therefore it may be concluded that the increasing price in the period is the main factor influencing import value.

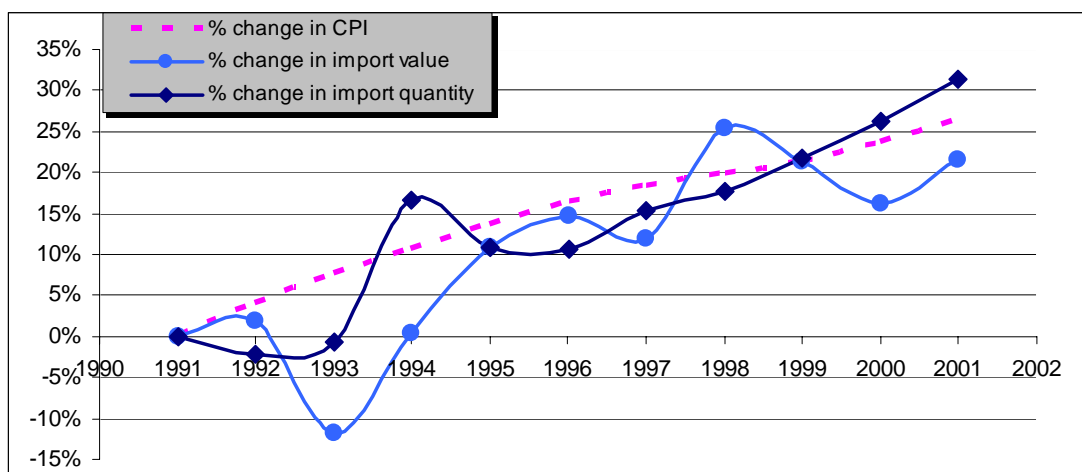


Figure 14: Change in CPI, import value, and import volume of the 15 EU states in %, 1991-2001.

Figure 14 shows the change in CPI, import value and import quantity of fishery commodities of the 15 EU member states in the period 1991-2001. Both quantity and value of import fluctuated in this period. This reveals the fluctuation in demand of goods. The increase in CPI was greater than the increase of import value.

In the period between 1991-2001 the average increase of CPI is 2.2%, 1.8% of the import value, and 2.5% of import quantity of the EU. The import price of fishery commodities decreased by 0.4% because of increasing supply.

European countries import every type of fishery commodities including food and non-food items. About 80% volume import of fishery commodities into Europe was used for food consumption. Fresh and frozen fish are dominating in European import.

Table 11: Import volume by main group, 1995-2001, 1,000 MT (FAO 2001).

Commodity	1995	1996	1997	1998	1999	2000	2001
Fish, fresh, chilled or frozen	3,993	4,393	4,710	4,995	4,918	5,049	5,477
Meals	1,601	1,458	1,562	1,303	1,482	1,656	1,578
Crustaceans and molluscs	1,069	1,123	1,175	1,299	1,365	1,393	1,520
Fish, canned	828	939	1,102	1,183	1,084	1,189	1,228
Inedible	428	493	665	840	675	837	851
Oils	784	554	563	360	497	518	531
Fish, dried, salted, or smoked	355	391	381	362	350	341	349
Crustaceans and molluscs, canned	188	195	194	201	204	226	234
Aquatic plants	79	68	70	69	73	72	69
Sponges, corals, etc.	48	55	56	49	47	47	45
<b>TOTAL</b>	<b>9,373</b>	<b>9,669</b>	<b>10,476</b>	<b>10,662</b>	<b>10,695</b>	<b>11,328</b>	<b>11,882</b>

In 2001, European countries imported 11.8 million MT of fishery commodities of which fresh, chilled or frozen fish accounted for 46% and fresh and frozen crustacean and molluscs accounted for only 13%. Value added products only had a modest share of European import.

The most developed and biggest countries in Europe usually have the highest import of fishery products. They are Spain, France, Italy, the UK, Denmark, Belgium, and Netherlands. Table 12 shows the 10 countries having the highest import value in Europe.

Table 12: Top 10 importers of fishery commodities in Europe, 1995-2001 in US\$ million (FAO 2001).

Country	1995	1996	1997	1998	1999	2000	2001
Spain	3,119	3,152	3,083	3,560	3,306	3,372	3,742
France	3,256	3,228	3,091	3,538	3,318	3,018	3,095
Italy	2,309	2,620	2,598	2,834	2,749	2,555	2,739
Germany	2,504	2,567	2,385	2,649	2,309	2,282	2,375
United Kingdom	1,934	2,076	2,169	2,410	2,306	2,210	2,268
Denmark	1,622	1,668	1,586	1,775	1,832	1,860	1,791
Netherlands	1,200	1,148	1,114	1,239	1,314	1,172	1,242
Belgium	1,041	973	985	1,068	1,075	1,039	1,008
Portugal	764	785	752	930	1,020	863	939
Sweden	546	590	595	639	718	712	735
Others	2,687	3,072	3,126	3,349	2,952	2,989	3,418
<b>TOTAL</b>	<b>20,983</b>	<b>21,877</b>	<b>21,485</b>	<b>23,990</b>	<b>22,900</b>	<b>22,073</b>	<b>23,352</b>

The import value in 2001 reached approximately 23.4 billion US\$ with Spain, France and Italy being the largest importers. European Union countries are the biggest importers of fishery commodities in Europe. This group imports fishery products of a value of about 20 billion US\$ annually, accounting for 90% of European imports and 34% of world imports.

#### 4.3.3 *The supply and consumption of fish products in Europe*

Seafood is acknowledged as a healthy product. The most developed countries have the highest consumption utilisation of seafood. In all major European countries, the consumption of seafood is increasing. The reason for this increase is the raised concern in healthy eating and lifestyle patterns, the recent scares over red meat consumption and the increased added value opportunities for fish products due to demographic and societal changes (Hardy 2001).

##### 4.3.3.1 The supply of fish products for Europe

Resources of supply of seafood include domestic production and imports. The apparent supply in Table 13 (below) was calculated by resource of production, imports, exports and adjusting stock change.

Table 13: Apparent European seafood consumption, in 1,000 MT (FAO 2001).

Target	1992	1997	2001
Production	19,085	17,555	17,215
Imports	15,168	19,482	19,944
Exports	11,747	16,332	16,411
Stock change	63	202	231
Apparent supply	22,569	20,907	20,979
Non food consumption	9,104	6,000	6,269
<b>Food consumption</b>	<b>13,465</b>	<b>14,907</b>	<b>14,681</b>
Per capita (kg)	18.6	20.5	20.2
% net import in supply	15%	15%	17%

Total domestic supply of fish products in European countries is more than 20 million metric tons annually. In which there are approximately 17 million metric tons from domestic production, 19 million metric tons from import and 16 million metric tons for export. The total supply of fish and seafood is used for food consumption and non-food consumption such as feed, seed, waste and other uses. In the later years the total supply of fish and fish products has slightly decreased due to a reduction in non-food consumption. The net import of seafood in total supply is still growing with 17% in 2001. The percentage of food-consumption in total supply was 65% in 1997 and has increased to more than 70% in 2001.

The dependence of the 15 EU member states on imported seafood is still growing. Imports now account for almost 60% of all seafood consumed in the EU. The main reason is the difficulty of the supply of raw materials that the processing industry faces in term of price, volume, regulation and presentation. This has led to a progressive increase in export from non-EU countries. The EU countries are becoming larger markets for seafood exporters in worldwide.

The countries that have a high supply of fisheries products also have high seafood consumption and high import or high production of fisheries products. Table 14 shows 10 countries that have the highest fish and fish products supply.

Table 14: Top 10 suppliers of fish products to Europe, period 1997-2001, 1,000 MT (FAO 2001).

Country	Total supply of fish, seafood				
	1997	1998	1999	2000	2001
Russia	4,363	3,895	4,018	3,693	3,668
Spain	2,324	2,469	2,364	2,364	2,364
United Kingdom	2,611	2,309	2,254	2,254	2,254
France	2,243	2,371	2,151	2,151	2,151
Italy	1,745	1,701	1,746	1,746	1,746
Germany	1,303	1,419	1,289	1,289	1,289
Norway	1,593	1,401	1,176	1,176	1,176
Portugal	689	694	855	855	855
Denmark	754	585	479	479	479
Ukraine	480	694	550	345	699
Other countries	4,447	4,521	4,226	4,238	4,280
<b>Total Europe</b>	<b>22,552</b>	<b>22,059</b>	<b>21,108</b>	<b>20,590</b>	<b>20,961</b>

The countries leading the supply of fish products are Russia, Spain, the UK, France, Italy, Germany, and Norway. The total supply of fish and seafood in the top 10 countries accounted for approximately 80% of the supply in Europe. Obviously, these countries have led in food-utilisation of fish and seafood as well. The countries with a fish consumption of more than 1 million metric tons per year are Russia, France, Spain, Italy, the UK, and Germany. The annual fish and seafood consumption in the top 10 countries in Europe is 84% with the rest of countries only accounting for 16%.

#### 4.3.3.2 Utilisation of fish products

European countries use nearly 14 million metric tons of fish and seafood for human consumption annually, including fresh fish and various fish products.

Table 15: Domestic utilisation of fish products in top 10 European countries, 1997-2001, 1,000 MT (FAO 2001).

Country	Domestic Utilisation of fish products				
	1997	1998	1999	2000	2001
Russia	3,391	3,257	2,876	2,827	2,675
France	1,756	1,913	1,850	1,850	1,850
Spain	1,672	1,850	1,783	1,783	1,783
Italy	1,344	1,410	1,418	1,418	1,418
United Kingdom	1,312	1,278	1,290	1,290	1,290
Germany	1,210	1,262	1,193	1,193	1,193
Portugal	582	619	763	763	763
Ukraine	480	693	550	647	652
Poland	534	479	472	506	506
Netherlands	247	354	327	327	327
Other countries	2,307	2,356	2,279	2,300	2,223
<b>Total Europe</b>	<b>14,835</b>	<b>15,471</b>	<b>14,801</b>	<b>14,904</b>	<b>14,680</b>

Except Russia, the top 10 countries in Table 15 always have a deficit in fish and seafood trade. It means these countries usually import more seafood than they export. The deficit in fish and seafood trade of Europe is more than 3 million metric tons of various fish products annually.

Table 16: Average utilisation of fish products per capita in top 20 European countries, 1997-2001, kg/person/year (FAO 2001).

Country	Utilisation fish. seafood per capita				
	1997	1998	1999	2000	2001
Iceland	93.5	94.5	91.4	90.7	90.1
Portugal	58.5	62.1	76.4	76.2	76.1
Norway	51.4	53.7	51.5	51.2	51.0
Spain	42.0	46.4	44.7	44.7	44.7
Malta	39.8	36.9	38.7	37.8	37.6
Finland	34.7	33.6	32.4	32.1	32.1
France	30.0	32.5	31.3	31.2	31.1
Sweden	30.2	30.1	30.9	30.9	30.9
Denmark	24.8	26.6	26.7	26.6	26.5
Greece	27.3	25.5	25.1	25.1	25.1
Italy	23.4	24.5	24.6	24.6	24.7
United Kingdom	22.2	21.5	21.7	21.6	21.6
Belgium-Luxembourg	20.4	21.5	21.6	21.6	21.6
Lithuania	24.3	21.5	20.2	20.3	20.3
Estonia	19.3	18.2	21.6	21.8	22.1
Russian Federation	23.0	22.2	19.7	19.4	18.5
Netherlands	15.8	22.5	20.7	20.6	20.5
Switzerland	17.9	18.3	18.8	18.8	18.8
Latvia	13.8	12.7	17.2	19.5	19.5
Ireland	15.1	16.6	16.2	16.0	15.9
<b>Average Europe</b>	<b>20.2</b>	<b>20.7</b>	<b>20.8</b>	<b>21.0</b>	<b>21.0</b>

Average consumption of fish and seafood per capita of European people is more than 20 kg/year (FAO 2001). This number is much higher than the average of 15kg for the world as a whole. In general Western European countries prefer seafood to Eastern European countries. Table 16 illustrates the top twenty countries with highest average consumption of fish and seafood per capita in Europe. But this does not mean that these countries are big markets for exporters. For example, Iceland and Norway has a very high average consumption per capita but these countries are also big exporters of fish and seafood. Moreover, these countries have a small population making them less lucrative as export markets for other countries.

#### 4.4 Lifestyle and demographic trends in Europe

Europe is a developed continent, especially EU member countries. Healthy eating is a top concern for citizens of developed countries. Seafood and fish are acknowledged to offer many health benefits. It provides a major source of protein, does not make heart disease like red meat. This has led to a decline in the consumption of red meat in many key markets and seafood and fish have stepped into the gap. Red meat consumption continues to fall and the interest as healthy lifestyles increases. In addition, the population in Europe is aging constantly. The average life expectancy is now substantially longer than previously. One of the most fundamental requirements of older consumers is a healthy diet, for this reason, fish has much to offer as a natural food with substantial nutritional benefits (Hardy 2001).

Though fresh fish at one time dominated European market, this is now changing. There are many changes of demography and society in developed countries. Consumers are spending less time in the kitchen preparing food; there are many smaller households and individual tastes; hectic lifestyles are increasing and the numbers of working women are growing. This has led to an increased supply of prepared meals. These also require the offering of more flexible snack units (Hardy 2001).

There is a significant drive throughout many European markets towards increased consumption of added-value products such as fish ready meals and fish delicatessen prepared products. The result being that there is greater penetration of part or secondary processed fresh fish, such as fillets, steaks and other portions in the market that have traditionally been dominated by the consumption of whole fish.

#### **4.5 Target markets for exporters**

The aim of this study is to discover potential target markets. In order to do this markets by countries were analysed and sorted. The criteria used to do this are total consumption, import value of fish commodities, deficits of seafood trade, and growth in import of fish commodities. Criteria such as population, consumption per capita and growth of consumption were used to analysis potential markets.

##### *4.5.1 Target and potential markets*

While consumption, import value and deficits in trade of seafood are the most clear signs of potential target markets; population, growth of import, growth of consumption and consumption per capita are criteria for reference. The total consumption, total population and consumption per capita are closely related.. The growth of import and consumption do not explain by themselves the size of markets. Table 17 shows main criteria for choosing target markets.



Table 17: Main criteria for choosing target markets sorted by country (FAO 2001).

	Country	Total import Value 2001,1,000US\$	Country	Deficit of trade, Import-Export, 2001, 1,000US\$	Country	Total consumption 2001,1000 MT
1	Spain	3,741,775	Italy	2,351,505	Russian	2,675
2	France	3,094,568	France	2,060,247	France	1,850
3	Italy	2,738,876	Spain	1,878,508	Spain	1,783
4	Germany	2,375,324	Germany	1,328,740	Italy	1,418
5	UK	2,268,430	UK	949,227	UK	1,290
6	Denmark	1,791,200	Portugal	662,540	Germany	1,193
7	Netherlands	1,241,580	Benelux	526,026	Portugal	763
8	Benelux	1,070,942	Switzerland	367,042	Ukraine	652
9	Portugal	939,410	Sweden	219,955	Poland	506
10	Sweden	735,259	Austria	173,975	Netherlands	327
11	Norway	667,882	Poland	123,154	Sweden	273
12	Poland	369,919	Finland	122,258	Greece	266
13	Switzerland	369,606	Greece	100,539	Benelux	231
14	Russian	350,043	Belarus	82,436	Norway	229
15	Greece	313,100	Czech Republic	56,974	Finland	166
16	Austria	182,533	Ukraine	50,096	Denmark	141
17	Finland	136,838	Hungary	43,927	Switzerland	135
18	Ireland	128,062	Serbia&Mont	35,907	Czech Republic	130
19	Belarus	98,049	Romania	34,534	Austria	117
20	Lithuania	92,244	Lithuania	31,097	Lithuania	75

In Table 17, while the total consumption column is the total quantity of fish products for food utilisation, import value and deficit of trade are the total values of commodities used for both food and non-food.

The total import value explains the size of the market so it is the most important criteria to determine the target market. Following this are deficit of trade and total consumption. Deficit of trade, export value minus import value, should be given a higher priority in level than the total consumption. Some countries such as Russia and Norway have high total consumption but they are not only self-sufficient but also big export countries.

In general the countries that have high import; high deficit of trade and high total consumption should be targeted as potential markets for exporters. According to Table 17, target markets are Spain, France, Italy, Germany, United Kingdom, Belgium and Luxembourg, Portugal, Sweden and Switzerland. The priority levels of these markets are different.

Based on the results in Table 17 and the population of each country, the target market and level of priority were calculated and the results are shown in Table 18. Pointed method by different level of priority was used to calculate score column in Table 18.

Table 18: Target markets and priority level by countries.

	Country	Score	Level
<b>1</b>	<b>France</b>	<b>206</b>	<b>A</b>
<b>2</b>	<b>Spain</b>	<b>202</b>	<b>A</b>
<b>3</b>	<b>Italy</b>	<b>198</b>	<b>A</b>
<b>4</b>	<b>Germany</b>	<b>183</b>	<b>A</b>
<b>5</b>	<b>UK</b>	<b>175</b>	<b>A</b>
<b>6</b>	<b>Portugal</b>	<b>137</b>	<b>A</b>
<b>7</b>	<b>Benelux</b>	<b>130</b>	<b>A</b>
<b>8</b>	Sweden	112	B
<b>9</b>	Poland	110	B
<b>10</b>	Netherlands	102	B
<b>11</b>	Russian	94	B
<b>12</b>	Switzerland	85	B
<b>13</b>	Denmark	84	B
<b>14</b>	Greece	80	B
<b>15</b>	Norway	63	C
<b>16</b>	Austria	62	C
<b>17</b>	Finland	57	C
<b>18</b>	Ukraine	40	C
<b>19</b>	Belarus	35	C
<b>20</b>	Czech Republic	29	C
<b>21</b>	Romania	17	C
<b>22</b>	Serbia & Montenegro	16	C
<b>23</b>	Ireland	15	C
<b>24</b>	Hungary	15	C
<b>25</b>	Lithuania	8	C

The score column was calculated based on Table 17 and the population column of Table 19 below. Every criterion was pointed depending on the level of priority.

As shown by Table 18 the top eight countries are France, Spain, Italy, Germany, the UK, Portugal, Belgium and Luxembourg with the biggest potential for the entrance of seafood exporters. Vietnamese seafood exporters have been present in these markets but with a low market share. Belgium and Luxembourg markets have are the biggest markets presently for Vietnamese exporters into Europe. Vietnamese exporters need support to enter the big markets such as France, Spain, Germany, United Kingdom and Italy.

The markets at level B are not as interesting as markets at level A. These markets, on the other hand, can be exploited in future, especially Russia, Poland, Sweden and Switzerland.

Some markets at level C such as Ukraine, Belarus, Czech Republic, Hungary and Romania are traditional markets of Vietnam. They had a close relationship with Vietnam before the collapse of the Soviet Union. Vietnamese exporters have a good knowledge of these markets. It is necessary to think and prepare right now for entrance into other markets.

Table 19: Growth rate, population and consumption per capita of selected markets (FAO 2001).

	Country	Growth of import 1995-2001	Growth Consumption 1997- 2001	Population (million people) 2001	Consumption per capita 2001, kg/year
1	Russian	0.20%	-4.60%	144.9	18.5
2	Germany	-0.80%	-0.30%	82.3	14.5
3	France	-0.70%	1.00%	59.5	31.1
4	UK	2.30%	-0.30%	58.9	21.6
5	Italy	2.50%	1.10%	57.5	24.7
6	Ukraine	-9.50%	6.30%	49.3	13.3
7	Spain	2.60%	1.30%	40.9	44.7
8	Poland	9.90%	-1.10%	38.7	13.1
9	Romania	11.90%	5.70%	22.4	2.4
10	Netherlands	0.50%	5.80%	16	20.5
11	Greece	5.30%	-1.60%	10.9	25.1
12	Benelux	-0.50%	1.40%	10.7	21.6
13	Serbia and Montenegro	9.00%	-6.70%	10.5	2.3
14	Czech Republic	0.70%	-0.60%	10.3	12.7
15	Portugal	3.00%	5.60%	10	76.1
16	Belarus	13.80%	-11.20%	10	6.4
17	Hungary	1.00%	0.50%	10	4.4
18	Sweden	4.30%	0.40%	8.9	30.9
19	Austria	-0.40%	0.30%	8.1	14.5
20	Switzerland	-1.90%	1.10%	7.2	18.8
21	Denmark	1.40%	1.50%	5.3	26.5
22	Finland	2.50%	-1.40%	5.2	32.1
23	Norway	4.40%	0.20%	4.5	51
24	Ireland	4.30%	1.70%	3.9	15.9
25	Lithuania	16.80%	-3.60%	3.5	20.3

Table 19 is useful for more than just a reference. The countries listed in the A group have both high consumption of fish per capita and large population and are therefore stable consumers of fish products.

The information of the twenty-five markets shown in Tables 18 and 19 was used as a reference. The truly target markets should be combined with other criteria. However Table 18 is good to select target and potential markets.

## 4.5.2 Competitors inside Europe

Table 20: European big exporters, selected by country (FAO 2001).

	Country	Export Value 1,000\$	Country	Surplus of trade Export-Import 1,000US\$	Country	Growth of Export (01-95)
1	Norway	3,385,263	Norway	2,717,381	Romania	58%
2	Denmark	2,676,674	Iceland	1,215,228	Belarus	39%
3	Spain	1,863,267	Russian	1,180,198	Malta	20%
4	Russian	1,530,241	Denmark	885,474	Greece	15%
5	Netherlands	1,430,415	Ireland	293,904	Albania	10%
6	UK	1,319,203	Netherlands	188,835	Spain	10%
7	Iceland	1,280,499	Estonia	83,558	Latvia	9%
8	Germany	1,046,584	Latvia	60,611	Benelux	7%
9	France	1,034,321	Albania	1,660	Estonia	6%
10	Benelux	544,916	Croatia	-1,268	Lithuania	6%
11	Sweden	515,304	Moldova	-8,497	Slovenia	5%
12	Ireland	421,966	Bulgaria	-8,621	Finland	5%
13	Italy	387,371	Malta	-9,776	Croatia	4%
14	Portugal	276,870	Bosnia	-15,579	Iceland	4%
15	Poland	246,765	Slovenia	-22,573	Norway	3%
16	Greece	212,561	Slovakia	-31,025	Sweden	3%
17	Estonia	128,278	Lithuania	-31,097	Germany	2%
18	Latvia	106,535	Romania	-34,534	United Kingdom	2%
19	Croatia	64,138	Serbia	-35,907	Hungary	2%
20	Lithuania	61,147	Hungary	-43,927	Italy	2%

The export column explains the market share of the exporting country. The surplus of trade column shows the strength of the seafood exporter, this emphasises whether the fishery export is important of the country or not. The growth column is calculated by export quantity. This column reveals which countries are potential competitors for Vietnam. However, countries with high export growth are not strong and potential competitors because this depends on the quantity that the country is available to export. Based on Table 20 the competitors may be determined as follows:

Norway, Iceland, Russia, Denmark, Ireland, Spain, Netherlands and Estonia.

The countries, which could become strong competitors in the future, are Romania, Belarus, Malta, Faroe Islands, Greece and Albania.

However the strongest competitors to Vietnamese exporters are countries out of Europe. They are China, Thailand, Chile, Mexico, India, Bangladesh, and United States. Table 21 shows the production of fish products in these countries.

Table 21: Fishery production of competitors, by selected years, 1,000 MT (FAO 2001).

Country	1980	1985	1990	1995	2000	2001
China	5,807	8,789	14,667	32,731	49,636	51,006
India	2,445	2,839	3,880	5,017	5,785	6,065
United States	3,872	5,043	5,936	5,712	5,216	5,443
Chile	2,893	4,987	5,424	7,890	4,973	4,663
Thailand	1,800	2,233	2,790	3,591	3,643	3,606
Bangladesh	647	766	846	1,109	1,661	1,687
Mexico	1,285	1,256	1,447	1,405	1,404	1,522
<b>Total</b>	<b>18,749</b>	<b>25,915</b>	<b>34,990</b>	<b>57,455</b>	<b>72,317</b>	<b>73,992</b>

China has been the biggest country in fishery production in recent years. Total production of fisheries reached to 51 billion MT in 2001, accounting for 36 % of worldwide production. The average growth rate of production of this country is 10.5% in the period 1980-2001.

Annual fishery production volume of United States is more than 5 billion MT, more than 4 billion MT for Chile, and more than 1 billion MT for Mexico. India, Bangladesh, and Thailand are developing countries with impressive growth in recent years. The growth rate is around 4% in the period 1980-2001 in these countries. These are strong competitors of Vietnam, especially in shrimp products. See Table 21 for more detail.

#### 4.6 Summary

Norway, Denmark, Iceland, the Faroe Islands and Russia are big countries in fishery production.

European markets consume a huge amount of seafood products, about 14 million MT of fish and fish products annually. Consumption of seafood per capita of European people is more 20 kg per year. Import supply accounts for 17% total seafood supply in the whole of Europe, with 60% for European Union countries. European countries import seafood worth more than 20 billion US\$ annually.

Fresh and frozen seafood products are the most items imported into Europe both in volume and value terms. Value added products are a new trend in seafood consumption.

The target markets for exporters are France, Spain, Italy, Germany, the UK, Portugal, Belgium, and Luxembourg. The markets such as Sweden, Poland, Netherlands, Switzerland, Denmark, Greece, and Russia have potential to be penetrated in the future.

The strong export countries into European are Thailand, India, Bangladesh, the US, China, Mexico, and Chile.

## 5 EUROPEAN SHRIMP MARKET

This chapter examines current market trends in European shrimp markets to discover the potential markets for exporters. Europe accounts for about one third of shrimp import in value terms, almost equalling in importance the US shrimp markets and overcoming Japanese markets in value terms in recent years. In 2001, import value in US\$ of shrimp in US markets was 3.7 billion US\$, 3.6 billion US\$ in Europe, and 2.7 billion US\$ in Japan.

The term ‘shrimp’ and ‘prawn’ have different meanings depending on the markets. Frequently these two terms are used interchangeably. In many markets ‘prawn’ refers to large marine shrimp. In most cases, freshwater shrimp (or prawns) are normally sold as ‘prawns’. In some cases, the Norway lobster *Nephrops norvegicus* is referred to as a ‘prawns’ (Anderson 2003).

There are two forms of shrimp commodities imported into European countries: fresh and frozen shrimp, and cooked and peeled shrimp. Traditionally the cooked and peeled form is mainly for consumption, but in recent years there have been increased consumption of self-on shrimp in Europe (Josupeit 1999). The number of shrimp supplying countries is more than 100. There is substantial intra-European trade, especially imports from Iceland and Norway. The Asian and Latin American countries with tropical shrimp are the major supplier of European markets in recent years, especially Thailand, China, India, and Ecuador.

European countries are more heterogeneous in their imports. Europe can be separated into north and south when it comes to shrimp. Northern countries usually consume small, coldwater shrimp. Southern or Mediterranean markets prefer larger, warm water prawns (Anderson 2003). Germany, the Netherlands, and Belgium purchase native brown common shrimp of *Cragon Cragon*, while the UK and France tend to purchase northern prawn of *Pandalus borealis*. Colder water shrimp are largely captured for domestic demand, Greenland and Faroe Islands export to northern Europe, and Argentina to southern Europe. Ecuador is one of the main suppliers to northern European countries.

The countries with highest production and export shrimp in Europe are Norway, Iceland, the Faroe Islands, and Russia. The markets with high demand in shrimp are Spain, Denmark, the UK, France, Italy, the Netherlands, Belgium, and Germany. These countries imported 477,000 MT in 2001, accounting for 71% of the total import quantity of Europe. Equivalently 3.1 billion US\$ on 87% of the total import shrimp to Europe in value terms.

## 5.1 European shrimp production

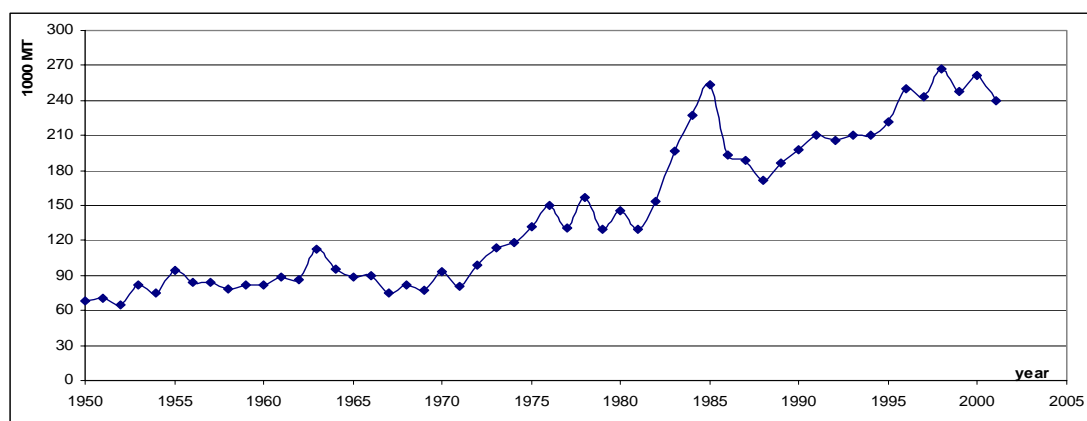


Figure 15 : Historical shrimp production in Europe in the period 1950-2001 (FAO 2001).

European shrimp production has expanded very impressively during the past few decades. In 2001 total catches reached 239,000 MT, nearly two times the catches in 1980. The growth rate of shrimp catches is 2.7% in the period between 1980-2001. Despite the strong expansion, European shrimp production continues to be a small fraction of world shrimp production. In the past decade the share of European shrimp production in total production was between 6 to 7 %. In 2001, the fraction is 6%. Moreover, the average growth rate of shrimp production of Europe in the period between 1980-2001 is 2.7% which is also lower than the worldwide average of 4.2%.

Table 22: European shrimp production by species, 1,000 MT (FAO 2001).

Species	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Northern prawn	138	148	140	156	175	161	165	171	182	164
Common shrimp	26	27	32	31	32	38	31	37	33	32
Deepwater shrimp	26	19	20	14	13	13	14	13	15	18
Other	15	17	19	21	31	32	56	26	31	25
<b>TOTAL</b>	<b>205</b>	<b>211</b>	<b>210</b>	<b>222</b>	<b>251</b>	<b>243</b>	<b>266</b>	<b>248</b>	<b>261</b>	<b>239</b>

The main species is the Northern prawn *Pandalus borealis*, a coldwater shrimp. This is also the main species responsible for the increase experienced by European shrimp production during the past decades. The volume catch of this shrimp expanded from 138 MT in 1992 to 164 MT in 2001. The top countries with the highest *Pandalus borealis* catches are Norway with 66,000 MT, Iceland with 30,000 MT, Russia with 20,000 MT, Faroe Island with 16,000 MT, and Estonia with 11,000 MT in 2001.

The second major important species is common shrimp *Crangon crangon*, another coldwater species. The quantity of catches of *Crangon crangon* is from 26.000 MT in 1992 to 32.00 MT in 2001. The major countries catching this species are Netherlands with 14,000 MT, Germany with 12,000 MT, United Kingdom with 2,000 MT, Denmark with 2,000 MT, and Belgium with 1,000 MT in 2001.

*Parapenaeus longirostris*, deepwater rose shrimp, is unique warm water species caught in Europe. This species has third quantity of caches in European with nearly

18.000 MT in 2001. The species *Parapenaeus longirostris* is very fluctuating in production during the past decades. The countries having high volume in this species are Spain with 9.000 MT, Italy with 7,000 MT, and Portugal 1,500 MT in 2001.

Table 23: European shrimp production by country, 1,000 MT (FAO 2001).

Country	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Norway	49	49	38	39	42	42	57	64	66	66
Iceland	47	56	75	84	90	83	63	43	34	31
Spain	14	15	17	17	25	28	55	25	22	27
Russia	23	25	10	9	13	5	10	18	37	21
Faeroe	10	12	9	9	11	11	13	15	13	16
Netherlands	10	10	10	14	12	13	12	14	11	14
Germany	12	13	17	12	16	20	15	19	17	13
Estonia	NA	NA	1	2	3	5	7	12	13	11
Italy	20	14	14	11	10	10	6	7	12	10
Denmark	11	7	7	11	11	12	11	8	8	7
Lithuania	0	NA	1	1	2	2	3	4	6	5
Portugal	0	0	1	1	2	2	3	4	3	3
UK	1	2	1	3	3	1	3	3	2	3
Latvia	NA	NA	0	1	1	1	1	3	3	3
Greece	4	4	3	3	4	4	3	3	3	3
Sweden	2	2	3	3	2	3	2	2	2	2
Others	2	2	3	3	4	3	2	3	8	3
<b>Total</b>	<b>205</b>	<b>211</b>	<b>210</b>	<b>222</b>	<b>251</b>	<b>243</b>	<b>266</b>	<b>248</b>	<b>261</b>	<b>239</b>

The two countries, which play a major role in shrimp catches, are Norway and Iceland. The total catches of the two countries accounted for over 40% of European production in 2001. In recent years Norway is the top country in shrimp catches in Europe with 66,000 MT in 2001.

In contrast, from 1998 Iceland has experienced a drop in shrimp production. In the period 1993-1997, Iceland experienced a rapid expansion in shrimp production and left Norway in second place. The peak quantity that Iceland reached is nearly 90,000 MT in 1996. In 2001, the catch was only 30,000 MT, a reduction of two-thirds in five years.

Spain is has the third largest shrimp production in Europe. The peak quantity of 55,000 MT was reached in 1998. In recent years the volume of shrimp catches is just over 20,000 MT per year. The main species caught by Spain are *Parapenaeus longirostris* accounting for 9,000 MT and *Pandalus borealis* accounting for 1,700 MT in 2001.

In general, shrimp production in Europe is fluctuating. The total quantity caught in the past 10 years ranges from 200,000 MT to 250,000 MT per year.



## 5.2 European shrimp imports

United States, Japan and the European Union are countries that utilise a big portion of the world's shrimp. Total import quantity of these countries accounted for 76% of the world's production in 2001. In 2001, total import of worldwide shrimp was about 1.7 million US\$, in which the European Union import share was 35%, US was 24% and Japan 17% of the worldwide production.

The total importing commodities of shrimp in the European continent accounted for 40% of the worldwide production in 2001. Nearly 90% of the shrimp was imported into Europe went to 15 countries in EU.

Figure 16 shows the impressive increase of shrimp importation into Europe in the past few decades.

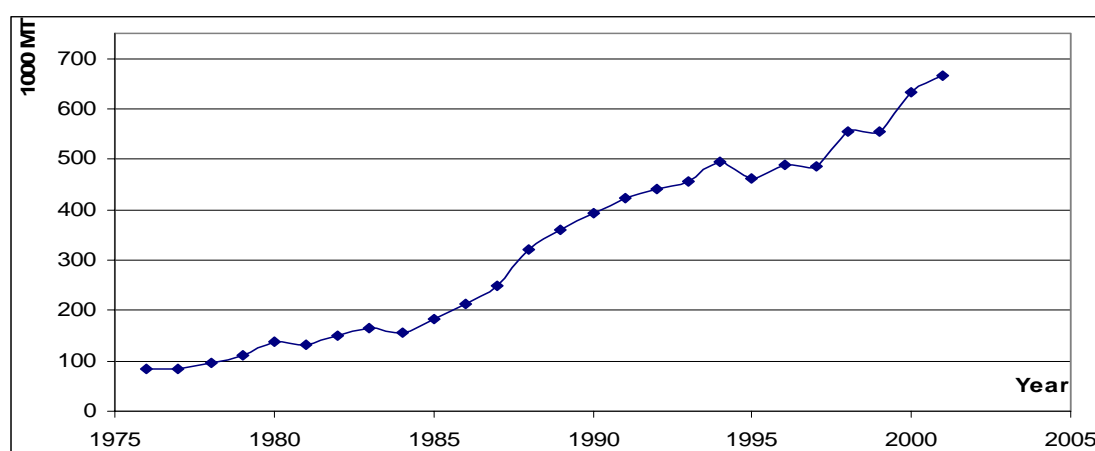


Figure 16: Historical shrimp import volume into Europe, 1976-2001 (FAO 2001).

In 2001, the total quantity of shrimp import into Europe was 667 thousand MT, more than 1.5 times higher than 1992. The average growth of imports in period between 1995-2001 is about 4.2%. This growth is very high compared to 3.7% for the whole the world, 4% in the US, and only 0.1% in Japan. The European market is an important market for shrimp exporters.

The 15 countries in the European Union always have the biggest demand of shrimp import. European Union members have imported nearly 90% of the total volume of shrimp imported into the European continent. Table 24 shows the biggest importers of shrimp, most of them are European Union members.

Table 24: Total European imports of fresh/frozen/chilled and prepared shrimp by country, 1,000 MT (FAO 2001).

Country	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Spain	83	92	109	82	85	79	103	94	115	128
Denmark	71	65	77	65	77	77	72	76	95	93
UK	54	52	58	57	61	60	73	69	78	82
France	66	75	61	65	68	66	74	74	68	74
Italy	37	31	34	33	39	34	46	45	50	57
Netherlands	20	20	32	32	31	33	41	37	40	43
Iceland	4	4	2	4	3	5	13	28	35	38
Belgium	21	22	28	31	30	31	30	34	32	33
Germany	24	22	26	23	23	24	26	24	28	29
Sweden	19	20	22	17	21	21	20	21	21	22
Norway	20	28	14	19	19	14	15	18	28	19
Portugal	11	11	11	10	11	12	12	13	12	13
Russia	NA	NA	1	2	NA	7	7	NA	8	13
Others	11	14	20	21	21	22	22	22	24	24
<b>TOTAL</b>	<b>441</b>	<b>456</b>	<b>495</b>	<b>463</b>	<b>488</b>	<b>485</b>	<b>554</b>	<b>556</b>	<b>632</b>	<b>667</b>

The countries with the highest shrimp imports are Spain with 19%, Denmark with 14%, the UK with 12%, France 11% and Italy with 9% of the total import of shrimp into Europe in 2001. Spain is the main shrimp importer among European countries importing between 80,000 and 130,000 MT of all shrimp commodities per year. Fresh and frozen are major product terms imported into Spain with nearly 90% of total shrimp import quantity. Spanish importers had to pay between 550 million US\$ and 770 million US\$ per year for importing shrimp.

France, Denmark and the UK are the next major shrimp importers. The amount of shrimp imported into these countries ranges between 55,000 MT and 90,000 MT each per year. Frozen shrimp is the main product imported into these countries. In terms of value, these countries spent between 300 million US\$ to 500 million US\$ each per year to import shrimp.

Although Denmark is the second largest shrimp importer, most of this import is just passing through the country for re-export. The items imported into Denmark are mostly raw materials. This is the reason why Denmark is the second largest importer in terms of quantity with 930 MT but the fifth largest importer in terms of value spending 275 million US\$ in 2001. This also happens with Iceland. Iceland is in seventh position in terms of quantity with 38,000 MT but in fourteenth position in terms of value spending 42 million US\$ in 2001.

All other European countries reported positive trends in importing shrimp over 10 years 1992-2001, sometimes more than doubling their imports.

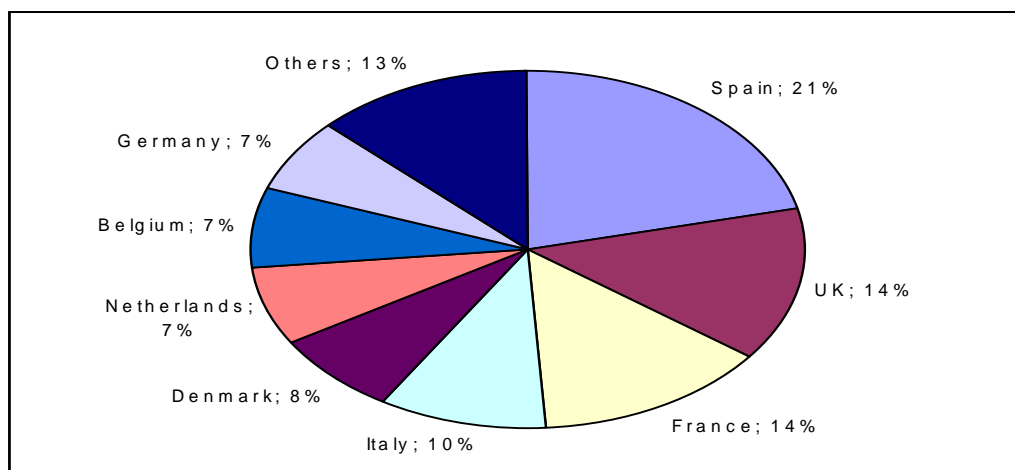


Figure 17 : Import value share of shrimp in Europe in 2001 (FAO 2001).

In the 10 years between 1992-2001, the value of shrimp import into Europe grew strongly from 2.8 billion US\$ in 1992 to 3.6 billion US\$ in 2001. The average growth of the period is about 2.7% annually.

In terms of value the country with the largest import share of shrimp is Spain with 21 % of the total European shrimp import, with the UK and France following with 14% each; Italy with 10%; Denmark with 8%; and Germany, Belgium, and Netherlands with 7% each.

There are two types of shrimp imported into Europe: fresh and frozen shrimp, and cooked and peeled shrimp. Traditionally consumption is mainly of cooked and peeled shrimp, but in recent years the consumption of shell-on shrimp has expanded in Europe (Josupeit 1999).

According to the classification of the FAO, shrimp commodities imported into Europe consist of three types (frozen, prepared or preserved, and fresh or chilled). Table 25 shows the impressive increase in volume of import of these commodities in Europe in the past few years.

Table 25 : European import volume of shrimp by product, 1992-2001, 1,000 MT (FAO 2001).

Shrimp/prawns	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Frozen	306	337	357	332	348	337	398	395	461	497
Prepared	116	101	112	106	114	118	124	127	140	141
Fresh	19	18	26	25	26	29	32	34	31	30
<b>TOTAL</b>	<b>441</b>	<b>456</b>	<b>495</b>	<b>463</b>	<b>488</b>	<b>485</b>	<b>554</b>	<b>556</b>	<b>632</b>	<b>667</b>

Frozen shrimp has always has the largest share in total shrimp commodities imported into Europe. In 2001, the total of these three commodities imported into Europe reached 667 thousand MT, in which frozen shrimp accounted for 74%, prepared or preserved 21% and fresh or chilled 4%.

Fresh, frozen, and chilled shrimp are whole-shrimp products. These products are the main imports of countries. Table 26 shows the biggest importers of whole-shrimp in Europe.

Table 26: Import of fresh/frozen shrimp to Europe by country, in MT (FAO 2001).

Country	1995	1996	1997	1998	1999	2000	2001
Spain	80,998	83,576	77,956	102,046	93,365	113,693	126,755
Denmark	41,619	53,711	54,691	48,319	50,141	63,859	66,192
France	56,353	58,514	56,019	63,095	61,792	56,143	61,804
Italy	29,140	34,604	29,966	40,716	39,423	43,969	51,315
UK	27,523	25,830	26,216	37,038	31,834	36,590	38,122
Netherlands	25,883	23,905	24,627	33,199	30,291	31,258	33,638
Belgium	24,225	23,292	23,585	22,093	25,949	24,779	26,693
Germany	11,226	10,632	10,198	11,994	11,964	14,731	15,974
Norway	17,296	16,801	12,458	12,298	16,094	24,943	15,758
Portugal	10,307	10,652	11,125	12,053	12,594	11,377	12,926
Sweden	9,935	13,582	11,705	11,404	11,973	11,183	11,150
Poland	6,985	5,480	4,565	4,519	3,878	4,198	3,606
Greece	1,322	2,401	2,111	1,983	2,013	2,312	3,181
Switzerland	1,919	2,008	1,898	2,489	2,128	2,635	2,875
Ireland	903	984	1,016	1,011	1,675	1,431	1,622
Austria	530	649	601	642	719	629	717
Others	10,435	7,161	17,513	25,141	33,254	48,436	54,277
<b>TOTAL</b>	<b>356,599</b>	<b>373,782</b>	<b>366,250</b>	<b>430,040</b>	<b>429,087</b>	<b>492,166</b>	<b>526,605</b>

Whole-shrimp products imported into Europe increased from 356,599 MT in 1995 to 526,605 MT in 2001. The growth rate is 5.3% in this period.

Spain, Denmark, France, Italy, Belgium and Netherlands are the main markets for fresh and frozen shrimp. Denmark is the main exporter of fresh and frozen shrimp, almost exporting 64,000 MT in 2001, accounting for 12% of the European imports of this product.

European exporters supply more than 50% of the total import quantity of this product annually. The rest of the supply was from countries such as Thailand, India, China, Bangladesh, Ecuador, and Mexico. In 2001, Europe imported 259,000 MT of this product from outside the continent, accounting for 49%.

Although prepared or preserved shrimp products do not have an important position like frozen products in the European markets, the trend of the markets will be towards these products in the near future due to changing demographics and societal environments. European countries spent nearly 1 billion \$US importing prepared shrimp, accounting for 21% of the total import value. Table 27 shows the biggest importer of prepared shrimp in Europe, by quantity.

Table 27: European imports of prepared shrimp by importing country, MT (FAO 2001).

Country	1995	1996	1997	1998	1999	2000	2001
UK	29,528	34,854	34,090	36,115	37,481	41,279	44,211
Denmark	23,618	22,921	22,632	23,322	26,034	30,987	26,955
Germany	11,994	12,753	14,158	14,173	11,910	12,895	12,530
France	8,896	9,150	9,675	11,284	11,942	11,575	12,130
Sweden	7,280	7,425	9,102	8,629	8,961	10,108	11,304
Netherlands	6,478	6,845	7,943	7,946	6,861	9,064	8,873
Belgium	7,210	7,045	7,733	8,017	7,852	7,313	6,064
Italy	3,641	3,925	4,257	5,030	5,681	5,571	5,972
Norway	1,622	1,951	1,935	2,379	2,355	3,099	3,491
Switzerland	2,142	2,354	2,249	2,134	2,364	2,468	2,580
Finland	1,651	2,032	1,975	2,002	2,055	1,941	2,414
Spain	868	1,207	914	884	856	1,016	1,053
Ireland	139	150	177	240	291	400	630
Austria	441	694	572	512	471	633	605
Portugal	170	194	391	330	352	401	523
Greece	258	251	169	223	304	202	307
Poland	202	136	167	274	397	338	297
Others	237	384	221	444	489	705	794
<b>TOTAL</b>	<b>106,375</b>	<b>114,271</b>	<b>118,360</b>	<b>123,938</b>	<b>126,656</b>	<b>139,995</b>	<b>140,733</b>

Imports of prepared shrimp, mainly cooked and peeled, have grown over the past decade. However prepared shrimp has a lower share of import than imports of fresh and frozen shrimp. The prepared shrimp import share is between 20% and 24% in total quantity imported.

Cooked and peeled shrimp are a rather traditional product, especially in the northern part of the continent. In Germany, the UK, and Sweden imports of fresh and frozen are usually in parallel with prepared shrimp in terms of import quantity (Josupeit 1999).

Iceland is the main exporter of prepared shrimp to Europe, importing almost 24,00 MT in 2001, accounting for 17% of Europe imports of this product. Other countries supplying Europe with the bulk of prepared items are Norway, Greenland and Netherlands. These four countries usually export to other European countries between 65,000 to 73,000 MT annually, accounting for more than 50% of European import of this type of shrimp.

The UK is by far the main importer of prepared shrimp accounting for 44,000 MT in 2001. Denmark is in second importing 27,000 MT, and Germany and France 12,000 MT each.

### 5.3 Importing price

The price depends on the added value accumulated into shrimp products. This means that prepared products must have a higher price per unit than fresh or frozen items. Fresh products have the lowest price. Figure 18 explains the different and fluctuating importing price of shrimp products.

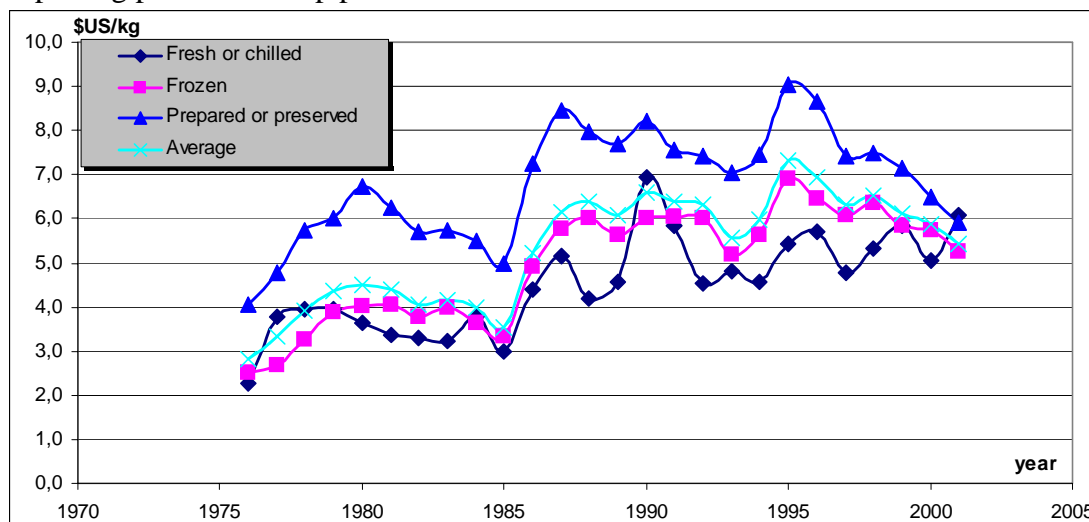


Figure 18: Fluctuating unit value in the period 1976-2001.

The importing price is different among shrimp commodities. The highest per-unit value is prepared or persevered shrimp. The frozen price is usually slightly higher than the fresh one. The shrimp price fluctuates annually. Prepared products have the highest as well as the most fluctuated importing price.

The importing price unit was calculated by dividing the total import value with total import quantity. Table 28 compares in detail three shrimp products in recent years.

Table 28: The unit value of certain commodities 1995-2001, US\$/kg.

Shrimp and prawn	1995	1996	1997	1998	1999	2000	2001
Fresh or chilled	5.42	5.70	4.78	5.32	5.83	5.04	6.07
Frozen	6.90	6.45	6.08	6.34	5.83	5.75	5.26
Prepared or preserved	9.03	8.66	7.43	7.49	7.15	6.50	5.92
<i>Average</i>	<i>7.31</i>	<i>6.93</i>	<i>6.33</i>	<i>6.54</i>	<i>6.13</i>	<i>5.88</i>	<i>5.44</i>

In recent years the price of shrimp has decreased marginally , especially the price of prepared shrimp.

In 2001 the fresh or chilled shrimp had the highest value per unit at 6 US\$/kg, second was prepared shrimp at 5.9US\$/kg and third was frozen shrimp at 5.3 USUS\$/kg.

The fall in shrimp price is the result of the booming shrimp aquaculture industry, especially shrimp aquaculture in Thailand, Ecuador, India, and Bangladesh.

The average shrimp price is very different between countries on the European continent. The difference is due to demand, weight of items consumed, and delivery

condition. Table 29 illustrates the varying price among countries. The numbers are average price of three shrimp commodities: frozen, fresh, and prepared items.

Table 29: The average import unit value of frozen/fresh/prepared shrimp by country, 1995-2001, US\$/kg.

Country	1995	1996	1997	1998	1999	2000	2001
Austria	11.30	14.92	12.88	11.88	13.46	12.05	11.07
Switzerland	11.71	13.35	12.53	11.41	12.32	11.25	10.74
Germany	9.63	10.92	10.32	8.99	9.65	8.99	8.63
Belgium	8.37	8.81	8.52	7.90	8.79	8.43	8.34
Portugal	7.17	8.16	7.74	7.17	7.92	7.37	7.98
Greece	7.63	7.97	8.13	6.47	8.28	7.60	7.56
France	6.89	7.69	7.29	6.97	7.44	6.92	7.31
Ireland	5.05	7.96	8.43	6.92	7.53	6.92	7.04
Italy	7.63	8.00	7.53	7.54	7.36	6.89	6.95
UK	6.97	8.02	7.57	7.58	6.95	6.99	6.93
Spain	4.72	7.56	7.12	6.76	6.70	6.32	6.69
Netherlands	5.80	6.97	6.81	5.93	6.96	6.38	6.41
Finland	6.26	9.02	7.64	5.75	5.98	5.96	5.51
Sweden	5.42	6.79	6.45	5.37	5.63	5.53	5.08
Denmark	4.34	5.58	5.09	4.10	4.08	3.99	3.51

Table 29 reveals the weight-consumption of shrimp. The countries having high average prices such as Austria, Switzerland, Germany, and Belgium usually imported high amounts of prepared or preserved shrimp in comparison with other countries. These countries have a trend of consuming commodities with high added value.

In contrast, some other countries such as Denmark, Sweden, and Finland fresh and frozen were imported much more than prepared shrimp. Most of the shrimp imported into Denmark was used to re-export. So Denmark is a big country for importing shrimp as raw material. Tables 30 and 31 show the import unit price of fresh and frozen shrimp in typical markets. The unit price explains the demand of each product in these markets.

Table 30: Import unit value of fresh or chilled shrimp by country, 1995-2001, US\$/kg.

Country	1995	1996	1997	1998	1999	2000	2001
Switzerland	16.4	15.9	13.5	13.9	13.1	11.6	11.5
Austria	16.1	17.4	15.1	17.2	13.3	12.6	11.1
Czech Republic	7.8	10.8	8.0	10.2	9.7	12.0	10.6
Spain	14.7	11.8	10.4	11.5	10.5	10.0	10.6
Belgium	9.9	10.7	9.1	9.6	10.1	8.0	9.9
Germany	12.4	12.1	11.8	12.5	11.1	10.1	9.6
Hungary	0.0	0.0	6.8	15.0	5.0	9.0	9.3
Italy	12.3	12.0	10.8	11.2	9.9	9.0	8.5
France	7.6	8.1	5.8	6.5	7.2	6.7	8.0
Slovenia	6.5	6.2	5.5	5.8	6.0	6.1	7.8
Greece	12.6	10.7	8.4	10.3	5.8	9.3	7.5
UK	4.7	5.5	12.0	5.2	4.4	7.8	7.5
Finland	49.7	16.3	13.1	8.5	16.3	9.0	7.1
Norway	2.4	3.2	7.0	3.3	4.2	1.7	6.8
Ireland	2.5	2.9	3.7	8.5	5.8	5.1	6.6
Sweden	4.8	5.6	4.1	4.3	5.1	4.5	4.7
Portugal	6.9	10.9	11.2	8.6	10.1	7.8	4.2
Denmark	4.0	3.8	2.2	2.7	4.6	2.9	4.2
Netherlands	4.2	3.7	2.3	2.9	3.9	3.0	3.6

In the recent years, the price of fresh shrimp has declined slightly in every market. Switzerland, Austria, the Czech Republic, and Spain have the highest price of fresh shrimp, more than 10 US\$ per kg. The fresh shrimp price in Belgium, Germany, Hungary, Italy, and France markets is about 8 and 9 US\$ per kg. The markets of the Netherlands, Denmark, Portugal, and Sweden have the lowest price of fresh shrimp. The reason could be that these countries have their own supply or have a low demand for fresh shrimp products.



Table 31: Import unit value of frozen shrimp by country, 1995-2001, US\$/kg.

Country	1995	1996	1997	1998	1999	2000	2001
Austria	15.6	14.3	13.2	14.9	12.2	12.3	11.3
Switzerland	13.6	12.6	11.8	12.7	11.6	11.6	11.3
Germany	12.0	11.0	10.2	10.8	9.5	9.1	8.9
Portugal	8.2	7.7	7.3	8.0	7.4	8.1	7.4
Belgium	8.0	7.4	7.4	8.3	7.5	8.0	7.3
Netherlands	7.7	7.6	7.3	8.3	7.6	7.9	7.2
UK	7.4	6.9	7.7	6.7	7.4	8.0	7.0
France	7.7	7.3	7.2	7.6	7.1	7.8	6.9
Ireland	8.0	8.3	6.7	7.4	7.0	7.1	6.7
Bulgaria	3.2	3.4	2.4	2.6	3.6	3.3	6.4
Greece	8.0	8.3	6.5	8.5	8.1	7.7	6.4
Spain	7.5	7.1	6.7	6.7	6.3	6.7	6.0
Italy	7.6	7.0	7.1	6.9	6.5	6.7	5.9
Finland	7.3	6.8	6.1	6.7	5.7	5.7	5.1
Sweden	5.4	5.3	4.6	4.7	4.3	4.1	3.8
Hungary	7.6	4.4	4.8	4.7	5.1	4.1	3.8
Belarus	3.1	3.5	2.6	2.8	4.3	3.1	3.7
Poland	2.1	2.4	2.4	3.0	3.2	2.9	3.0
Denmark	3.8	3.7	3.1	2.9	2.8	2.4	2.1
Norway	2.9	2.7	2.7	3.0	2.6	1.8	2.0

Austria and Switzerland have the highest importing price of frozen shrimp, about 11 US\$ per kg. Following them are Germany, Portugal, Belgium, Netherlands, and the UK with prices between 7-9 US\$ per kg. The markets with the lowest importing price of these products are Norway, Denmark, Poland, Belarus, Hungary, and Sweden, at about 2 and 3 US\$ /kg.

From both tables (30 and 31) it is evident that the price of fresh or chilled shrimp and price of frozen shrimp are roughly equivalent. The countries with high unit value of import of these products are Switzerland, Austria, Germany, Spain, France, Belgium, and Czech Republic.

By contrast, Denmark, Poland, Netherlands, and Portugal have a very low price for these products. It is understandable that these countries mainly import raw materials to domestic processing plants. The price of raw material is obviously lower than the price of finish product.

Table 32: Import unit value of prepared or preserved shrimp by country, 1995-2001, US\$/kg.

Country	1995	1996	1997	1998	1999	2000	2001
Switzerland	13.1	12.4	11.1	11.9	10.9	9.8	9.9
Iceland	10.7	12.0	8.4	11.8	6.5	13.1	9.7
Belgium	11.2	11.2	8.9	9.6	10.5	9.4	9.3
Poland	3.5	4.7	4.3	7.7	10.5	8.7	9.0
Austria	13.9	10.7	9.6	10.4	11.3	9.8	8.7
Slovenia	7.7	7.4	8.8	9.7	11.8	8.1	8.3
Germany	9.9	9.7	8.1	8.6	8.4	8.0	7.9
Italy	10.1	10.4	9.0	9.1	8.4	7.9	7.2
Norway	8.5	8.5	8.2	7.5	7.6	6.8	6.3
Greece	7.0	6.1	6.1	5.6	5.2	5.6	6.1
Netherlands	8.8	9.5	7.8	7.7	7.4	6.9	6.0
Czech Republic	6.3	5.4	5.8	5.9	5.0	5.6	5.8
Ireland	8.3	10.5	9.4	8.1	6.7	7.1	5.7
France	7.5	7.0	6.6	6.8	5.9	5.5	5.6
Spain	7.3	6.3	6.9	6.3	6.1	5.4	5.6
United Kingdom	8.7	8.1	7.5	7.2	6.7	6.0	5.4
Sweden	8.8	8.4	6.5	7.0	6.9	6.1	5.0
Denmark	8.7	8.3	6.5	6.5	6.2	5.7	5.0
Finland	9.2	7.7	5.7	5.8	5.9	5.5	4.6

The range of changing price of prepared shrimp is not as widely as it is for fresh and frozen shrimp. The countries with the highest price are Switzerland, Iceland, Belgium and Poland with over 9US\$/kg; following them are Austria, Slovenia and Germany. The price in the main markets for this product such as France, Spain and the UK is lower than in other markets.

In general the price of every shrimp products in all European markets has decreased in recent years. This is the result of shrimp aquaculture products from Asian, Northern American, and Latin American countries.

#### 5.4 Shrimp supply

There are interesting trends in shrimp consumption. The total supply of shrimp has constantly increased in the past decades. European people are more satisfied in shrimp products. The total supply of shrimp in Europe is from two resources: domestic production and import. The shrimp supply of Europe depends heavily on import supply. Export of shrimp takes place between European countries. Table 33 shows the supply of shrimp in Europe in the period between 1995-2001.

Because there are different forms of shrimp products, the calculation of supply for all shrimp items is not logical. Apparent supply was calculated by: production + import – export. Net import reflects the surplus import from export.

Table 33: Shrimp supply of Europe in MT (FAO 2001).

<b>Fresh or chilled</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Production	na	na	na	na	na	na	na
Import	25,049	25,639	29,121	31,542	33,589	30,960	29,506
Export	23,257	27,371	35,561	37,519	34,281	50,145	33,418
<b>Apparent supply</b>	<b>na</b>	<b>Na</b>	<b>na</b>	<b>na</b>	<b>na</b>	<b>na</b>	<b>na</b>
<b>net imports</b>	<b>1,792</b>	<b>-1,732</b>	<b>-6,440</b>	<b>-5,977</b>	<b>-692</b>	<b>-19,185</b>	<b>-3,912</b>
<b>Frozen</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Production	112,789	133,180	102,570	124,278	130,802	147,785	144,622
Import	331,875	348,637	337,309	398,500	395,504	461,238	497,106
Export	147,307	177,260	182,825	186,267	205,045	257,141	234,391
<b>Apparent supply</b>	<b>366,393</b>	<b>392,717</b>	<b>417,564</b>	<b>460,489</b>	<b>469,747</b>	<b>570,594</b>	<b>586,875</b>
<b>% net imports in supply</b>	<b>50%</b>	<b>44%</b>	<b>37%</b>	<b>46%</b>	<b>41%</b>	<b>36%</b>	<b>45%</b>
<b>Prepared or preserved</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Production	57,305	61,847	73,623	76,251	79,691	80,225	84,869
Import	106,381	114,282	118,366	123,954	126,672	140,014	140,754
Export	89,997	97,367	103,769	104,447	108,246	116,069	119,814
<b>Apparent supply</b>	<b>139,073</b>	<b>149,802</b>	<b>148,512</b>	<b>152,150</b>	<b>155,227</b>	<b>175,858</b>	<b>175,699</b>
<b>% net imports in supply</b>	<b>12%</b>	<b>11%</b>	<b>10%</b>	<b>13%</b>	<b>12%</b>	<b>14%</b>	<b>12%</b>

\* na - not available

In recent years the net-import quantity of fresh or chilled shrimp is negative. The reason may be that fresh shrimp is transferred to frozen or prepared form in processing plants.

The total supply of frozen and prepared shrimp increased in the period between 1995-2001. The average growth of frozen product is 7% and 3.4% for prepared product under the years reviewed. The increase of frozen and prepared shrimp supply together with the decrease of net-import in fresh product has proclaimed the trends of market. Value-added products have been preferred to shrimp in their original form.

In 2001, the total supply of frozen shrimp in Europe is approximately 587,000 MT, in which 45% of the total supply is supplied by non-European countries. European countries depend very much on the supply of this product from outside countries approximately between 40%-50 % of total demand.

The demand of prepared or preserved shrimp has increased slightly in past years. However, the total supply is still small in comparison to the whole shrimp commodities. European countries consumed between 150,000 to 175,000 MT of prepared shrimp per year.

The fifteen countries of the EU have the highest demand in shrimp consumption. Total supply of these countries has ranged from 400 thousand MT to 500 thousand MT of shrimp in live-weight annually, in which over 75% is supplied though imports. The dependence of EU on imports for its shrimp supply has grown impressively during the period between 1981-1997 going from 55% to 76%. The *per capita* supply tripled from a mere 400g to 1200g (Josupeit 1999).

The distribution of European Union imports of shrimps are Asia with 29%, Europe with 20%, North America with 17%, Latin America with 17%, Africa with 16%, and other countries accounting for 1% in 1997. The biggest exporters of shrimp into EU

are Thailand, India, Ecuador, Iceland, Greenland, Norway, and Bangladesh. In recent years Asian countries have constantly expanded their market share in EU on the basis of promoting shrimp aquaculture.

Frozen shrimp is utilized most in Europe. Table 34 shows the countries with the highest consumption of this product.

Table 34: Total supply of frozen shrimp, by country in MT (FAO 2001).

Country	1995	1996	1997	1998	1999	2000	2001
Spain	93,419	95,786	95,207	115,771	109,431	125,293	132,785
Iceland	29,852	27,455	NA	35,474	48,153	55,399	61,841
France	47,249	49,913	43,606	49,686	48,102	42,500	49,411
Italy	28,111	32,769	28,227	38,716	36,935	41,667	48,659
Norway	29,109	30,151	22,411	21,672	18,443	20,172	19,556
Russian	NA	2,225	8,916	8,178	3,007	12,988	15,818
UK	12,482	10,289	10,941	18,143	11,579	16,265	15,242
Germany	8,333	7,890	6,217	8,141	7,749	9,112	11,910
Portugal	9,150	8,438	9,060	10,135	9,902	7,708	9,966
Sweden	NA	NA	7,782	7,652	8,631	6,929	8,446
Belgium	11,709	8,039	6,281	6,129	7,264	7,502	7,229
Netherlands	6,831	3,104	NA	5,807	NA	NA	6,471
Denmark	6,518	6,971	5,166	1,825	8,500	NA	5,085
Greece	2,115	2,823	2,924	2,912	2,914	3,255	4,135
Latvia	54	NA	1,021	1,279	3,198	3,223	3,320
Switzerland	1,858	1,941	1,830	2,460	2,066	2,605	2,834
Ireland	883	957	772	790	1,494	1,276	1,382
Poland	983	915	1,288	1,380	1,173	1,574	1,086

\* NA: Not Available

The total supply in Table 34 was calculated by: domestic production + import – export.

The leading country with the highest consumption of frozen shrimp is Spain with 133,000 MT in 2001, in second is Iceland with 62,000 MT, Italy with 48,000 MT, Norway with 19,000 MT, Russia with 16,000 MT, the UK with 15,000 MT, and Germany with 12,000 MT.

In recent years, Iceland has risen in terms of supplying frozen shrimp and has become the second highest country supplying frozen shrimp.

## 5.5 Target market

Based on the analysis above and the data in the table below, target markets were determined. The numbers in Tables 35, 36 and 37 show the net import of shrimp commodities. If the net import is positive, it means that the country imported shrimp commodity more than exported; if the result is vice versa then the country exported more than imported.

Table 35: Net import of fresh or chilled shrimp by country, in MT (FAO 2001).

Country	1995	1996	1997	1998	1999	2000	2001
France	2,908	2,808	3,310	2,984	2,775	3,490	2,640
Italy	771	1,286	1,703	1,963	2,411	2,196	2,624
Belgium	1,694	1,548	2,179	2,254	1,826	2,040	2,454
Poland	5,151	3,590	2,038	2,042	1,419	1,919	2,046
Sweden	1,554	1,771	3,318	3,077	2,715	2,333	1,818
Spain	380	639	748	818	837	754	907
UK	-1,242	-1,501	-1,031	-827	-1,411	-1,782	-1,453
Norway	-720	-1,060	-1,431	-2,247	-2,091	-2,055	-1,717
Denmark	-2,214	-3,164	-5,530	-7,884	-3,099	-4,567	-2,980
Germany	-5,041	-6,465	-9,314	-6,559	-8,627	-10,954	-5,004
Netherlands	-788	-1,222	-2,406	-2,854	1,108	-8,073	-5,602

France, Italy, Belgium, and Poland are countries with a high demand for imported fresh shrimp. These countries have a net-import of 2,000 MT of fresh shrimp each per year to satisfy domestic consumption. In contrast, the Netherlands, Germany, Denmark, Norway, and the UK are countries with a high net export of fresh shrimp with 5,000 MT, 5,000 MT, 2,000 MT, 1,7000 MT, and 1,4000 MT in 2001.

Table 36: Net import of frozen shrimp by country, in MT (FAO 2001).

Country	1995	1996	1997	1998	1999	2000	2001
Spain	74,466	73,878	69,925	91,965	84,439	102,167	109,871
France	47,249	49,913	43,606	49,686	48,102	42,500	49,411
Italy	27,178	31,714	26,646	36,924	34,550	37,973	45,216
Iceland	-5,289	-11,200	-10,791	4,195	22,600	31,573	34,741
UK	12,482	10,289	10,941	18,143	11,579	16,265	15,242
Germany	8,333	7,890	6,217	8,141	7,749	9,112	11,910
Portugal	9,150	8,438	9,060	10,135	9,902	7,708	9,966
Sweden	7,167	11,159	7,713	7,504	8,547	6,829	8,366
Belgium	11,709	8,039	6,281	6,129	7,264	7,502	7,229
Netherlands	6,831	3,104	-4,552	5,807	-9,835	-1,794	6,471
Denmark	6,392	6,413	4,871	1,109	8,169	-4,373	4,346
Norway	12,981	12,351	7,174	6,122	2,321	4,873	4,324
Greece	1,101	1,776	1,551	1,584	1,682	2,115	2,863
Switzerland	1,858	1,941	1,830	2,460	2,066	2,605	2,834
Ireland	-407	-640	253	434	1,194	876	1,096
Poland	983	915	1,288	1,380	1,173	1,574	1,086
Estonia	213	193	246	-2,184	221	-4,428	-869
Russian	-2,460	-6,095	5,366	-552	-12,846	-17,717	-1,399
Faroe Islands	-5,519	-7,297	-6,492	-7,378	-7,171	-7,516	-13,806

Spain has the highest net import of frozen shrimp. The net import is between 75,000 MT and 110,000 MT per year. This net import was used to meet more than 80% total of demand of this product in Spain.

France has a net annual import of about 48,000 MT of frozen shrimp. Italy has a net import, which has increased in recent years. The peak of net import was 45,000 MT in 2001. Iceland used to have a surplus of trade in frozen shrimp. But in recent years, the consumption of frozen shrimp has increased significantly. The UK, Germany, and Portugal had a net import of frozen shrimp around 10,000 MT each per year.

Table 37: Net import of prepared or preserved shrimp by country, in MT (FAO 2001).

Country	1995	1996	1997	1998	1999	2000	2001
UK	26,599	30,864	29,652	32,022	32,921	36,117	39,834
France	7,810	8,384	8,917	10,694	11,221	10,738	11,274
Germany	11,191	11,728	13,203	12,701	9,619	10,872	10,270
Sweden	6,549	6,784	7,082	7,086	7,663	9,118	9,661
Italy	3,609	3,910	4,229	5,003	5,653	5,510	5,913
Switzerland	2,125	2,346	2,232	2,107	2,344	2,446	2,577
Finland	1,624	2,023	1,891	1,964	2,030	1,921	2,407
Denmark	8,199	4,644	3,327	3,249	6,031	5,397	613
Austria	438	682	571	510	467	630	602
Spain	704	903	600	561	511	359	519
Portugal	167	NA	386	323	331	394	512
Poland	-1,565	-1,050	-451	-730	-555	-994	-847
Faroe Islands	-1,124	-1,541	-1,535	-2,124	-2,279	-2,298	-3,105
Netherlands	-5,723	-7,515	-5,167	-4,872	-8,880	-6,505	-6,066
Norway	-9,140	-10,782	-13,541	-16,502	-17,255	-17,720	-17,384
Iceland	-22,382	-24,140	-25,716	-23,264	-20,768	-20,695	-24,345

The UK has the highest share of consumption of prepared shrimp. The net import was about 37,000 MT per year. Following them are France, Germany, and Sweden which have a net import of around 10,000 MT of prepared shrimp each per year. The big exporters of this product are Iceland with 24,000 MT, Norway with 17,000 MT, and the Netherlands with 6,000 MT of net export of this product in 2001.

In summary the markets below have potential for shrimp exporters:

The Spanish market has the highest demand for frozen shrimp, followed by fresh and prepared. Annually, the Spanish market needs to import around 100,000 MT of frozen, 800 MT of fresh or chilled and 500 MT of prepared or preserved shrimp to meet domestic demand..

The French market needs to import nearly 50,000 MT of frozen, around 10,000 MT of prepared and 3,000 MT of fresh or chilled shrimp per year. This market has a high demand for tropical shrimp.

The United Kingdom has the highest demand for prepared shrimp. Annually this market needs to import about 35,000 MT of prepared shrimp to meet domestic

demand. Frozen shrimp deficit of the market is about 15,000 MT. This country can produce enough fresh shrimp to satisfy consumption.

Germany needs to import about 10,000 MT frozen and more than 10,000 MT of prepared shrimp annually. This country has a surplus export of fresh shrimp of 5,000-10,000 MT of fresh shrimp per year.

Italy has a very high frozen shrimp demand and needs to import annually about 37,000 MT. Import demand of prepared and fresh shrimp in this market is 5,500 MT and 2,200 MT per year, respectively.

Portugal, Sweden, and Belgium need to import annually about 7-9 thousand MT of frozen shrimp. The fresh shrimp import demand of Belgium and Sweden is about 2,000 MT. Prepared shrimp was consumed a lot in Sweden which needed to import about 8-9 thousand MT per year.

The biggest shrimp exporters in Europe are Denmark, Netherlands, Norway, Iceland, and the Faroe Islands. These countries are competitors for shrimp exporters. Table 38 shows the import quantity of shrimp in recent years.

Table 38: Export shrimp in Europe by country, 1992-2001, 1,000 MT (FAO 2001).

Country	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Denmark	64.9	63.6	66.5	52.9	68.7	74.7	75.2	65.1	98.4	91.2
Netherlands	29.4	30.0	34.2	32.0	36.4	44.7	43.1	54.8	56.7	47.7
Norway	21.4	22.5	24.0	15.8	18.2	22.2	27.3	35.5	42.9	34.0
UK	21.7	18.2	21.0	19.2	21.0	20.7	23.8	26.2	27.3	28.7
Iceland	20.2	22.4	32.4	31.8	38.8	41.3	32.0	25.8	23.9	27.2
Belgium	9.0	12.4	16.2	16.2	18.6	22.2	20.1	24.5	21.1	23.0
Faroe Islands	5.0	7.1	10.2	7.5	9.1	8.8	10.1	9.8	10.8	17.1
Spain	3.9	9.6	5.9	6.3	9.4	7.6	9.6	8.4	11.4	16.5
Russia	9.1	10.2	7.0	4.9	6.2	1.5	7.3	12.9	25.4	14.1
Germany	6.6	6.7	9.6	8.7	10.2	14.3	11.9	15.1	18.6	11.3
France	5.0	5.9	5.7	7.3	6.6	9.9	11.0	11.6	11.0	10.6
Italy	2.1	1.6	1.6	1.2	1.6	1.6	1.9	2.5	3.9	3.5
Others	5.7	4.2	5.9	9.4	9.3	9.9	12.0	9.6	21.0	10.9
<b>Total</b>	<b>204.0</b>	<b>214.4</b>	<b>240.3</b>	<b>213.4</b>	<b>254.3</b>	<b>279.3</b>	<b>285.2</b>	<b>301.8</b>	<b>372.3</b>	<b>335.8</b>

Annually, Europe exports more than 300 thousand MT of shrimp products, mostly in fresh form. Some countries in Table 38 have a high export volume of shrimp but this does not mean that these countries have potential shrimp to export. The countries such as the UK, Denmark, Spain, Germany, France, and Italy carry out re-export activities.

The countries which have a surplus of shrimp to export are Iceland with 16,000 MT, the Faroe Islands with 8,700 MT, the Netherlands with 8,000 MT, Norway with 7,000 MT, Russia with 6,000 MT, and Estonia with 1,000 MT annually.

## 5.6 Summary

Europe accounts for about one third of shrimp imports in value terms, almost equalling the importance the US shrimp markets and overcoming Japanese markets in value terms in recent years. Although shrimp production has expanded very impressively during the past decades European markets have potential for exporters, especially the European Union. Annually, Europe imports more than 600 thousand MT of shrimp in various forms. In which frozen product accounts for more than 70%, preserved or prepared accounts for 20%, and the rest for accounts for fresh product.

In recent years shrimp price of various forms has fallen because of the development of shrimp aquaculture in the world, especially in Asian countries. The average import price of shrimp is about 5.44 US\$ per kg in 2001.

Total consumption of shrimp in Europe annually is about 550 thousand MT of frozen, 170 thousand MT of preserved or prepared shrimp.. Shrimp consumption per capita of EU is about 1.2 kg/year in 1997.

Spain, France, the UK, Germany, Italy, Belgium, and Portugal have a high demand of shrimp import. Frozen shrimp is the most common among shrimp products imported.

## 6 EUROPEAN MARKETS FOR WHITEFISH PRODUCTS

Basa and tra catfish are important species of seafood exports of Vietnam. Aquaculture of catfish for export is vital for jobs of thousands of farmers in South Vietnam. Tra and basa catfish are exported mainly to the United States as fillets. The dependence on a single market has led to disadvantages for Vietnamese exporters. On July 23 2003, the US International Trade Committee voted to apply anti-dumping tax on frozen catfish fillet imported from Vietnam. To spread the risks, Vietnamese exporters need to target European markets to export their products.

Catfish products are not common in European markets. To find out the demand of these products it is necessary to analyse competitive products against catfish products.

In United States, the whitefish market is complex; it includes many species that compete with one another, and also competes with imports of similar products from other nations. Pollock and Pacific cod are the dominant species sold in U.S. whitefish markets. Other ground fish and even farmed catfish are a part of the whitefish market (Roheim *et al.* 2003). Roheim and her colleagues built a model for the testing of co-integration of price among species of the US whitefish market. She concludes “even with the relatively weak results of this analysis, we can say that groundfish prices are influenced by the prices of cod. There is some co-integration among the other groundfish species, except for yellowtail and widow flounder” (Roheim *et al.* 2003).

According to the FAO, the term “whitefish” is defined as a “general term for fishes which have fat concentrated in the liver, not the flesh; lean fish with less than 2% of fat in the flesh” (FAO Glossary). Whitefish is a category belonging to ground fish.



In European markets whitefish is known as cod, haddock, pollock, whiting, hake, and some others. According to FAO statistics, these species are classified into groups such as *Cod*, *Hake*, *Haddock*, *Pollock*, *Whiting*, and *Others* by ISSCAAP group ((FAO 2001).

Based on the reasons above, whitefish is chosen as a competitive species with catfish in European markets, especially cod.

In recent years a lot of cod stocks have been over-fished. Worldwide, total cod catch has fallen by two thirds in only three decades. Cod, once one of the most important mass fish species, is over-fished. Pollock and haddock are in the same situation. This is an opportunity for catfish products to fill the gap.

This chapter will mainly analyse the situation of production, exports, and imports of products of cod, hake, haddock, pollock, whiting, and other whitefish. The chapter will also analyse in detail cod species.

## 6.1 European whitefish production

Whitefish is a popular category in European countries. Annual whitefish quantity of production in Europe is around 5 million MT, accounting for 25% of total fish production of Europe. Whitefish production in Europe accounts for more than half of whitefish production in the world. Figure 19 (below) shows the historical production of whitefish in Europe.

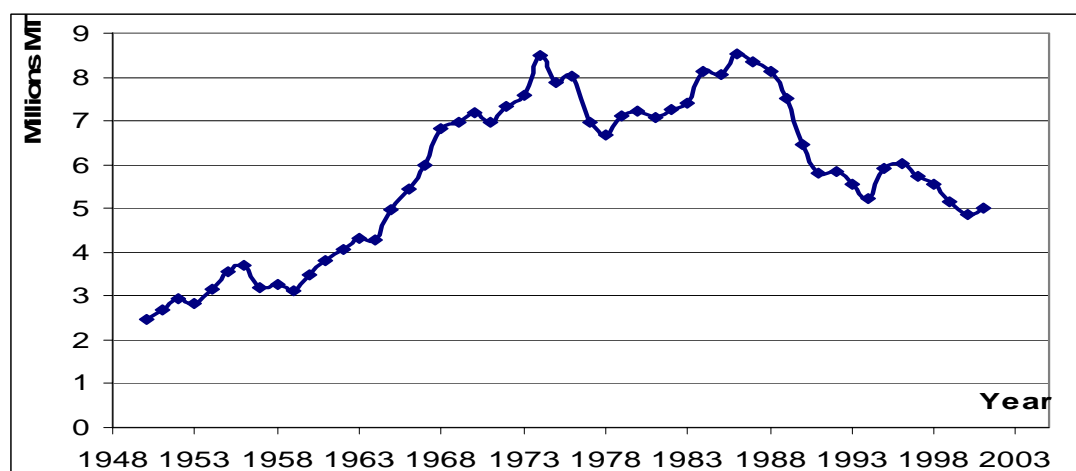


Figure 19: Historical whitefish production of Europe, 1950-2001 (FAO 2001).

The increase of whitefish production has not been as fast as the production of other species. The production share of whitefish decreased from more than 30% to less than 30% in 1997. According to FAO statistics, the peak production of whitefish was 8.5 million MT in 1986 which dropped down to 4.8 million MT in 2000 and 5 million MT in 2001. The whitefish production in Europe has decreased by 40% from 1986 to 2001. The probable reasons are over fishing of some important species such as pollock and cod, and the changing politics of the Soviet Union affecting the fisheries sector.

In 2001, whitefish production in Europe was 5 million MT, in which 1.8 million MT consisted of whiting, 1.5 million pollock and 1 million cod. In the past 10 years 1992-2001, pollock has dominated production in Europe with 43% of total whitefish production, following this are hake with 25%, cod with 23% and whiting with 18%. There are big changes in production of species in the period 1992-2001, Figures 20 (1992 and 2001) show the change of production share of each species in 1992 and 2001.

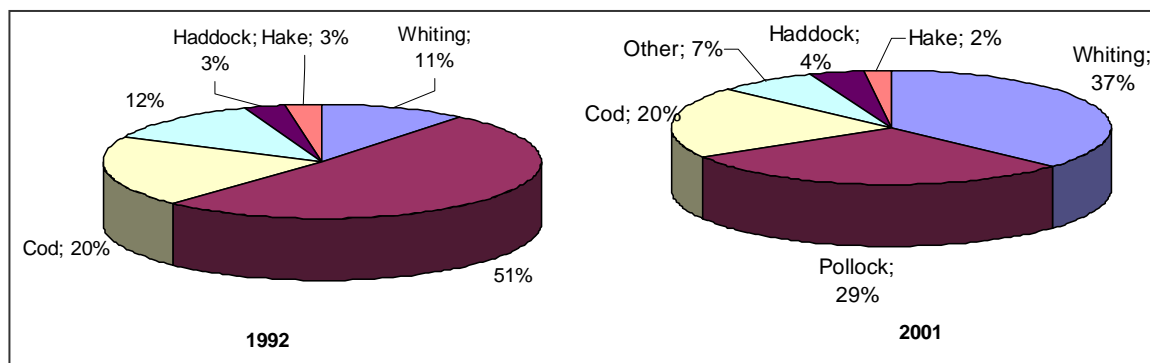


Figure 20. Change of production share of each species in 1992 and 2001.

Whiting has the biggest increase in production with the increase of landing quantity rising from 626 thousand MT in 1992 to 1,858 thousand MT in 2001, which represents a growth of nearly 200%. The production share jumped from 11% to 37% of total whitefish production in Europe.

Pollock landing volume reached its peak of 4 million MT in 1988, and has decreased year by year. Pollock landing volume has decreased by more than half in the period 1992-2001; production share fell down from 51% to 29% of total whitefish production in Europe in the same period. Although the decrease has occurred most in recent years, pollock is still the most important species with the highest single landing volume of about 1.5-1.8 million MT annually.

In the period between 1992-2001 cod is the second highest species in production in Europe with volume ranging from 1 to 1.4 million MT. Production share is stable with 20% of total whitefish production annually in Europe. However there is an alarm of over fishing of this species. The landing volume stated decreased from 1.44 million MT in 1996 to 1.02 million MT in 2001, a decrease of 30%.

Haddock and hake are in the lowest position in production with volume around 200 thousand MT for haddock and 100 thousand MT for hake annually.

Other species such as pollack, ling, Norway pout, tusk etc. have considerably less production of about 450 thousand MT annually, accounting for 12% in 1992 and 7% in 2001 of the total whitefish production in Europe.

Whitefish production in the world is around 10 million MT per year. The biggest countries of whitefish production are United States and Russia, each accounting for 20%, Norway with 12%, Iceland with 7%, and Argentina with 5% total of the world

production. The biggest European countries of whitefish production are shown in Table 39.

Table 39: Whitefish production in Europe by country, 1992-2001, 1,000 MT (FAO 2001).

Country	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Russia	3,015	2,774	2,382	2,822	3,055	2,854	2,487	2,139	1,848	1,864
Norway	810	883	1,012	1,092	1,186	1,125	1,246	1,141	1,087	1,070
Iceland	405	392	348	322	311	310	393	510	583	685
Faroe Islands	116	127	147	133	134	152	176	207	248	372
Spain	180	167	161	190	183	174	175	186	174	228
Denmark	397	327	262	402	321	282	218	220	280	187
UK	208	243	248	254	261	269	327	296	196	177
France	120	134	129	115	115	125	109	109	125	126
Others	588	523	551	582	455	445	415	358	308	303
<b>Total</b>	<b>5,840</b>	<b>5,570</b>	<b>5,239</b>	<b>5,913</b>	<b>6,020</b>	<b>5,735</b>	<b>5,546</b>	<b>5,166</b>	<b>4,848</b>	<b>5,012</b>

Russia and Norway have the largest production share of whitefish in Europe. These two countries account for nearly 60% of total European production. Production volume of Russia decreased from 4 million MT in 1988 to 1.8 million MT in 2001. Since 1994, Norway has had sustainable production volume with 1-1.2 million MT annually. Iceland has had production volume from 300 to 600 thousand MT per year. The Faroe Islands, Spain, Denmark, the UK, and France have captured more than 100 thousand MT annually.

Cod (*Gadus morhua*) is a whitefish with taste similar to catfish. This fish has succulent, white flesh that flakes easily. Cod is usually sold as steaks or fillets with a price around 4 US\$ per kg of fillet. Tra and basa catfish products of Vietnam with high quality and low price can compete against cod products.



Figure 21: Main cod products in European markets: fresh, fillets, and steaks (photo by Globelfish).

In this project, cod species include: Atlantic cod, Pacific cod, polar cod, saffron cod, wachna cod (Navaga), poor cod, and Greenland cod, classified by ISSAACP group (FAO 2001).

Volume of cod production in the world has fallen down from 1.8 million MT in 1992 to 1.3 million MT in 2001. In which the volume from European production accounted for more than 70%. The decrease of European production is the reason for the decrease of the world production in recent years.

The largest European countries in cod production are Russia with 300-400 thousand MT, Iceland with 210-270 thousand MT, and Norway with 200-270 thousand MT annually. The three countries account for nearly 70% of total European production of cod. Cod is one of the most important species in the fisheries industry of these countries, especially Iceland.

Tra and basa catfish of Vietnam is landed from aquaculture but cod is landed from marine resource. Cod is captured from two main areas: Northeast Atlantic (especially Barents Sea) with 90% and Northwest Pacific with 9% of total cod production in Europe.

In recent years a lot of cod stocks have been over-fished. Worldwide, total cod catch has fallen by two thirds in only three decades. Cod, once one of the most important mass fish species, is over-fished. The number of cod capable of reproduction in the North Sea has fallen by 90% (Globefish 2003). There are some areas, which have been closed to rebuild cod stock such as Baltic and north European waters, and Newfoundland of Canada. Norway has planned to produce cod in aquaculture with volume twice as much as the country' current fishing quota in the period 2015-2020 (Globefish 2003).

## 6.2 European whitefish commodities import and export

Commodities of whitefish include: frozen, fresh or chilled, salted, dried, smoked, canned, and prepared. Fresh and frozen are dominating commodities in trade. In this project, whitefish commodities will be classified into three groups such as fresh or chilled, frozen, and prepared products. Prepared products include salted, dried, smoked, canned and other forms.

### 6.2.1 Whitefish commodities export

In recent years, the quantity export of whitefish commodities is around 800 thousand MT. The peak quantity of export is 923 thousand MT, which occurred in 2001 as shown in table 40 below:

Table 40: Export quantity of whitefish by products, 1992-2001, 1,000 MT (FAO 2001).

Commodities	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Frozen	231	256	307	308	347	375	365	354	362	409
Fresh or chilled	168	206	259	288	320	340	333	312	253	243
Prepared	142	139	181	180	212	208	205	188	166	172
<b>Total</b>	<b>541</b>	<b>601</b>	<b>747</b>	<b>776</b>	<b>879</b>	<b>923</b>	<b>902</b>	<b>855</b>	<b>782</b>	<b>824</b>

Frozen products have the biggest export share with more than 300 thousand MT annually, accounting for 40-50% of total export volume. Following this are fresh or chilled products with export share between 30-37% and prepared with a market share between 20-26% of total export quantity annually.

Cod is the third largest in volume of production but this species leads in export quantity. See Table 41 below for more information:

Table 41: Export volume of whitefish by species, 1992-2001, 1,000 MT (FAO 2001).

Commodities	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Cod	423	464	581	580	646	655	579	569	524	489
Whiting	19	24	27	35	42	67	144	121	95	183
Haddock	47	50	73	80	103	114	98	82	75	77
Hake	49	61	65	79	86	85	80	82	86	73

Export volume annually of cod is between 400-650 thousand MT, accounting for more than 60% of total export volume of whitefish. Haddock and hake have the same export volume share with around 10% for each. In recent years whiting export volume has increased considerably, from 19 thousand MT in 1992 to 198 thousand MT in 2001.

In Europe, whitefish was exploited mainly in the North Atlantic Sea, especially the Baltic Sea. Countries around this area seem to have the highest production and export of whitefish, except Russia.

Whitefish products accounted for 15% of total export value of the seafood industry in Europe. But in some countries such as Iceland, Norway, and Denmark whitefish is one of most important species of the fisheries industry. This species has made up 40%, 25%, and 18% of the total export value from fisheries industries of Iceland, Norway, and Denmark, respectively.

Annual revenue from export of whitefish in European countries is around 2.5 billion US\$, the peak value reached 3 billion US\$ in 1999. The three top countries are Norway, Iceland, and Denmark accounting for 65%-70% of total export value of whitefish in Europe. Table 42 shows top 10 countries with highest export value of whitefish products.

Table 42: Export value of whitefish by country, 1992-2001, million US\$ (FAO 2001).

Country	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Norway	628	609	744	822	849	883	997	915	756	707
Iceland	544	428	416	410	406	414	536	613	543	543
Denmark	471	331	480	448	532	493	485	526	444	438
Spain	63	81	101	139	157	143	156	162	155	151
Sweden	26	14	31	47	59	68	82	104	110	145
Germany	144	57	75	87	107	82	100	109	164	141
Netherlands	40	41	53	50	59	103	150	159	101	92
Faroe Islands	38	18	25	34	55	106	122	117	104	89
Poland	16	11	25	21	15	6	58	73	72	75
UK	88	96	85	74	72	69	84	79	60	60
Others	120	166	188	259	218	208	200	211	195	173
<b>Total</b>	<b>2,178</b>	<b>1,852</b>	<b>2,222</b>	<b>2,391</b>	<b>2,529</b>	<b>2,574</b>	<b>2,970</b>	<b>3,067</b>	<b>2,705</b>	<b>2,614</b>

In the period between 1992-2003, Norway earned from export of whitefish products between 600 million and one billion US\$ annually, accounting for 30% of the total export value in Europe. The export value for Iceland is around half of billion, accounting for 20% total of export value of Europe; Denmark is around 400 million US\$, accounting for 17%. Spain, Sweden, and Germany have an export value of about more than one hundred million US\$ in total in recent years.

Table 43 shows the export share of cod products between 1992 and 2001. The three categories of products have the same quantity export share by year.

Table 43: Cod commodities export by products, 1992-2001, 1,000 MT (FAO 2001).

Country	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Fresh	120	156	201	224	236	235	170	174	159	130
Frozen	169	172	202	179	202	216	209	212	205	194
Prepared	133	136	178	177	208	204	200	183	160	165
<b>Total</b>	<b>423</b>	<b>464</b>	<b>581</b>	<b>580</b>	<b>646</b>	<b>655</b>	<b>579</b>	<b>569</b>	<b>524</b>	<b>489</b>

Fresh or chilled cod exports have fluctuated between 120-230 thousand MT annually. Fresh or chilled form includes two kinds: whole cod and fillets. Fresh whole cod accounts for 80% of the total fresh cod exports..

Frozen export quantity is between 170-220 thousand MT per year. Frozen products include fillet, roes, minced, and other forms. Fillet forms account for nearly 80% of total export quantity. Atlantic cod has dominated in frozen products with more than 90% total of export quantity.

Export volume of prepared or preserved products is from 130 to 200 thousand MT per year. Prepared or preserved products include salted, dried, canned, roes, and others. Salted products are dominating in export with more than 90% of the total export volume of cod in prepared or preserved forms. There are two main salted products; salted or in brine with more than 60% export share, and salted and dried with more than 20% export share of preserved cod products.

Three countries have a dominating export share of cod products: Norway, Iceland, and Denmark. Norway exports more than 120 thousand MT annually of cod products, accounting for one-quarter of total European seafood export volume. Iceland and Denmark export annually nearly 100 thousand MT each, accounting for one-fifth of total export volume of cod products in Europe. Figure 22 shows the export share of cod products in its varied forms in 2001.

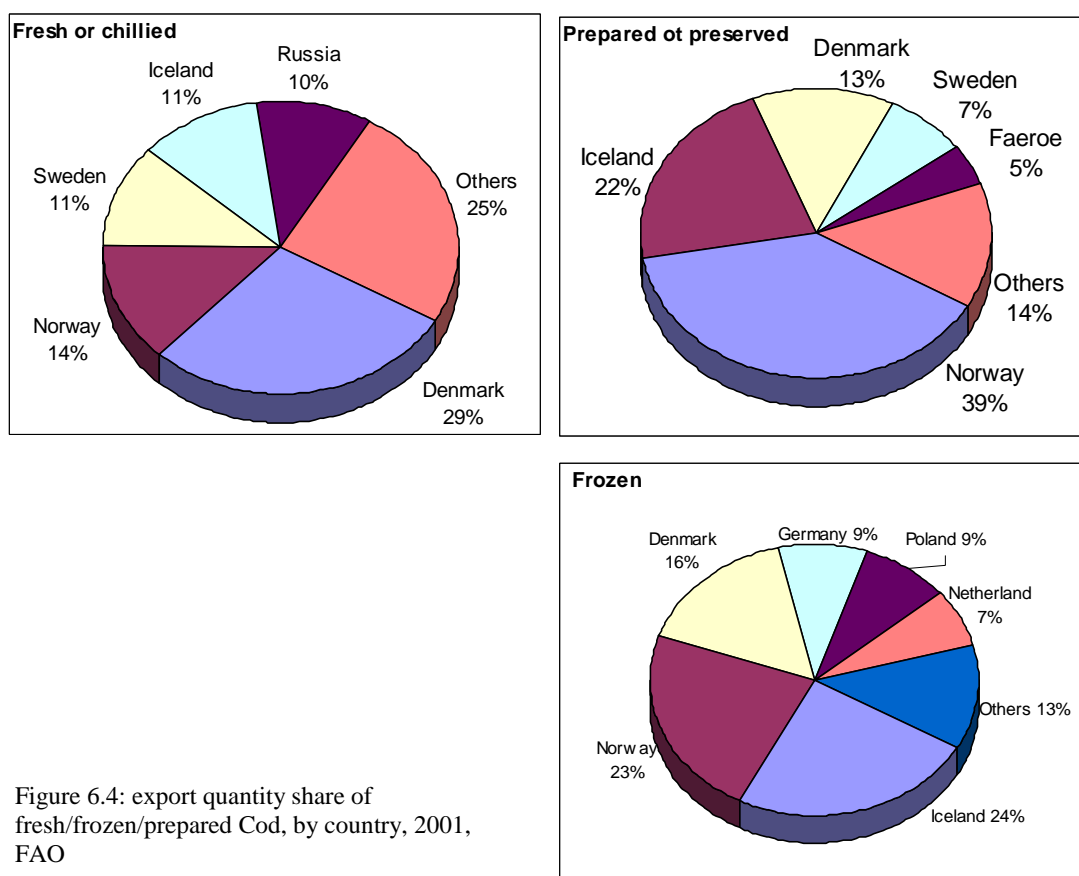


Figure 22: Export quantity share of fresh/frozen/prepared cod in 2001 by country (FAO 2001).

In 2001, Denmark led in exporting fresh or chilled cod product with 29% of total cod export quantity in Europe. Following Denmark are Norway with 14%, Iceland and

Sweden with 11% each, and Russia with 10%. Iceland and Norway led in exporting frozen with almost the same share in total export volume about 24% for Iceland and 23% for Norway. Following them are Denmark with 16% and Germany and Poland with 9% each. Norway dominated in prepared or preserved products with a 39% export share; Iceland with 22% and Denmark with 13%. Salted cod product has the biggest portion in prepared or preserved cod products of Norway, Denmark, and Iceland. It accounts for more than 90% of the total export volume of this product form.

### 6.2.2 *Whitefish commodities import*

European countries import more than one million MT of whitefish annually, accounting for around 10% of total import volume of all fisheries commodities. There are three kinds of whitefish products imported for food consumption: frozen, fresh, and prepared. The import volume of whitefish commodities exceeds export volume by 300 thousand MT annually, mainly exceeding by frozen product. Table 44 shows the import quantity of whitefish commodities by products in the period 1992-2001.

Table 44: Import volume of whitefish by product, 1992-2001, 1,000 MT (FAO 2001).

Products	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Frozen	521	551	612	586	651	628	656	636	620	682
Fresh	232	234	317	315	344	334	282	289	268	256
Prepared	145	158	180	190	215	211	201	187	165	171
<b>Total</b>	<b>898</b>	<b>942</b>	<b>1,109</b>	<b>1,091</b>	<b>1,210</b>	<b>1,173</b>	<b>1,139</b>	<b>1,112</b>	<b>1,054</b>	<b>1,110</b>

In the period 1992-2001, European countries imported whitefish commodities with an average volume of 600 thousand MT of frozen, 290 thousand MT of fresh, and 180 thousand MT of prepared or preserved products per year. The frozen products accounted for more than 50%, fresh product nearly 30%, and prepared products nearly 20% of the total import volume.

Cod is dominant, accounting for 60% of the total import volume, followed by hake with 30% and haddock and whiting with only 10%. Table 45 shows more details about the import volume of whitefish by species.

Table 45: Import volume of whitefish by species, 1992-2001, 1,000 MT (FAO 2001).

Species	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Cod	592	598	694	679	746	725	675	674	625	651
Hake	249	287	337	328	364	349	370	350	330	346
Haddock	47	46	58	67	86	82	77	70	69	79
Whiting	10	10	20	17	15	17	17	19	29	33
<b>Total</b>	<b>898</b>	<b>942</b>	<b>1,109</b>	<b>1,091</b>	<b>1,210</b>	<b>1,173</b>	<b>1,139</b>	<b>1,112</b>	<b>1,054</b>	<b>1,110</b>

Cod imports ranged from 600-780 thousand MT per year in the period 1992-2001, of which 50% is frozen and the rest is fresh or prepared with 25% each.



Hake imports were about 330 thousand MT per year of which 80% is frozen and 20% fresh or chilled. Prepared hake is not considered.

The haddock import volume is about 80 thousand MT annually, in which fresh and frozen account for 50% each. Whiting had the smallest import portion, about 10-30 thousand MT, mainly in the frozen form.

In the period 1992-2001, European countries spent about 3-3.5 billion US\$ to import whitefish products for food consumption. This figure seems to have been stable over the years. The markets with the biggest import share are the UK, Spain, Portugal, and France. Table 46 shows in more detail, the import value of the biggest markets in Europe.

Table 46: Import value of whitefish by country, 1992-2001, million US\$ (FAO 2001).

Country	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
UK	540	414	398	408	461	459	582	596	591	590
Spain	537	497	519	580	577	531	610	605	536	589
Portugal	490	387	403	457	460	409	505	597	444	486
Denmark	271	191	328	330	336	299	321	344	312	317
France	266	215	238	256	282	249	287	280	246	250
Italy	249	217	235	220	259	226	259	254	211	246
Norway	149	113	124	173	157	173	218	235	205	204
Germany	188	144	181	192	206	216	254	205	198	197
Netherlands	57	56	76	121	127	143	167	189	149	164
Sweden	39	32	43	62	64	81	104	121	123	161
Others	137	124	161	185	212	200	270	246	218	215
<b>Total</b>	<b>2,924</b>	<b>2,390</b>	<b>2,708</b>	<b>2,983</b>	<b>3,142</b>	<b>2,986</b>	<b>3,577</b>	<b>3,673</b>	<b>3,232</b>	<b>3,419</b>

In the period 1992-2001, Spain imported whitefish products with the highest value about 550 million US\$ per year, following are the UK with 500 million US\$, Portugal with 450 million US\$, Denmark with 300 million US\$, France and Italy with 250 million US\$ each, and Germany with nearly 200 million US\$.

Spain also leads in import of whitefish in quantity with about 200 thousand MT per year, of which more than 50% is frozen, 35% is fresh and the rest is prepared. The UK market imported about 160 thousand MT of whitefish products, in which frozen products accounted for more than 70%, fresh accounted for 25%, and the rest was prepared.

Prepared or preserved products are imported in the highest volume to the Portuguese market with more than 50% of the total 145 thousand MT of whitefish per year. The frozen import share of this market is about 45% of the total import volume. Fresh products seem not to be attractive in Portugal. Prepared or preserved products imported into Portugal are mainly in the salted form.

France imported about 80 thousand MT of whitefish products, half of which were frozen, and nearly 40% fresh. The import volume of these products in Germany and Italy is about 60 thousand MT per year.

Cod was imported with the greatest share, about 60% of total volume and 70% of total value of whitefish imports in European markets; see Table 47 for cod volume imports. Annually the markets import around 300 thousand MT fresh, 200 thousand MT frozen, and 140 thousand MT prepared or preserved cod.

Table 47: Cod commodities exports by products, 1992-2001, 1,000 MT (FAO 2001).

<b>Commodities</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Fresh	279	276	288	264	295	292	313	319	313	350
Frozen	145	157	179	189	214	209	199	185	163	168
Prepared	169	165	226	226	237	223	163	169	150	133
<b>Total</b>	<b>592</b>	<b>598</b>	<b>694</b>	<b>679</b>	<b>746</b>	<b>725</b>	<b>675</b>	<b>674</b>	<b>625</b>	<b>651</b>

Fresh products are dominant among imported cod products, accounting for 44% of the total import quantity. Frozen and prepared have the same import shares with 28% each. Figure 23 below shows the import share of each cod product in the European markets.

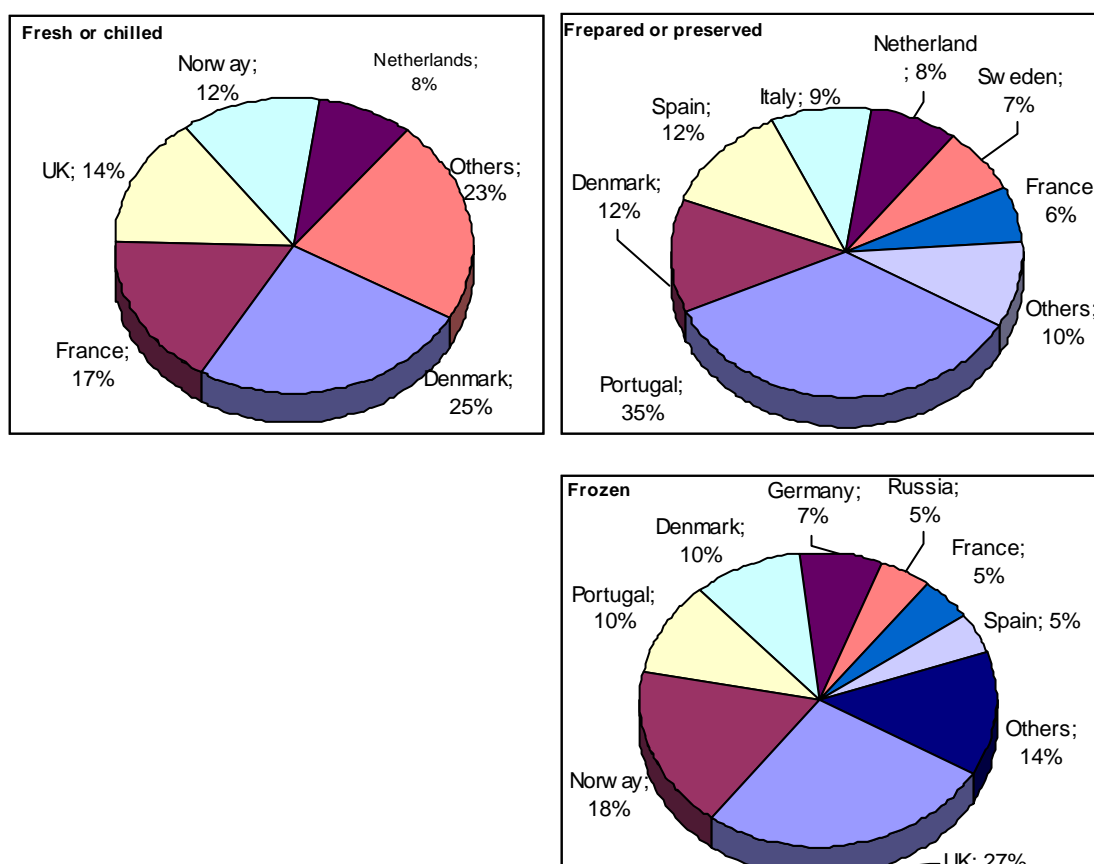


Figure 23: Import volume share of fresh/frozen/prepared cod in 2001 by country (FAO 2001).

In 2001, fresh or chilled cod products were imported into Denmark with the highest share (about 27%) of the total import volume in Europe. It is probable that this volume was used for re-export because Denmark also exports this product with the highest share followed by France with 17%, the UK with 14%, Norway with 12%, the Netherlands with 8%, and the remaining 23% for other markets.

Portugal is the market leader in import of prepared or preserved cod with 35% of the total import volume in 2001. Almost all of the prepared or preserved cod products are in the salted form. Denmark and Spain have the same import share of the products with 12% of total volume. The import share of Italy, the Netherlands, Sweden, and France were similar, from 9% to 7% each.

Frozen cod was imported into the UK with 27% of the total import volume in Europe in 2001 followed by Norway with 18%, Portugal and Denmark with 10% each, Germany with 7%, and Russia, France, and Spain with 5% each.

Table 48 shows the net imports of frozen and fresh whitefish annually to the European countries. The table reveals the potential markets and competitors for whitefish

exporters in general and catfish exporters in particular. Prepared whitefish with a low volume in trade is excluded in the table.

Table 48: Net imports of fresh/frozen whitefish, average of 1997-2002, MT (FAO 2001).

Country	Import	Export	Net import
<b>Spain</b>	<b>194,493</b>	<b>53,588</b>	<b>140,905</b>
<b>UK</b>	<b>161,727</b>	<b>64,085</b>	<b>97,642</b>
<b>Portugal</b>	<b>70,479</b>	<b>6,547</b>	<b>63,932</b>
<b>France</b>	<b>69,605</b>	<b>7,051</b>	<b>62,554</b>
<b>Italy</b>	<b>45,974</b>	<b>2,512</b>	<b>43,463</b>
<b>Germany</b>	<b>53,385</b>	<b>41,538</b>	<b>11,847</b>
<b>Belgium</b>	<b>16,491</b>	<b>7,335</b>	<b>9,156</b>
<b>Greece</b>	<b>6,377</b>	<b>219</b>	<b>6,158</b>
Czech Republic	2,553	184	2,368
Austria	1,858	0	1,858
Romania	1,666	0	1,666
Hungary	1,558	0	1,558
Estonia	1,432	269	1,163
Latvia	0	2,438	-2,438
Sweden	16,940	22,573	-5,633
Ireland	5,054	13,025	-7,971
<b>Denmark</b>	<b>84,485</b>	<b>97,249</b>	<b>-12,765</b>
<b>Netherlands</b>	<b>44,624</b>	<b>60,694</b>	<b>-16,071</b>
<b>Faroe Islands</b>	<b>2,808</b>	<b>22,053</b>	<b>-19,245</b>
<b>Russia</b>	<b>4,714</b>	<b>34,256</b>	<b>-29,542</b>
<b>Norway</b>	<b>101,384</b>	<b>134,011</b>	<b>-32,627</b>
<b>Iceland</b>	<b>6,599</b>	<b>77,490</b>	<b>-70,891</b>
<b>Total Europe</b>	<b>1,117,541</b>	<b>669,382</b>	<b>448,159</b>

The net import of fresh and frozen whitefish in Europe is about 448 thousand MT on average. Spain is the biggest market with a net import of 141 thousand MT, followed by the UK with 98 thousand MT, Portugal with 64 thousand MT, France with 63 thousand MT, Italy with 43 thousand MT, Germany with 12 thousand MT, and Belgium with 9 thousand MT. These are probably target markets for whitefish exporters. Besides these markets, Greece, the Czech Republic, Austria, Romania, Hungary, and Estonia also have positive net imports of whitefish with an average of 15 thousand MT per year.

Iceland has the highest net export with 71 thousand MT per year on average followed by Norway with 33 thousand MT, Russia with 30 thousand MT, the Faroe Islands with 19 thousand MT, the Netherlands with 16 thousand MT, and Denmark with 13 thousand MT. These are the main competitors of whitefish exporters. Ireland, Sweden, and Latvia also have positive net exports with a total of 16 thousand MT per year on average.

### 6.3 Catfish markets

Catfish products are not popular in the world in general and Europe in particular. There are some countries that produce catfish in both capture and aquaculture such as the United States, Thailand, Indonesia, Malaysia, Nigeria, Mali, Russia and Vietnam. The species with the highest production are channel catfish, catfish hybrid, torpedo-shaped catfish, striped catfish, North African catfish, pangas catfish, upside-down catfish, glass catfish, and bagrid catfish.

Total catfish production in 2001 was 535 thousands MT, 3% greater than in 2000 and 40% above the 1990 level. Aquaculture accounted for more than 80% of the total catfish production in the period 1992-2001.

Table 49: Aquaculture catfish volume in the world, 1992-2001, 1,000 MT (FAO 2001).<sup>1</sup>

Country	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
US	207	208	199	203	214	238	256	271	269	271
Thailand	38	43	47	56	58	68	69	84	89	87
Indonesia	6	8	10	13	16	24	20	27	32	37
Malaysia	1	1	1	2	2	5	7	11	12	14
Others	62	63	65	64	98	104	45	53	17	18
<b>Total</b>	<b>314</b>	<b>323</b>	<b>322</b>	<b>337</b>	<b>387</b>	<b>438</b>	<b>396</b>	<b>446</b>	<b>419</b>	<b>427</b>

Total catfish aquaculture in the world was 427 thousand MT in 2001, more than 36% higher than in 1992. The United States dominated catfish aquaculture with 200-300 thousand MT per year, accounting for more than 60% of the total aquaculture volume in the world in the period 1992-2001. Thailand is second in catfish aquaculture, but the volume was only between 40-80 thousand MT per year. Malaysia and Indonesia have a small volume of catfish aquaculture with some thousand MT each per year.

The biggest species in aquaculture are channel catfish with more than 60%, torpedo-shaped catfishes with nearly 20%, and catfish hybrid with 14% of the total catfish aquaculture in the period 1992-2001. Catfish capture makes up a very small portion of the total fisheries capture in the world with around 100 thousand MT per year. Nigeria, Mali, Indonesia, and Russia are the countries with the highest volume of catfish capture in the world. This volume is used for domestic consumption. See Table 50 for more details.

Table 50: Capture catfish volume in the world, 1992-2001, 1,000 MT (FAO 2001).

Country	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Nigeria	10	13	19	20	19	24	35	34	22	34
Mali	22	21	20	43	26	25	23	23	35	32
Indonesia	16	16	16	15	18	16	14	16	12	13
Russia	6	4	4	5	6	7	9	7	7	7
Others	14	19	13	16	14	15	17	19	22	22
<b>Total</b>	<b>69</b>	<b>73</b>	<b>72</b>	<b>99</b>	<b>82</b>	<b>87</b>	<b>98</b>	<b>99</b>	<b>99</b>	<b>108</b>

<sup>1</sup> Data on Vietnamese catfish production is not available in FAO, the total does not include Vietnam.

Three main species of catfish are traded in European markets; European catfish (*Silurus glanis*), African catfish (*Clarias gariepinus*), and channel catfish black bullhead –(*Ictalurus melas*) (Rudiger 1998).

European catfish is caught in rivers and lakes in small, often unrecorded amounts. There are also farming activities, with a production of 350 MT in both Germany and Poland, 300 MT in France, and 25 MT in the Czech Republic in 1997. The fish are of high value in Central and Eastern Europe, but mainly sold regionally in the areas where they are caught and are very popular around the Danube River (Rudiger 1998). European catfish is usually sold chilled, whole or in cuts, retail and wholesale, and is found regionally in restaurants (Rudiger 1998).

African catfish is farmed in warm water plants in the Netherlands and Belgium. In 1997 Dutch production was 1,000 MT and Belgium produced 150 MT. These figures have been stable over recent years. This fish is sold whole and in boneless fillets of various sizes, more often chilled than frozen. It is also smoked. France and Germany are good markets for the product (Rudiger 1998).

Channel catfish is farmed and sold in Italy where production reached the peak of 2,000 MT in 1994, dropping to 400 MT in 1995 and becoming stable at 500 MT in 1996 and 1997 (Rudiger 1998).

The United States is the biggest catfish exporter. The total export volume of US catfish products reached a peak of 295 MT in 1996, dropping to 132 MT in 1997, and only 80 MT in 2001 (FAO statistics). The main markets for US catfish are some European countries with channel catfish. As of 1993, the US catfish industry focused on the German market for introduction of channel catfish. Considerable amounts of money were spent on a marketing campaign to establish the white catfish fillets in catering, restaurant and retail markets. Catfish exports to Germany were 38 MT in 1994 but rose to 238 MT in 1995 and 363 MT in 1996. In 1997, US catfish export declined to 214 MT; the Catfish Institute in Germany put this down to the rising US\$ exchange rate and the end of the American boom which reached its zenith with the Olympic Games in Atlanta in 1996 (Rudiger 1998).

#### **6.4 Summary**

Whitefish is a popular species in Europe. Annually the quantity of whitefish production in Europe is around 5 million MT, accounting for 25% of the total fish production of Europe, and more than half of the whitefish production in the world. Pollock is dominant in production, followed by hake, cod, and whiting. Russia and Norway have the largest production shares of whitefish in Europe. These two countries account for nearly 60% of the total production of Europe.

Whitefish commodities are traded in three kinds of products: frozen, fresh or chilled, and prepared or preserved. In recent years, the quantity of exports of whitefish commodities has been around 800 thousand of MT. In which frozen products have been dominant with nearly 50% of the total export volume of whitefish products. Fresh or chilled lightly have a greater share of export quality compared to prepared or preserved products. Annual revenues from the export of whitefish products in Europe

are around 2.5 billion US\$. The three top countries are Norway, Iceland, and Denmark accounting for 65%-70% of the total export value of whitefish in Europe.

European countries import more than one million MT or more than 3 billion US\$ in value in terms of whitefish annually. The import volume of whitefish commodities exceeds export volume by about 300 thousand MT annually, mainly because of frozen product. Spain imports the highest volume of whitefish products with about 200 thousand MT per year; frozen products constitute more than 50% of the total import volume. The UK market imports about 160 thousand MT; frozen products are dominant with more than 70% of the total import volume. Prepared or preserved products are imported at the highest volume to Portugal with more than 50% of the total 145 thousand MT of import volume of whitefish into this market per year. France imports about 80 thousand MT of whitefish products, half of which are frozen.

Cod (*Gadus morhua*) is a kind of whitefish that tastes similar to catfish. This fish has succulent, white flesh that flakes easily. The volume of cod production in the world has dropped from 1.8 million MT in 1992 to 1.3 million MT in 2001. In which the volume from European production accounted for more than 70%. In recent years a lot of cod stocks have been over-fished. This presents a good opportunity for catfish to fill the gap. Cod is one of the most important species of the Icelandic, Russian and Norwegian fishery industries. Cod products are exported in Europe at around 500 thousand MT per year. Frozen, fresh and prepared products have similar shares.

Cod dominates imports among whitefish commodities with 600-780 thousand MT per year, accounting for 60% of the total import volume. Fresh cod dominates the import quantity of cod products. The countries with the highest volume of cod imports are Denmark, France, the UK, Germany, Spain, Italy, Portugal and Sweden.

Catfish products are not popular in the world in general and Europe in particular. Total catfish production in 2001 was 535 thousand MT, in which aquaculture accounted for 80%. The United States are dominant in catfish production with more than 60% of the total production in the world. Channel catfish was landed with highest volume. As of 1993, the US catfish industry focused on the German market for the introduction of channel catfish. In Europe small quantities of catfish are captured and farmed in rivers and lakes. Almost all of catfish production is used in regional consumption.

In conclusion, there is great potential for Vietnamese catfish exports into European markets if it can substitute and compete with other whitefish. The popular consumption of whitefish, especially cod, is similar to catfish, high demand for whitefish coupled with the decrease in whitefish production because of exhausted resources provide a good opportunity for catfish to enter into these markets.

## 7 SWOT ANALYSIS AND SUGGESTIONS

Vietnamese seafood products are exported to 77 countries and territories. The US and Japan are the largest markets (Vietnam Economy newspaper, Dec.18.2003).

It is important that efforts be made to diversify markets so that exporters do not become too reliant on one market, like the US. The US won a lawsuit last year against Vietnamese seafood exporters dumping catfish on the US market, an allegation Vietnam continues to denounce. This year, 2004, in another anti-dumping case, the US Southern Shrimp Alliance has filed a petition against six countries, including Vietnam, seeking to impose a 30% to 200% tariff on shrimp exports.

European markets have huge potential for Vietnamese seafood but the market share is still modest. Vietnamese enterprises and function-agencies will target European markets in the near future. It is necessary to improve exporting commodities in those markets and aim conduct exporting programmes in the beginning of the developing period as well as avoiding the risk of depending on one unique market.

This chapter will explore the strengths, weaknesses, opportunities and threats for Vietnamese seafood products exported to the European market in order to give suggestions and ideas for seafood enterprises' entrance into this.

### 7.1 SWOT Analysis

#### 7.1.1 *Strengths*

Vietnam has great potential resources to develop its fishery sector. Vietnam has a relatively large water surface area, including 653,000 ha of rivers and canals, 394,000 ha of reservoirs, 85,000 ha of marshes and swamps, 1 million ha of coastal saline land, and 580,000 ha of wet rice fields (Fisheries Ministry of Vietnam). Favourable environment, hard work of farmers, high technology in processing plants, and abundant labours are important factors for the development of the Vietnamese seafood industry to produce high quality and low price of seafood products. Vietnamese fish products have made a good impression in local business circles.

“Vietnam has already made good progress in breaking into the European market. This makes sense for a developing country, which has low cost, rich agriculture fishery resources and a lot of potential” (Vietnam Economy Newspaper, 2004).

Farmers, fishermen, and producers can satisfy requirements from markets regarding quality, diversification, and sanity of products. Tropical seafood products that have a good palate and are high in protein have attached importance in European countries. Vietnamese seafood products have abundant categories of all types of products such as fresh, frozen, canned, value-added, and ready to eat. Being supported by state agencies, Vietnamese producers have understood and corrected quickly when they meet claims from importers and state agencies of importing countries, especially in sanitary issues.

The fisheries sector has directed to update and improve quality standard in order to gain HACCP and ISO certificates. Presently there are 100 seafood enterprises, which qualify to enter European markets (Ministry of Fisheries of Vietnam).



The Ministry of Fisheries plans to set up 12 no-anti-bio residue aqua-product areas in Thanh Hoa, Binh Dinh, Khanh Hoa, Ben Tre, Tien Giang, Dong Thap, An Giang, Bac Lieu and Kien Giang provinces (Ministry of Fisheries of Vietnam). These provinces will produce fresh and high quality products to export into efficient markets such the EU. This is a strong aspect in Vietnamese aquaculture in the near future.

### 7.1.2 Weaknesses

Vietnamese seafood exports to the EU have faced technical barriers such as strict control of chloramphenicol and nitrofurans residues. Satisfying standards of European sanitary is most important to penetrate European markets. Many processing plants of Vietnam are still small in scale. Almost all of them are producing in households. Controls on the aquaculture of farmers are still not strict in some regions. The raw material resources from aquaculture and capture sometimes do not meet the demand of processing plants. These lead to inconsistencies in the quality of raw materials and output products.

However, in recent years Vietnamese enterprises have tried to solve this weakness by cooperating closely with farmers and small plants to advance the technology level of the farmer and control contamination as well as chemical residues

The raw material is usually lower quality due to poor and primitive fishing gears and handling equipment. In addition, the raw material transportation has to transit through many intermediate steps, which also decreases the quality. The raw material from fishing and from aquaculture does not ensure high quality products. The quality of products is not stable in some firms.

Some types of Vietnamese seafood have not whetted European palates. The traditional products in eastern countries with rich protein such as fish sauce (fermented products), and stockfish have not been accepted and are interesting in western countries only due to their odours or habits of consumption.

“Vietnamese seafood exporters have long complained that they lack necessary information about the foreign markets. Without help from trade commissions abroad, it will continue to be difficult for them to promote their products” (Vietnam News Jun 24 p 15). Vietnam has just opened its economy 10 years ago so almost all Vietnamese enterprises have limited experience in foreign markets. The capacity for picking up the latest market information and taste of consumers is a weakness of Vietnamese enterprises. Vietnamese enterprises lack the latest information and necessary business skills even with traditional partners in the EU market.

### 7.1.3 Opportunities

Fishery products have been acknowledged to offer many healthy benefits. The trend of healthy eating in developed countries has underpinned rising demand for seafood and fish. In addition, heart health has become a major issue among modern consumers. Consumption of red meat has declined in many key markets; seafood has stepped into the gap. Over the next five years, the sale of fish and seafood in five countries including France, Germany, Italy, Spain, and the UK will most likely

increase by only around 4%, reaching an estimated volume of 3.2-3.3 million tons in 2004 (Hardy 2001).

Vietnam has an advantage from its geographic position. The EU sees Vietnam as a valuable partner in its approach towards the Asian region. Many European countries such as France, Germany, Spain, and the UK have granted Vietnam priority during its development. The EU is an important market with great potential for Vietnam to promote exports of seafood.

Vietnam-EU relations were officially established in 1990, but the relationship of Vietnam with each EU country had taken shape a long time ago. Vietnam and the EU have been in the process of implementing the cooperative strategy for 2000-2005. The EU has announced that Vietnam will be an important partner in the 21<sup>st</sup> century.

EU expansion will bring about opportunities for Vietnam to boost trade cooperation with EU countries. Ten new members of the EU as of May 2004 are former socialist countries and are traditional partners of Vietnam for many years. The large population of countries such as Poland and Hungary make for good potential markets not only of seafood but also of other agricultural and soft industrial products.

Tariffs on Vietnamese exports to the EU will be unchangeable when the EU expands its members from 15 to 25. The agreements signed between the EU and Vietnam will lay a foundation for enterprises of the new members to establish trade relations with Vietnam.

The EU is one of the world's most open markets to imports of farm products from third countries and especially from developing countries (Directorate General Trade, European Commission) and these markets have a high demand for seafood, especially shrimp.

Tra and basa catfish will have potential markets in Europe. Germany, with a population of 82 million, many of whom are overseas Vietnamese community, is a large market with a huge demand for tra and basa catfish products. Spain is a new market, but some Vietnamese businesses have exported to this country a volume of tra and basa catfish fillets similar to the US market in the past. Other countries such as Belgium, the Netherlands and Switzerland have a huge demand for Vietnamese tra and basa catfish and other seafood (Vietnam Economy Newspapers 2003).

Increasingly hectic lifestyles, smaller households and individual states, and growing numbers of working women are resulting in a greater demand for convenience foods such as processed and prepared fish products. "There is a significant drive throughout many European markets towards increased consumption of added-value products such as fish ready meals and fish delicatessen prepared products" (Hardy 2001). Hand-products have huge potential in seafood processing.

#### *7.1.4 Threats*

The EU is a lucrative market with many technical obstructions. The EU imposes strict requirements on countries and companies that wish to export seafood to its markets, and must maintain their condition to remain on the list. The chloriamphenocol and

nitrofurans residues exceeding EU requirements is a potential threat for Vietnamese exporters. The methods to control and ensure safety are not conducted thoroughly, still having a risk of toxic chemical residues in products. The efforts on producing biological drugs to replace banned chemical substances have not been successful as successful as expected. Chemical substances and feed for cultured items with banned components have been sold in many localities (Vietnam Economy Newspaper, 2003). These do not ensure fresh and safe inputs. The risk of unsatisfied requirements of EU sanitary regulations for importing products is still high.

The second threat to Vietnamese enterprises is the capacity for keeping existing markets. Most seafood enterprises do not have their own trademark for their products. This leads to difficulties in expanding, promoting and protecting the markets (Vietnam Economy Newspaper, 2003).

The strong development in aquaculture of countries such Thailand, India, China, Bangladesh, Ecuador also threatens Vietnamese seafood exporters in the international market.

Table 51 below summarises the SWOT analysis.

Table 51: Summary of the SWOT analysis of the Vietnamese seafood industry.

<p><b><u>Strengths</u></b></p> <ul style="list-style-type: none"> <li>- Low cost, good palate, and high quality products</li> <li>- Diversifying products, satisfying quickly requirements of customers</li> <li>- Potential to develop the no-anti-bio aqua-product areas with high quality raw material</li> </ul>	<p><b><u>Opportunities</u></b></p> <ul style="list-style-type: none"> <li>- Rising demand for seafood in developed countries</li> <li>- EU countries consider Vietnam an important partner</li> <li>- EU expanding in 2004</li> <li>- Shrimp is most important seafood product, and catfish has been introduced in European markets</li> </ul>
<p><b><u>Weaknesses</u></b></p> <ul style="list-style-type: none"> <li>- Many small processing plants have difficulties in satisfying sanitary requirements</li> <li>- Less value added products</li> <li>- Poor handling of raw material post-harvesting both in capture and aquaculture</li> <li>- Europeans are not used to the taste of some traditional products</li> <li>- Lack of market information and business skills of Vietnamese enterprises.</li> <li>- Lack of trademarks for Vietnamese seafood.</li> </ul>	<p><b><u>Threats</u></b></p> <ul style="list-style-type: none"> <li>- Risk of withdrawn licenses of importing rights of enterprises due to unsatisfied sanitary requirements</li> <li>- Loss of existing markets and faith because of limited product trademarks.</li> <li>- Strong competitors such as Thailand, China, India, Bangladesh and Ecuador</li> </ul>

## 7.2 Suggestions

- Control and monitor strictly food sanitary regulations.

The Vietnamese agencies and seafood enterprises have done well in implementing the requirements of the EU on food safety in the past. At the end of 2003 there were 100 seafood enterprises that had qualified to export their products to European markets. But the risk of withdrawn licenses is still high if Vietnamese enterprises do not perceive sanitary regulations as a vital issue.

The Fisheries Ministry should make a plan for transferring some rice-cultivated areas to experimenting with non-chemical aquaculture. The fresh inputs will assure safe output. Moreover fisheries aquaculture with higher effects than rice cultivating is a true forward step to reduce poverty in rural region.

Seafood exporters and producers must meet strict hygiene and safety standards to gain admission to European markets. All fish supplied to processing factories must be accompanied by a certificate of origin. This requires cooperation between processors, farmers, and state agencies.

Vietnamese enterprises should keep good relations with traditional partners to widen their trade relations with newcomers in the EU market. If one domestic enterprise cannot afford to meet requirements of market expansion, it should coordinate with others to complete its goals.

Vietnam should develop early a good regulatory framework for consumer protection. An objective and credible system of risk assessment must be based on independent science.

- Promote trade, expand existing markets, and penetrate new markets

Markets such as France, Spain, Germany, Belgium, Italy, the Netherlands and the UK need to be protected and expanded. These markets are vital for Vietnamese seafood exports. The high quality products are targeted to these markets. These markets have high and stable demand but Vietnamese enterprises have not yet exploited in full their potential.

Vietnam should promote export to traditional markets such as Russia, Poland, the Ukraine, and Hungary. The Russian economy is growing and has been stable in recent years. There is increasing demand for imports, especially food commodities. In recent years these markets have not been penetrated as much as possible. To diversify risk form different markets, it is necessary to promote exports into these markets. Moreover Russia, the Ukraine and Romania have a long history of trade with Vietnam. These traditional markets do not require high quality products or have strict sanitary regulations like others such as the EU.

It is necessary to support finance for Vietnamese exporters through the Vietnam Association of Seafood Exporters and Producers (VASEP). Many enterprises face financial difficulties in looking for new markets, especially small firms. These firms cannot afford to advertise, exhibit, and research markets abroad.

- Construct trademarks for Vietnamese seafood products

Until now, most seafood enterprises have not built their own trademarks. The main reason for this is that Vietnamese seafood enterprises have to export through intermediate countries or through importer-owned distributing channels. Vietnamese exporters have to pack their products using these intermediate trademarks. These intermediaries already have experience and positioning in the world markets (Vietnam Economy Newspapers, Dec.12.2003). Lack of trademarks of products is one of the main barriers that almost all Vietnamese enterprises are confronting. The Vietnamese products cannot compete with other competitors if they do not have their own trademark.

Constructing trademarks for the products should be a long-term strategy development. This work must be synchronous with all stages from breeding collection, culturing, harvesting to the post-harvesting handling stage. Moreover, to appear in the markets it is necessary to build wide distributing channels to give consumers products with careful collection and interesting wrappings. Cooperation between scientists, farmers, distributors, advertisers, and state agencies is necessary in order to promote the trademark for products in local markets and regional markets.

- Promote the production of value added products

Value added products still account for a small portion of the total export category. Frozen or chilled products are the main export items accounting for more than 80% of the total. The frozen products fetch a low price but have high transportation costs.

In order to protect the market and expand into new markets, it is necessary to diversify the products. Value added products with convenience usage and good packaging are new trends for seafood producers and exporters. These products have advantages of transportation and storage as well as a high price.

Moreover, Vietnamese exporters should target the markets for older consumers and children. The quality of life is higher; people live healthier and active lives until a much later age. Seafood is known as a healthy product with substantial nutritional benefits. To meet the demands of the childrens market, seafood products should promote a safe, such as boneless and skinless, easy to eat, as well as a user-friendly image.

### 7.3 Summary

Vietnam has great potential to enter the European seafood market but also has a strong threat of losing this market. In order to keep and expand their market share, enterprises and agencies must take great care to meet food sanitary regulations. The vital markets are France, Spain, Germany, Belgium, Italy, and the UK. Markets such as Russia, Poland, the Ukraine and Hungary also need a penetrating strategy.

Constructing the trademark for Vietnamese seafood products must be done as soon as possible. This issue needs the support of the government and the awareness and effort of enterprises. Diversifying products and changing the portion of export products towards increasing value added items are a main trend in the near future.

## 8 CONCLUSION

Vietnam has huge potential in fisheries development both marine capture and aquaculture. The fisheries sector has created one million jobs each year and earned more than 2 billion US\$ from export. Seafood has the third highest export value in the economy of Vietnam. Looking for new markets to diversify risks from depending on a single market is necessary for Vietnam.

The European continent includes 45 countries with nearly nine hundred million people and is a huge potential market for seafood exports. In addition almost of all countries in Europe have high incomes. These markets demanded high quality products.

Fisheries production in Europe has increased constantly in the past decades but it has not been able to supply the increasing demand for seafood products in the continent. In recent years, the fisheries landing volume of Europe has been about 18 million MT per year. In which 90% is exploited from natural resources and only 10% from aquaculture. Most of the landing volume was produced from countries such as Russia, Norway, Iceland, and Denmark. Freshwater fish is a small portion of the landing volume.

European countries export fishery commodities from 15 to 19 billion US\$ in value and from 8 to 10 million MT in volume annually. Most of them were exported into other European countries. Iceland, Norway, Denmark, and Russia are the largest seafood exporters.

European countries import fisheries products for 22-23 billion US\$ in value and around 11 million MT in volume annually. Most of them were used for food consumption. The annual net import value of seafood imports in Europe are about 4 billion US\$. Net import per total supply is about 17%. The biggest importers are Spain, France, the UK, Germany, Belgium, Italy, and Portugal.

Average seafood consumption of European people is around 20 kg per year. This number is much higher than the average 15 kg of the world as a whole. The countries with highest consumption per capita are Iceland (90), Portugal (76), Norway (51), Spain (45), Malta (40), Finland (35), France (31) and Sweden (31).

European shrimp production expanded very impressively during the past decades. In 2001 the total catches reached 239 thousand MT, nearly two times the catches in 1980. The three main species landed are northern prawn (*Pandalus borealis*), common shrimp (*Crangon crangon*), and deepwater rose shrimp (*Parapenaeus longirostris*). In which *Pandalus borealis* species accounts for 70% of the total landing volume. The highest landing countries are Norway, Iceland, Spain, Russia, and Faroe Islands.

In 10 years from 1992-2001 imports of shrimp to Europe increased by 50% and reached peak of 667 thousand MT in 2001. Frozen products account for more than 70% of the total import volume of various shrimp species. France, Spain, Denmark, the UK, Belgium, Italy, and Germany are the biggest shrimp importers in Europe.

The price of fisheries products in general and shrimp products in particular have decreased in recent years. The main reason is the advantage of aquaculture in developing countries.

In the past 10 years 1992-2001 whitefish production had a stable production volume with 5-6 million MT per year. The production has dropped slightly in recent years with a volume of 4.8 million MT. Russia and Norway have the largest production share of whitefish in Europe. These two countries account for nearly 60% of the total European production. Pollock and cod are the dominating species in production. But these two fisheries have been over-exploited in recent years. Whiting now has the highest share of whitefish production. The decrease in cod landings due to exhausted resources presents opportunities for catfish entering the European markets because these two species have similar tastes, succulent and white flesh.

Annually European countries have a net import of frozen whitefish of nearly 300 thousand MT. Fresh and prepared products are equal in import and export. The export value of whitefish is about 2.6 billion US\$ and the value of whitefish imports is about 3.3 billion US\$ per year. Norway, Iceland, and Denmark are the biggest export countries; the UK, Portugal, Spain, Italy, France, and Germany are the biggest import countries.

Catfish products are not popular in the world in general and Europe in particular. Catfish production in the world is more than 500 thousand MT per year. More than half of the quantity was produced from aquaculture in the United States with the channel catfish species. Catfish is captured in some European countries but is used in the region of landing. As of 1993, the US catfish industry focused on the German market for the introduction of channel catfish. They had a marketing campaign to establish the white catfish fillets in catering, restaurants and retail. But until now the campaign seems not to have been successful. There is huge potential for Vietnamese catfish exports into the European market if it can substitute and compete with other whitefish, especially cod.

Demand for seafood has increased in Europe because of increasing concern for healthy eating. The changing demographic and societal trends lead to an increase in the demand for value added products in developed countries.

To expand its share in the European market, the seafood industry of Vietnam needs to exploit its advantages and overcome the disadvantages. Low cost, high quality and diversifying products, rising demand for seafood in developed countries and friendly partners in the European countries are the primary strengths and opportunities of the Vietnamese seafood industry. On the other hand, issues of high sanitary standards, handling of raw material, lack of information on export markets, weak skills in foreign markets of businessmen, and lack of product trademarks are the main weaknesses and threats of the Vietnamese seafood industry.

Based on studying the European seafood market and the SWOT analysis, the project offers the following suggestions for Vietnamese seafood:

- Control and monitor strictly food sanitary regulations
- Promote trade, expand existing markets, and penetrate new markets
- Construct the trademark for Vietnamese seafood products



- Promote to produce value added products.

There are still great opportunities for Vietnamese seafood exporters expanding their share in the existing markets such as France, Spain, Italy, Germany, the UK, Portugal, Belgium, and Luxembourg. The markets such as Sweden, Poland, the Netherlands, Switzerland, Denmark, Greece, and Russia also have potential to penetrate in the future.

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