World Surimi Market
World Surimi Market

by

Benoit VIDAL-GIRAUD
Denis CHATEAU

(April, 2007)

The GLOBEFISH Research Programme is an activity initiated by FAO's Fish Utilisation and Marketing Service, Rome, Italy and financed jointly by:

- NMFS (National Marine Fisheries Service), Washington, DC, USA
- FROM, Ministerio de Agricultura, Pesca y Alimentación, Madrid, Spain
- Ministry of Food, Agriculture and Fisheries, Copenhagen, Denmark
- European Commission, Directorate General for Fisheries, Brussels, EU
- Norwegian Seafood Export Council, Tromsoe, Norway
- OFIMER (Office National Interprofessionnel des Produits de la Mer et de l’Aquaculture), Paris, France
- ASMI (Alaska Seafood Marketing Institute), USA
- DFO (Department of Fisheries and Oceans), Canada
Surimi industrial technology developed by Japan in the early 1960s promoted the growth of the surimi industry. The successful growth of the industry was based on the Alaska pollock and walleye pollock. Subsequently, production of Alaska pollock surimi declined and was supplemented by surimi production using species other than Alaska pollock.

Currently, 2-3 million metric tonnes of fish from around the world, amounting to 2-3 percent of the world fisheries supply, are used for the production of surimi and surimi-based products.

Given the diversity of available information, significant uncertainty remains about global output of surimi and surimi-based products. However, this study attempts to fill the gaps in information and to propose an estimate of output. Overall, it aims to provide an up-to-date and general overview rather than a detailed rundown on all aspects of the global surimi sector. It provides a general description of the production and trade of both surimi and surimi-based products by the main producer countries, as well as the main companies within each producer country. It summarizes current and future developments in the industry. The potential global growth for surimi and surimi products in huge!

The United States of America and Japan are major producers of surimi and surimi-based products. Thailand has become an important producer. China’s role as producer is increasing. Many newcomers to the surimi industry have emerged, including Viet Nam, Chile, the Faeroe Islands, France and Malaysia. Given the demand to come, without a doubt, big globalized American and Asian companies will continue to invest in surimi production development. As for every producer and consumer country, the big question is “What will be the future world availability of surimi raw material and its price?”

Acknowledgement: The report was edited by Linda Mitchell and the final layout version was prepared by Tony Piccolo GLOBEFISH.
# TABLE OF CONTENT

1. INTRODUCTION ................................................................................................................................. 1

2. THE PRODUCTION OF SURIMI .......................................................................................................... 2

## 2.1. Surimi world production: general overview ............................................................................. 1

### 2.1.1. Technology: principal aspects ............................................................................................ 1

### 2.1.2. Raw materials: main species and new ones ........................................................................ 2

### 2.1.3. Surimi grade system .......................................................................................................... 3

### 2.1.4. World surimi production .................................................................................................. 4

### 2.1.5. Surimi trade ..................................................................................................................... 7

## 2.2. Japan ........................................................................................................................................... 10

### 2.2.1. Characteristics of production ......................................................................................... 10

### 2.2.2. Raw material ................................................................................................................... 10

### 2.2.3. Surimi trade ..................................................................................................................... 10

### 2.2.4. Frozen surimi market prices ......................................................................................... 13

### 2.2.5. Main actors ..................................................................................................................... 17

### 2.2.6. Current and future developments ................................................................................. 17

## 2.3. United States of America ........................................................................................................... 17

### 2.3.1. Characteristics of production ......................................................................................... 17

### 2.3.2. Raw material .................................................................................................................. 18

### 2.3.3. Surimi trade ..................................................................................................................... 19

### 2.3.4. Main actors ..................................................................................................................... 20

### 2.3.5. Current and future developments ................................................................................. 21

## 2.4. Thailand ...................................................................................................................................... 21

### 2.4.1. Main characteristics of production ................................................................................. 21

### 2.4.2. Raw materials .................................................................................................................. 21

### 2.4.3. Surimi trade ..................................................................................................................... 22

### 2.4.4. Main actors ..................................................................................................................... 25

### 2.4.5. Current and future developments ................................................................................. 25

## 2.5. People’s Republic of China ........................................................................................................ 25

### 2.5.1. Main characteristics of production ................................................................................. 25

### 2.5.2. Raw materials .................................................................................................................. 26

### 2.5.3. Surimi trade ..................................................................................................................... 26

### 2.5.4. Main actors ..................................................................................................................... 27

### 2.5.5. Current and future developments ................................................................................. 27

## 2.6. Viet Nam ...................................................................................................................................... 27

### 2.6.1. Main characteristics of production ................................................................................. 27

### 2.6.2. Raw materials .................................................................................................................. 28

### 2.6.3. Surimi trade ..................................................................................................................... 28

### 2.6.4. Main actors ..................................................................................................................... 28

### 2.6.5. Current and future developments ................................................................................. 28

## 2.7. India ............................................................................................................................................. 28

### 2.7.1. Main characteristics of production ................................................................................. 28

### 2.7.2. Raw materials .................................................................................................................. 28

### 2.7.3. Surimi trade ..................................................................................................................... 28

### 2.7.4. Main actors ..................................................................................................................... 29

### 2.7.5. Current and future developments ................................................................................. 29

## 2.8. Chile ............................................................................................................................................. 29

### 2.8.1. Main characteristics of production ................................................................................. 29

### 2.8.2. Raw materials .................................................................................................................. 29
### 2.8.3. Surimi trade

- Main characteristics of production: 30
- Raw materials: 30
- Surimi trade: 30
- Main actors: 30
- Current and future developments: 30

### 2.8.4. Main actors

- World: 41
- Main producing countries: 41
- Main markets: 41
- Surimi products trade: 41
- European Union trade barriers: 41

### 2.9. Argentina

- Main characteristics of production: 30
- Raw materials: 30
- Surimi trade: 30
- Main actors: 30
- Current and future developments: 30

### 2.10. Faeroe Islands

- Main characteristics: 31
- Raw materials: 31
- Surimi trade: 31
- Main actors: 31
- Current and future developments: 31

### 2.11. European Union

- Main characteristics: 32
- Raw materials: 32
- Surimi trade: 32
- Main actors: 32
- Current and future developments: 32

### 2.12. Other surimi producers

- Peru: 37
- Republic of Korea: 38
- Malaysia: 40
- Indonesia: 40

### 3. SURIMI-BASED PRODUCTS: PRODUCTION AND MARKETS

#### 3.1. World: general outlines

- Production of surimi-based products: 41
- Main producing countries: 41
- Main markets: 41
- Surimi products trade: 42
- European Union trade barriers: 42

#### 3.2. Japan

- National production: 42
- Surimi products trade: 43
- Consumption trends: 43
- Main actors: 46
- Current and future developments: 46

#### 3.3. Republic of Korea

- National production: 47
- Surimi products trade: 48
- Consumption trends: 49
- Main actors: 49
- Current and future development: 50

#### 3.4. Thailand

- National production: 50
- Surimi products trade: 50
- Consumption trends: 51
- Main actors: 51
- Current and future development: 52

#### 3.5. People’s Republic of China

- National production: 52
- Surimi products trade: 52
4. CONCLUSION ...................................................................................................................................83
5. REFERENCES ....................................................................................................................................85

APPENDIX 1: CODE OF PRACTICE FOR FROZEN SURIMI ..........................................................87
APPENDIX 2: LIST OF SPECIES USED FOR SURIMI PRODUCTION ........................................89
APPENDIX 3: GEOGRAPHIC DISTRIBUTION OF MAIN SURIMI FISH SPECIES .........................91
APPENDIX 4: EXAMPLES OF SURIMI SPECIFICATIONS ..............................................................93
APPENDIX 5: TROPICAL SURIMI FISHES ....................................................................................94
APPENDIX 6: WORLD MAP OF SURIMI AND SURIMI PRODUCTS TRADE .................................95
APPENDIX 7: EXAMPLES OF SURIMI-BASED PRODUCTS .........................................................96
IN ASIAN COUNTRIES .........................................................................................................................96

APPENDIX 8: LIST OF MAIN ACTORS BY COUNTRY & THEIR ADDRESSES ..............................98

A8.1 : JAPAN ......................................................................................................................................98
A8.2 : THAILAND ...............................................................................................................................106
A8.3 : REPUBLIC OF KOREA .............................................................................................................109
A8.4 : PEOPLE’S REPUBLIC OF CHINA .........................................................................................109
A8.5 : INDIA .......................................................................................................................................111
A8.6 : VIET NAM ...............................................................................................................................112
A8.7 : REPUBLIC OF CHINA ...........................................................................................................112
A8.8 : MALAYSIA ..............................................................................................................................113
A8.9 : CHILE ......................................................................................................................................113
A8.10 : PERU .....................................................................................................................................114
A8.11 : UNITED STATES OF AMERICA ............................................................................................114
A8.12 : FAEROE ISLANDS ..................................................................................................................115
A8.13 : NORWAY ...............................................................................................................................116
A8.14 : FRANCE .................................................................................................................................116
A8.15 : ITALY .....................................................................................................................................117
A8.16 : LITHUANIA ............................................................................................................................119
A8.17 : UNITED KINGDOM .................................................................................................................119
A8.18 : BELGIUM ...............................................................................................................................120
A8.19 : LATVIA ..................................................................................................................................120
1. INTRODUCTION

Surimi is a product of Japanese origin, derived from a traditional Japanese way of using and preserving fresh fish. The word ‘surimi’ comes from the Japanese words ‘suru’ meaning ‘to process’ and ‘mash/mi’ meaning ‘meat’. Surimi is a paste of minced, processed fish used in the preparation of imitation seafood. The earliest recorded surimi processing procedure was found in a Japanese cookbook written in 1528.

Surimi fish paste products have been made by hand for centuries. A freezing process for surimi, invented in 1960, allowed the surimi industry and markets to expand. The expansion was based mainly on vast resources of the Alaska pollock.

Presently, surimi production uses 2–3 million metric tonnes of fish from around the world, amounting to 2–3 percent of the world fisheries supply.

It is important to distinguish between surimi and surimi product:

• **surimi**: frozen block of fish protein made from different fish species,
• **surimi-based product or surimi product**: fresh or frozen final product, such as the popular imitation crabmeat sticks made of surimi mixed with other raw material.

By making this distinction at the outset, the author of this study wishes to avoid the frequent confusion between the terms ‘surimi’ and ‘surimi product’ or ‘surimi-based product’.

This brief introduction to the history of surimi and surimi products and the development of the surimi industry is the first part of this study. Part 2 provides a general description of *surimi sensu stricto* (surimi in the strict sense) and of its production, including the raw materials used, and its trade by the main surimi producer countries. It lists the main companies producing surimi in each producer country and summarizes current and future developments in the industry. Part 3 deals with *surimi products*, and their production and trade by the main producer countries. It discusses consumption trends of the various surimi products. The main companies producing surimi products in each producer country are outlined. Current and future developments in the industry are summarized.

Countries that are producers of both surimi and surimi products are discussed in both Part 2 and Part 3 of this study.

Unfortunately, the information available on both surimi and surimi products is very diverse, even with regard to important points. This study can only aim to provide an up-to-date and general overview rather than a detailed rundown on all aspects of the global surimi sector.

In conclusion, this study analyses the facts and looks at what the possibilities for surimi and surimi products might be in the future.

2. THE PRODUCTION OF SURIMI

2.1. Surimi world production: general overview

2.1.1. Technology: principal aspects

Surimi can be produced either on fishing boats or in land-based manufacturing plants.

The principal steps in the surimi process are:

• sorting the fish by species and by size as necessary,
• de-heading, gutting, de-boning, skinning and filleting the fish to separate the flesh,
• mincing the fish flesh,
• washing the fish flesh (many times) to remove undesirable water-soluble materials, such as fats, inorganic salts and some proteins,
• refining the fish flesh to remove any residual materials such as skin, bones and scales,
• de-watering the fish flesh in a screw press,
• mixing the fish flesh with cryoprotective compounds, such as sugar and sorbitol, and
• freezing the fish flesh into blocks and packing it.

Further details on the technological aspects of this process are provided in Appendix 1.

2.1.2. Raw materials: main species and new ones

Surimi industrial technology developed by Japan in the early 1960s promoted the growth of the surimi industry. The successful growth of the industry, based on the Alaska pollock or walleye pollock (Theragra chalcogramma), stimulated the production of Alaska pollock fisheries in the entire North Pacific area. For the most part the Japanese fleet, and to a lesser extent, the fleets of the former Soviet Union and of South Korea played a major role in the development of the surimi industry.

Table 2.1-1: Alaska pollock world fisheries evolution by main countries

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>1,409</td>
<td>656,646</td>
<td>1,432,900</td>
<td>1,293,939</td>
<td>1,182,438</td>
<td>1,442,170</td>
<td>1,515,515</td>
<td>1,524,954</td>
<td>1,519,928</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russian Federation (USSR -&gt;1987)</td>
<td>109,200</td>
<td>324,700</td>
<td>697,000</td>
<td>1,975,000</td>
<td>2,111,000</td>
<td>3,343,054</td>
<td>2,863,937</td>
<td>2,208,410</td>
<td>1,215,065</td>
<td>1,165,016</td>
<td>826,707</td>
<td>1,005,888</td>
<td>849,649</td>
</tr>
<tr>
<td>Japan</td>
<td>379,400</td>
<td>689,900</td>
<td>2,346,700</td>
<td>2,677,300</td>
<td>1,552,429</td>
<td>1,533,170</td>
<td>871,400</td>
<td>3,385,097</td>
<td>300,001</td>
<td>2,418,801</td>
<td>2,132,254</td>
<td>2,196,852</td>
<td>2,393,728</td>
</tr>
<tr>
<td>South Korea</td>
<td>18,500</td>
<td>26,700</td>
<td>13,400</td>
<td>387,801</td>
<td>286,158</td>
<td>451,305</td>
<td>321,496</td>
<td>554,888</td>
<td>86,143</td>
<td>197,396</td>
<td>24,772</td>
<td>22,125</td>
<td>20,061</td>
</tr>
<tr>
<td>China (PRC)</td>
<td>20,000</td>
<td>249,459</td>
<td>60,338</td>
<td>39,665</td>
<td>11,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>69,004</td>
<td>148,056</td>
<td>226,969</td>
<td>563,797</td>
<td>94,015</td>
<td>77,872</td>
<td>62,752</td>
<td>64,433</td>
<td>61,993</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>505,500</td>
<td>1,082,300</td>
<td>3,057,100</td>
<td>4,020,161</td>
<td>4,020,000</td>
<td>6,132,000</td>
<td>5,756,000</td>
<td>4,809,000</td>
<td>2,683,000</td>
<td>3,144,100</td>
<td>2,654,000</td>
<td>2,487,000</td>
<td>2,691,000</td>
</tr>
</tbody>
</table>

Figure 2.1-1: Alaska pollock world fisheries evolution by main countries
The production of the Alaska pollock fisheries increased from 3 million metric tonnes in 1970 to 6.7 million metric tonnes in 1986 and 1987, but then decreased to 2.7 million metric tonnes in 2004, because of overfishing (Table 2.1-1 and Figure 2.1-1).

During the 1980s, the Exclusive Economic Zone (EEZ) settlement ‘Americanized’ most of the remaining Alaska pollock resources. Since the late 1980s, limited supplies of Alaska pollock and a huge increase in demand for surimi brought about the exploitation of species other than Alaska pollock. Technology now makes it possible to use various species, and even those with a high lipid level, such as pelagic fishes, in the production of both surimi and surimi-based products.

Presently, various species other than Alaska pollock are used for surimi production. They now account for about 50 percent of total surimi production and include:
- threadfin bream (*Nemipterus japonicus*), commonly known as ‘itoyori’, and the second most used raw material for surimi production,
- other tropical species such as lizard fish (*Saurida tumbil*), known as ‘eso’, and big eye (*Priacanthus spp*), known as ‘kinmedai’,
- hoki (*Macruronus novaezelandiae*),
- Canadian Pacific hake or Pacific whiting (*Merluccius productus*),
- jack mackerel (*Trachurus murphyi*),
- Atka mackerel (*Pleurogrammus monopterygius*),
- sardine (*Sardinia melanostrichus*),
- northern blue whiting (*Micromesistius poutassou*),
- southern blue whiting (*Micromesistius australis*),
- Peruvian anchovy, white anchovy, American grondin (*Prionotus stephanoprys*), bereche (*Larimus pacificus*), chiri (*Peprilus medius*), barracuda, sea eel and sole.

Even non-fish species such as giant squid (*Dosidicus gigas*) are now used. Producers are now beginning to exam opportunities to use farmed fish for surimi production.

The various species used for surimi production are listed in Appendix 2, with geographical repartition in Appendix 3.

The yields of various species differ, depending on fish characteristics and targeted surimi quality. For Alaska pollock or threadfin bream, for instance, the yield is 22–24 percent of whole weight, meaning that at least 4 kg of whole fish are needed to produce 1 kg of surimi. Raw material price increases and market pressure necessarily lead to improved yields, even at the expense of quality. During the past ten years, the yield of Alaska pollock for surimi has improved from less than 20 percent to more than 30 percent.

2.1.3. *Surimi grade system*

The quality of surimi is determined by the following main characteristics:
- its gel-forming properties, as determined by texturometry testing,
- its color: the whiter the color, the higher the quality,
- its purity: the more complete the absence of blood, skin and brown meat, the greater the purity,
- its regularity, and
- its bacteriological aspect.

Theoretically, these characteristics are codified in a surimi grade system. In practice, they may vary greatly from one raw material to another, as surimi may vary from one supplier to another.

There are three grades for pollock surimi:
- primary grade (SA, FA, A) using the first extraction,
• secondary grade (KA) refined a second time,
• recovery grade (KB, RA) using frame meat, which may have some protease activity.

Another factor determining surimi quality is the time lapse between fish catch and processing. Because an increase in time lapse degrades quality, sea-processed surimi is more greatly valued.

The use of an increasing variety of species for surimi production has resulted in the presence of many different surimi qualities on the global market (see examples in Appendix 4). Producers of surimi-based products have learned to change product formulation to use a variety of species. They may also mix different qualities to supply markets with a good balance between quality and price.

2.1.4. World surimi production

It is very difficult to have an accurate idea of world surimi production. The statistics of the Food and Agriculture Organization (FAO) are the only statistics available that theoretically provide complete monitoring of the activity of the main surimi producer countries.

According to FAO statistics, surimi has a single, exclusive category: ‘fish minced (= surimi), frozen’ (Table 2.1-2 and Figure 2.1-2). This category includes all American surimi production but excludes, for instance, production from Thailand, France and other countries.

<table>
<thead>
<tr>
<th>Table 2.1-2: World surimi production estimation (exclusive category)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WORLD SURIMI PRODUCTION BY MAIN COUNTRIES (exclusive category)</strong></td>
</tr>
<tr>
<td><em><em>(Source: FAO Statistics</em>)</em>*</td>
</tr>
<tr>
<td>China (PRC)</td>
</tr>
<tr>
<td>USA</td>
</tr>
<tr>
<td>China (RC)</td>
</tr>
<tr>
<td>Japan</td>
</tr>
<tr>
<td>Chile</td>
</tr>
<tr>
<td>Spain</td>
</tr>
<tr>
<td>Russian Federation</td>
</tr>
<tr>
<td>Others</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

(* Include only ‘fish minced (= surimi), frozen’ category.)

Figure 2.1-2: World surimi production estimation (exclusive category)

(* Include only ‘fish minced (= surimi), frozen’ category.)
To ‘capture’ the total production for the countries, it is necessary also to include other categories of frozen fish meat: ‘hake minced, frozen’, ‘saithe (= pollock) minced, frozen’, ‘cod minced, frozen’, ‘fish meat, whether or not minced, frozen, nei’, ‘fish meat, whether or not minced, fresh, chilled, frozen, nei’, ‘cod meat frozen’, ‘Alaska pollock minced, frozen’, ‘haddock minced, frozen’ and others species ‘… minced, frozen’.

Table 2.1-3: World surimi and other fish meat production by main countries

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>China (PRC)</td>
<td>46 810</td>
<td>58 526</td>
<td>92 366</td>
<td>106 001</td>
<td>31 601</td>
<td>111 603</td>
<td>129 650</td>
<td>114 422</td>
<td>131 722</td>
<td>131 722</td>
<td>275 381</td>
</tr>
<tr>
<td>USA</td>
<td>278 233</td>
<td>200 006</td>
<td>263 790</td>
<td>255 824</td>
<td>231 669</td>
<td>269 824</td>
<td>302 323</td>
<td>280 150</td>
<td>284 157</td>
<td>265 552</td>
<td>252 479</td>
</tr>
<tr>
<td>China (RC)</td>
<td>28 535</td>
<td>31 500</td>
<td>25 259</td>
<td>36 417</td>
<td>45 972</td>
<td>36 928</td>
<td>50 959</td>
<td>42 106</td>
<td>64 877</td>
<td>176 202</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>149 384</td>
<td>154 554</td>
<td>129 086</td>
<td>143 623</td>
<td>145 936</td>
<td>125 162</td>
<td>114 412</td>
<td>104 435</td>
<td>98 712</td>
<td>215 163</td>
<td>103 938</td>
</tr>
<tr>
<td>Thailand</td>
<td>54 000</td>
<td>64 000</td>
<td>55 000</td>
<td>72 000</td>
<td>75 500</td>
<td>82 000</td>
<td>84 062</td>
<td>98 665</td>
<td>112 344</td>
<td>110 683</td>
<td>89 501</td>
</tr>
<tr>
<td>Chile</td>
<td>14 756</td>
<td>26 977</td>
<td>20 958</td>
<td>24 193</td>
<td>33 220</td>
<td>22 902</td>
<td>26 854</td>
<td>34 003</td>
<td>41 820</td>
<td>54 813</td>
<td>62 873</td>
</tr>
<tr>
<td>Norway</td>
<td>2 900</td>
<td>3 774</td>
<td>8 280</td>
<td>4 992</td>
<td>5 822</td>
<td>5 040</td>
<td>5 900</td>
<td>5 110</td>
<td>5 021</td>
<td>5 000</td>
<td>5 000</td>
</tr>
<tr>
<td>France</td>
<td>607</td>
<td>11 808</td>
<td>6 066</td>
<td>9 605</td>
<td>10 341</td>
<td>11 349</td>
<td>12 000</td>
<td>11 981</td>
<td>10 559</td>
<td>10 242</td>
<td>10 943</td>
</tr>
<tr>
<td>Spain</td>
<td>3 479</td>
<td>4 321</td>
<td>5 263</td>
<td>7 820</td>
<td>12 146</td>
<td>13 432</td>
<td>7 220</td>
<td>9 821</td>
<td>6 113</td>
<td>7 377</td>
<td>9 593</td>
</tr>
<tr>
<td>Indonesia</td>
<td>4 355</td>
<td>4 450</td>
<td>3 166</td>
<td>2 170</td>
<td>2 781</td>
<td>2 173</td>
<td>2 910</td>
<td>3 073</td>
<td>5 054</td>
<td>5 426</td>
<td>9 563</td>
</tr>
<tr>
<td>Iceland</td>
<td>6 775</td>
<td>5 999</td>
<td>4 055</td>
<td>3 434</td>
<td>4 418</td>
<td>4 196</td>
<td>4 313</td>
<td>4 180</td>
<td>4 288</td>
<td>4 940</td>
<td>5 821</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>32 250</td>
<td>49 130</td>
<td>71 070</td>
<td>55 570</td>
<td>46 809</td>
<td>48 380</td>
<td>30 444</td>
<td>15 390</td>
<td>6 281</td>
<td>6 403</td>
<td>5 451</td>
</tr>
<tr>
<td>Denmark</td>
<td>3 297</td>
<td>4 078</td>
<td>3 486</td>
<td>2 405</td>
<td>3 219</td>
<td>2 876</td>
<td>2 666</td>
<td>3 024</td>
<td>4 313</td>
<td>6 616</td>
<td>5 363</td>
</tr>
<tr>
<td>New Zealand</td>
<td>4 236</td>
<td>6 674</td>
<td>7 028</td>
<td>6 884</td>
<td>8 722</td>
<td>9 878</td>
<td>7 565</td>
<td>10 915</td>
<td>10 906</td>
<td>6 054</td>
<td>5 138</td>
</tr>
<tr>
<td>Norway</td>
<td>2 990</td>
<td>3 774</td>
<td>8 280</td>
<td>4 992</td>
<td>5 822</td>
<td>5 040</td>
<td>5 900</td>
<td>5 110</td>
<td>5 021</td>
<td>5 000</td>
<td>5 000</td>
</tr>
<tr>
<td>India</td>
<td>222</td>
<td>342</td>
<td>738</td>
<td>629</td>
<td>2 092</td>
<td>3 901</td>
<td>4 197</td>
<td>3 816</td>
<td>3 642</td>
<td>5 830</td>
<td>2 100</td>
</tr>
<tr>
<td>Others</td>
<td>14 955</td>
<td>21 413</td>
<td>17 498</td>
<td>24 137</td>
<td>26 327</td>
<td>24 663</td>
<td>18 427</td>
<td>18 818</td>
<td>13 878</td>
<td>13 519</td>
<td>20 431</td>
</tr>
<tr>
<td>TOTAL</td>
<td>646 993</td>
<td>651 580</td>
<td>717 017</td>
<td>759 353</td>
<td>722 062</td>
<td>808 061</td>
<td>809 668</td>
<td>786 755</td>
<td>795 303</td>
<td>952 743</td>
<td>1135 418</td>
</tr>
</tbody>
</table>

(* Including ‘fish minced (= surimi) frozen’ plus other categories of fish meat frozen which could be mainly surimi, ‘hake minced frozen’, ‘saithe (= pollock) minced, frozen’, ‘cod minced frozen’, ‘fish meat, whether or not minced, frozen, nei’, ‘fish meat, whether or not minced, fresh, chilled, frozen, nei’, ‘cod meat frozen’, ‘Alaska pollock, minced, frozen’, and other species ‘… minced frozen’.)

When limited to the one, exclusive category of ‘fish minced, frozen’, the estimated world surimi production in 2004 was 861 000 metric tonnes. When it includes all the different denominations for fish meat, the estimate becomes 1 150 000 metric tonnes. In some countries, the difference between the two estimates can be great (Table 2.1-4).
### Table 2.1-4: Comparison of both surimi production estimations in 2004

<table>
<thead>
<tr>
<th>Country</th>
<th>FAO 2004 statistics for exclusive category ‘fish minced, frozen’ in metric tonnes</th>
<th>FAO 2004 statistics for multiple categories in metric tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>252 479</td>
<td>252 479</td>
</tr>
<tr>
<td>Thailand</td>
<td>–</td>
<td>89 501</td>
</tr>
<tr>
<td>Japan</td>
<td>53 231</td>
<td>103 918</td>
</tr>
<tr>
<td>China (PRC)</td>
<td>329 808</td>
<td>361 242</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>India</td>
<td>–</td>
<td>2 100</td>
</tr>
<tr>
<td>Chile</td>
<td>21 778</td>
<td>62 873</td>
</tr>
<tr>
<td>Argentina</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Faeroe Islands</td>
<td>–</td>
<td>30 000</td>
</tr>
<tr>
<td>France</td>
<td>400</td>
<td>10 943</td>
</tr>
<tr>
<td>Peru</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Malaysia</td>
<td>950</td>
<td>–</td>
</tr>
<tr>
<td>Indonesia</td>
<td>–</td>
<td>9 563</td>
</tr>
<tr>
<td>Myanmar</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>China (RC)</td>
<td>176 202</td>
<td>176 202</td>
</tr>
<tr>
<td>South Korea</td>
<td>50</td>
<td>850</td>
</tr>
<tr>
<td>Spain</td>
<td>9 593</td>
<td>9 593</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>5 451</td>
<td>6 403</td>
</tr>
<tr>
<td>Others</td>
<td>11 419</td>
<td>39 751</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>861 361</strong></td>
<td><strong>1 155 418</strong></td>
</tr>
</tbody>
</table>

Actual surimi production is likely to be around 600 000 metric tonnes, according to an expert from the Surimi School, a training organization active worldwide throughout the year. It aims to provide technical, up-to-date information to those involved with surimi and surimi products. The Surimi School has been managed for many years by Oregon State University and is sponsored by various surimi business suppliers.

For some countries such as China the difference between estimates based on the surimi exclusive category and multiple categories is great. FAO estimates based on both the exclusive and multiple categories indicate an important increase in world surimi production that is not confirmed by the Surimi School’s figures.

Generally speaking, there is significant uncertainty about global surimi output. It has not been possible in this study to obtain more accurate figures. However, the study attempts to fill the gaps in information among the various sources and to propose an estimate of output, which, however, still retains an element of uncertainty (Table 2.1-5).
Table 2.1-5: Study proposed estimate of surimi production

<table>
<thead>
<tr>
<th>Country</th>
<th>Production estimate (in metric tonnes)</th>
<th>Information source</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>250 000</td>
<td>USA and FAO statistics</td>
</tr>
<tr>
<td>Thailand</td>
<td>140 000</td>
<td>Surimi School estimate</td>
</tr>
<tr>
<td>Japan</td>
<td>100 000</td>
<td>Japan and FAO statistics</td>
</tr>
<tr>
<td>China (PRC)</td>
<td>80 000</td>
<td>Surimi School estimate</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>50 000</td>
<td>Surimi School estimate</td>
</tr>
<tr>
<td>India</td>
<td>35 000</td>
<td>Surimi School estimate</td>
</tr>
<tr>
<td>Argentina</td>
<td>30 000</td>
<td>Surimi School estimate</td>
</tr>
<tr>
<td>Chile</td>
<td>18 000</td>
<td>Surimi School and Chilean statistics</td>
</tr>
<tr>
<td>Faeroe Islands</td>
<td>15 000</td>
<td>Shipowner’s announcement</td>
</tr>
<tr>
<td>France</td>
<td>5 000</td>
<td>Producer</td>
</tr>
<tr>
<td>Malaysia</td>
<td>8 000</td>
<td>Surimi School estimate</td>
</tr>
<tr>
<td>Peru</td>
<td>5 000</td>
<td>Estimate based on producer capacity</td>
</tr>
<tr>
<td>Indonesia</td>
<td>4 000</td>
<td>Surimi School estimate</td>
</tr>
<tr>
<td>Myanmar</td>
<td>3 000</td>
<td>Surimi School estimate</td>
</tr>
<tr>
<td>Others</td>
<td>7 000</td>
<td>To take into account miscellaneous countries</td>
</tr>
<tr>
<td>TOTAL</td>
<td>750 000</td>
<td></td>
</tr>
</tbody>
</table>

In spite of the uncertainty in the production figures, the following hard facts remain.

- After rapid and important growth, production of Alaska pollock surimi decreased and was supplemented by surimi production from other resources.
- The United States of America and Japan historically played and continue to play a major role in the production of surimi and surimi products.
- Thailand has become a very important producer.
- China’s role as producer is increasing (as in many seafood business areas), possibly on a very significant scale.
- Many newcomers to the surimi industry have emerged in various parts of the world: Viet Nam, Chile, the Faeroe Islands, France, India and Malaysia.

2.1.5. Surimi trade

Between 56 percent and 70 percent of global surimi production is traded among countries, according to export and import statistics.

- Exporting countries (Table 2.1-6 and Figure 2.1-6)

The United States of America is the most important exporting country, with about 90 percent of its total production being exported. This amounts to 35 percent of the total commercial activity at the global level.

Thailand also plays an important, although lesser, role.

- Importing countries (Table 2.1-7 and Figure 2.1-5)

Importing 39 percent of the world’s total imports in 2004, Japan is still the main destination of raw materials, greatly needed for its own market.

The Republic of Korea imports increasingly greater amounts to feed its surimi-products export industry.
In summary, the needs of various European countries are growing at a remarkable rate.

Table 2.1-6: surimi exporting countries

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>169,937</td>
<td>152,037</td>
<td>158,277</td>
<td>169,801</td>
<td>136,154</td>
<td>151,329</td>
<td>176,548</td>
<td>224,343</td>
<td>217,283</td>
<td>200,982</td>
<td>229,987</td>
</tr>
<tr>
<td>Thailand</td>
<td>51,896</td>
<td>62,161</td>
<td>52,829</td>
<td>70,028</td>
<td>75,238</td>
<td>79,187</td>
<td>84,062</td>
<td>98,695</td>
<td>112,325</td>
<td>110,629</td>
<td>89,492</td>
</tr>
<tr>
<td>Chile</td>
<td>32,034</td>
<td>14,112</td>
<td>10,534</td>
<td>11,135</td>
<td>20,797</td>
<td>11,271</td>
<td>15,085</td>
<td>20,429</td>
<td>26,040</td>
<td>45,091</td>
<td>55,672</td>
</tr>
<tr>
<td>Norway</td>
<td>4,992</td>
<td>5,866</td>
<td>5,038</td>
<td>5,896</td>
<td>5,104</td>
<td>14,325</td>
<td>42,330</td>
<td>53,044</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>China (PRC)</td>
<td>9,158</td>
<td>8,713</td>
<td>9,732</td>
<td>18,507</td>
<td>15,198</td>
<td>18,414</td>
<td>21,930</td>
<td>22,186</td>
<td>29,296</td>
<td>26,525</td>
<td>31,434</td>
</tr>
<tr>
<td>Faeroe Islands</td>
<td>1,176</td>
<td>2,764</td>
<td>3,895</td>
<td>5,930</td>
<td>4,099</td>
<td>6,476</td>
<td>6,206</td>
<td>8,635</td>
<td>9,300</td>
<td>29,955</td>
<td></td>
</tr>
<tr>
<td>Iceland</td>
<td>6,715</td>
<td>4,599</td>
<td>4,542</td>
<td>4,418</td>
<td>4,156</td>
<td>4,513</td>
<td>4,410</td>
<td>4,665</td>
<td>4,941</td>
<td>23,328</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>8,462</td>
<td>9,342</td>
<td>12,766</td>
<td>15,814</td>
<td>15,620</td>
<td>17,853</td>
<td>15,024</td>
<td>13,899</td>
<td>19,480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>3,839</td>
<td>4,097</td>
<td>5,223</td>
<td>5,293</td>
<td>5,065</td>
<td>8,003</td>
<td>6,723</td>
<td>7,450</td>
<td>8,866</td>
<td>11,734</td>
<td>9,685</td>
</tr>
<tr>
<td>Indonesia</td>
<td>4,355</td>
<td>4,450</td>
<td>3,166</td>
<td>2,781</td>
<td>2,173</td>
<td>2,910</td>
<td>3,054</td>
<td>5,426</td>
<td>9,563</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Zealand</td>
<td>4,236</td>
<td>6,674</td>
<td>7,028</td>
<td>6,690</td>
<td>8,722</td>
<td>9,878</td>
<td>7,578</td>
<td>10,914</td>
<td>10,269</td>
<td>6,149</td>
<td>5,138</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>15,043</td>
<td>39,988</td>
<td>22,915</td>
<td>3,975</td>
<td>3,482</td>
<td>2,717</td>
<td>16,948</td>
<td>9,920</td>
<td>4,950</td>
<td>5,252</td>
<td>3,501</td>
</tr>
<tr>
<td>India</td>
<td>222</td>
<td>342</td>
<td>738</td>
<td>629</td>
<td>2,092</td>
<td>3,901</td>
<td>4,197</td>
<td>3,816</td>
<td>3,642</td>
<td>5,822</td>
<td>2,100</td>
</tr>
<tr>
<td>Japan</td>
<td>1,324</td>
<td>5,067</td>
<td>4,648</td>
<td>5,415</td>
<td>1,724</td>
<td>888</td>
<td>4,552</td>
<td>3,749</td>
<td>4,966</td>
<td>3,420</td>
<td>1,839</td>
</tr>
<tr>
<td>France</td>
<td>648</td>
<td>1,145</td>
<td>906</td>
<td>883</td>
<td>1,152</td>
<td>797</td>
<td>2,397</td>
<td>2,138</td>
<td>1,493</td>
<td>1,121</td>
<td>1,694</td>
</tr>
<tr>
<td>Others</td>
<td>38,213</td>
<td>47,656</td>
<td>68,864</td>
<td>50,374</td>
<td>56,537</td>
<td>71,173</td>
<td>78,861</td>
<td>63,012</td>
<td>69,139</td>
<td>83,185</td>
<td>83,123</td>
</tr>
<tr>
<td>TOTAL</td>
<td>327,307</td>
<td>363,147</td>
<td>366,063</td>
<td>368,588</td>
<td>360,670</td>
<td>413,024</td>
<td>456,589</td>
<td>500,384</td>
<td>535,513</td>
<td>580,322</td>
<td>651,895</td>
</tr>
</tbody>
</table>

(*Including 'fish minced (= surimi) frozen' plus other categories of fish meat frozen which could be mainly surimi, 'hake minced frozen', 'saithe (= pollock) minced, frozen', 'cod minced frozen', 'fish meat, whether or not minced, frozen, nei', 'fish meat, whether or not minced, fresh, chilled, frozen, nei', 'cod meat frozen', 'Alaska pollock, minced frozen', and other species '... minced frozen'.)

Figure 2.1-4: surimi exporting countries

(*Including 'fish minced (= surimi) frozen' plus other categories of fish meat frozen which could be mainly surimi, 'hake minced frozen', 'saithe (= pollock) minced, frozen', 'cod minced frozen', 'fish meat, whether or not minced, frozen, nei', 'fish meat, whether or not minced, fresh, chilled, frozen, nei', 'cod meat frozen', 'Alaska pollock, minced frozen', and other species '... minced frozen'.)
## Table 2.1-7: surimi importing countries

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>271 139</td>
<td>296 090</td>
<td>267 387</td>
<td>300 850</td>
<td>257 428</td>
<td>265 657</td>
<td>269 586</td>
<td>311 454</td>
<td>269 983</td>
<td>314 994</td>
<td>269 983</td>
</tr>
<tr>
<td>South Korea</td>
<td>47 756</td>
<td>45 328</td>
<td>53 828</td>
<td>62 497</td>
<td>65 195</td>
<td>72 611</td>
<td>74 414</td>
<td>99 443</td>
<td>91 202</td>
<td>99 478</td>
<td>104 477</td>
</tr>
<tr>
<td>Poland</td>
<td>21 977</td>
<td>20 756</td>
<td>69 092</td>
<td>50 006</td>
<td>63 975</td>
<td>59 237</td>
<td>61 515</td>
<td>51 383</td>
<td>43 252</td>
<td>44 220</td>
<td>51 611</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>4 950</td>
<td>2 379</td>
<td>5 082</td>
<td>7 624</td>
<td>26 283</td>
<td>21 103</td>
<td>5 909</td>
<td>10 559</td>
<td>20 323</td>
<td>32 049</td>
<td>40 020</td>
</tr>
<tr>
<td>Germany</td>
<td>27 197</td>
<td>29 117</td>
<td>51 769</td>
<td>52 528</td>
<td>47 796</td>
<td>38 636</td>
<td>37 202</td>
<td>42 106</td>
<td>34 305</td>
<td>37 068</td>
<td>39 146</td>
</tr>
<tr>
<td>France</td>
<td>15 240</td>
<td>15 763</td>
<td>19 529</td>
<td>19 105</td>
<td>26 494</td>
<td>28 107</td>
<td>26 679</td>
<td>27 824</td>
<td>28 811</td>
<td>29 542</td>
<td>36 915</td>
</tr>
<tr>
<td>Spain</td>
<td>6 694</td>
<td>8 503</td>
<td>11 453</td>
<td>13 027</td>
<td>16 473</td>
<td>15 616</td>
<td>18 459</td>
<td>24 948</td>
<td>25 007</td>
<td>24 672</td>
<td>31 812</td>
</tr>
<tr>
<td>Lithuania</td>
<td>384</td>
<td>375</td>
<td>894</td>
<td>346</td>
<td>4 618</td>
<td>5 349</td>
<td>9 110</td>
<td>10 654</td>
<td>14 563</td>
<td>16 324</td>
<td></td>
</tr>
<tr>
<td>China (PRC)</td>
<td>4 774</td>
<td>1 017</td>
<td>2 216</td>
<td>4 579</td>
<td>5 823</td>
<td>5 254</td>
<td>9 063</td>
<td>11 879</td>
<td>6 542</td>
<td>12 419</td>
<td>15 944</td>
</tr>
<tr>
<td>China (RC)</td>
<td>10 446</td>
<td>10 120</td>
<td>12 181</td>
<td>13 481</td>
<td>15 265</td>
<td>17 132</td>
<td>14 473</td>
<td>17 106</td>
<td>16 976</td>
<td>16 147</td>
<td>15 108</td>
</tr>
<tr>
<td>Netherlands</td>
<td>6 263</td>
<td>4 926</td>
<td>6 374</td>
<td>7 520</td>
<td>8 156</td>
<td>6 878</td>
<td>7 139</td>
<td>5 213</td>
<td>9 485</td>
<td>13 341</td>
<td>13 866</td>
</tr>
<tr>
<td>Belgium</td>
<td>1 060</td>
<td>2 809</td>
<td>4 821</td>
<td>4 336</td>
<td>5 347</td>
<td>5 800</td>
<td>4 979</td>
<td>4 872</td>
<td>4 441</td>
<td>6 643</td>
<td>12 938</td>
</tr>
<tr>
<td>USA</td>
<td>76 156</td>
<td>14 538</td>
<td>24 935</td>
<td>18 042</td>
<td>15 840</td>
<td>22 556</td>
<td>11 974</td>
<td>12 299</td>
<td>15 599</td>
<td>13 984</td>
<td>12 582</td>
</tr>
<tr>
<td>Others</td>
<td>62 003</td>
<td>65 495</td>
<td>96 112</td>
<td>126 122</td>
<td>78 701</td>
<td>78 526</td>
<td>77 998</td>
<td>91 021</td>
<td>130 506</td>
<td>121 590</td>
<td>103 897</td>
</tr>
<tr>
<td>TOTAL</td>
<td>506 057</td>
<td>516 280</td>
<td>616 673</td>
<td>690 663</td>
<td>610 722</td>
<td>639 526</td>
<td>624 743</td>
<td>720 081</td>
<td>754 569</td>
<td>727 799</td>
<td>809 314</td>
</tr>
</tbody>
</table>

(* Including 'fish minced (= surimi) frozen' plus other categories of fish meat frozen which could be mainly surimi, 'hake minced frozen', 'saithe (= pollock) minced frozen', 'cod minced frozen', 'fish meat, whether or not minced, frozen, net', 'fish meat, whether or not minced, fresh, chilled, frozen, net', 'cod meat frozen', 'Alaska pollock, minced, frozen', and other species '... minced frozen').

## Figure 2.1-5: surimi importing countries

![Graph showing surimi importing countries](image-url)

(* Including 'fish minced (= surimi) frozen' plus other categories of fish meat frozen which could be mainly surimi, 'hake minced frozen', 'saithe (= pollock) minced frozen', 'cod minced frozen', 'fish meat, whether or not minced, frozen, net', 'fish meat, whether or not minced, fresh, chilled, frozen, net', 'cod meat frozen', 'Alaska pollock, minced, frozen', and other species '... minced frozen').

(Source: FAO Statistics*)
2.2. Japan

2.2.1. Characteristics of production

Japan is historically the country for production and consumption of surimi and surimi products. In the 1960s it developed the industrial technology for surimi production. Japan was also the most important surimi producer for its own needs until its fish supply declined as a result of the Americanization of the United States EEZ and the collapse of the Russian resource.

Production peaked at 423,000 metric tonnes in 1973 and remained at 350,000–420,000 metric tonnes per year throughout the years 1974–1984. Since 1985, production steadily declined to approximately 100,000 metric tonnes per year because of the shortage of fish supply in both domestic and foreign waters.

Presently, Japan’s own surimi production has the following characteristics:
- surimi is processed almost entirely on land (96 percent), and
- surimi is processed mainly at the onshore industrial facility on Hokkaido Island.

2.2.2. Raw material

Japan’s own surimi production uses Alaska pollock (70 percent), Atka mackerel (20 percent) and other species (10 percent).

After experiencing a sharp drop during the years 1973–1995, the Japanese Alaska pollock fishery has stabilized during the past few years at around 200,000–250,000 metric tonnes per year.

Virtually all Atka mackerel is used for the production of frozen surimi.

2.2.3. Surimi trade

In past years, Japanese demand for surimi stabilized at around 400,000 metric tonnes per year.

In recent years, Japan’s surimi imports remained at around 300,000 metric tonnes per year (Table 2.2-1 and Figure 2.2-1). Currently, Alaska pollock surimi represents less than 45 percent of Japanese imports but continues to be the most important raw material. All pollock surimi comes from the United States of America. Cod and Pacific whiting surimi imports, which increased to 26,000 metric tonnes per year by the end of the 1990s, are now at a very low level because of decreased production. Threadfin and other tropical fish surimi represents about 45 percent of Japanese imports and comes mainly from Thailand (60 percent) but also from many other countries.

Supplies from South America (Argentina, Chile and Peru) reached 30,000 metric tonnes and remain stable (Table 2.2-2, Figure 2.2-2, Table 2.2-3 and Figure 2.2-3).

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollock surimi</td>
<td>126 800</td>
</tr>
<tr>
<td>Threadfin bream surimi</td>
<td>28 510</td>
</tr>
<tr>
<td>Cod surimi</td>
<td>17 807</td>
</tr>
<tr>
<td>Others</td>
<td>92 872</td>
</tr>
<tr>
<td>TOTAL</td>
<td>265 989</td>
</tr>
</tbody>
</table>
Table 2.2-2: Japan surimi imports by main countries/species

<table>
<thead>
<tr>
<th>Country</th>
<th>Pollock surimi</th>
<th>Cod and Pacific whiting surimi</th>
<th>Threadfin bream surimi</th>
<th>Croaker surimi</th>
<th>Others</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>137 193</td>
<td>5918</td>
<td>79</td>
<td></td>
<td>1 528</td>
<td>144 718</td>
</tr>
<tr>
<td>Thailand</td>
<td></td>
<td>40 909</td>
<td>4 543</td>
<td>40 798</td>
<td></td>
<td>86 250</td>
</tr>
<tr>
<td>Argentina</td>
<td>18</td>
<td></td>
<td></td>
<td>16 654</td>
<td>1 019</td>
<td>16 672</td>
</tr>
<tr>
<td>India</td>
<td></td>
<td>14 835</td>
<td>613</td>
<td>1 019</td>
<td></td>
<td>16 467</td>
</tr>
<tr>
<td>China (PRC)</td>
<td>48</td>
<td>18</td>
<td>1 509</td>
<td>9 706</td>
<td></td>
<td>11 281</td>
</tr>
<tr>
<td>Chile</td>
<td>95</td>
<td></td>
<td></td>
<td></td>
<td>9 887</td>
<td>9 982</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>4 676</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 676</td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
<td>2 707</td>
<td>72</td>
<td>535</td>
<td></td>
<td>3 314</td>
</tr>
<tr>
<td>Panama</td>
<td></td>
<td></td>
<td></td>
<td>3 286</td>
<td></td>
<td>3 286</td>
</tr>
<tr>
<td>South Korea</td>
<td>278</td>
<td></td>
<td></td>
<td>2 171</td>
<td></td>
<td>2 449</td>
</tr>
<tr>
<td>Peru</td>
<td></td>
<td></td>
<td></td>
<td>1 931</td>
<td></td>
<td>1 931</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>21</td>
<td>583</td>
<td>628</td>
<td>7 054</td>
<td>8 286</td>
</tr>
<tr>
<td>TOTAL</td>
<td>142 213</td>
<td>6 034</td>
<td>59 131</td>
<td>7 365</td>
<td>94 569</td>
<td>309 312</td>
</tr>
</tbody>
</table>

(Source: Japan Fish Traders Association)

Figure 2.2-1: Japan surimi imports by main species

JAPAN: SURIMI IMPORTS BY MAIN COUNTRIES/SPECIES IN 2001
(Source: Japan Fish Traders Association)
Figure 2.2-2: Japan surimi imports by main countries/species

**Figure 2.2-2: Japan surimi imports by main countries/species in 2001**

Volumes in metric tonnes
(Source: Japan Fish Traders Association)

Table 2.2-3: Japan surimi imports by main countries

<table>
<thead>
<tr>
<th>Country</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>144 744</td>
<td>133 976</td>
<td>103 266</td>
<td>138 407</td>
</tr>
<tr>
<td>Thailand</td>
<td>86 342</td>
<td>100 689</td>
<td>95 622</td>
<td>81 117</td>
</tr>
<tr>
<td>China (PRC)</td>
<td>13 072</td>
<td>15 083</td>
<td>15 945</td>
<td>20 612</td>
</tr>
<tr>
<td>Argentina</td>
<td>16 672</td>
<td>13 392</td>
<td>10 593</td>
<td>19 834</td>
</tr>
<tr>
<td>India</td>
<td>16 467</td>
<td>17 498</td>
<td>17 500</td>
<td>17 842</td>
</tr>
<tr>
<td>Chile</td>
<td>11 523</td>
<td>10 312</td>
<td>9 312</td>
<td>9 851</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>2 290</td>
<td>2 877</td>
<td>3 974</td>
<td>4 811</td>
</tr>
<tr>
<td>Denmark (*)</td>
<td>2 809</td>
<td>2 658</td>
<td>1 278</td>
<td>4 351</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1 415</td>
<td>1 156</td>
<td>2 266</td>
<td></td>
</tr>
<tr>
<td>Peru</td>
<td>1 931</td>
<td>2 527</td>
<td>1 388</td>
<td>2 125</td>
</tr>
<tr>
<td>Indonesia</td>
<td>3 313</td>
<td>4 513</td>
<td>2 512</td>
<td>1 686</td>
</tr>
<tr>
<td>South Korea</td>
<td>2 449</td>
<td>1 743</td>
<td>1 595</td>
<td>1 353</td>
</tr>
<tr>
<td>Myanmar</td>
<td>668</td>
<td>558</td>
<td>694</td>
<td>1 330</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>4 703</td>
<td>265</td>
<td>1 705</td>
<td>949</td>
</tr>
<tr>
<td>Others</td>
<td>5 779</td>
<td>4 297</td>
<td>2 634</td>
<td>2 858</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>312 763</strong></td>
<td><strong>310 803</strong></td>
<td><strong>269 174</strong></td>
<td><strong>309 392</strong></td>
</tr>
</tbody>
</table>

(* Mainly Faeroese production re-export.)
Japan’s surimi imports are regulated by an annual quota and tariff system. Each year the Ministry of International Trade and Industry decides the new quotas based on advice by the Ministry of Agriculture, Forestry and Fisheries. The various groups allocated quotas by the government are the following:

- traders: trading companies with past import records,
- users: processors who usually buy from traders,
- fishermen: fishing companies operating in foreign waters,
- overseas fishery development: companies that received import orders from the Overseas Fishery Cooperation Foundation, and
- first-come-first-served: companies that have import contracts for Alaska pollock surimi (more than 10 metric tonnes) signed after the date of the quota announcement.

Tariffs are calculated on a c.i.f. value (cost, insurance, freight): 4.2 percent for frozen surimi and frozen fish meat of cod, pollock and hake, and 3.5 percent for frozen surimi of threadfin bream.

The surimi export level is very low at 2 000–4 000 metric tonnes per year. The most important destination is New Zealand.

2.2.4. Frozen surimi market prices

Frozen surimi prices vary widely, depending upon quality, species, origin and supply-and-demand. They are greatly influenced by raw material prices. In the case of Alaska pollock, for instance, an increase in the fresh fish price due to increased processing into fillets has resulted in an increase in the price of pollock surimi. Prices of surimi from different countries of origin are linked with the global balance between supply and demand (Table 2.2-4 and Figure 2.2-4).

Surimi prices can also fluctuate on a daily basis, depending upon the balance between cold storage holdings and demand. Prices generally increase at year end because of high demand during festivities (Table 2.2-5, Figure 2.2-5, Table 2.2-6 and Figure 2.2-6).
Table 2.2-4: Japan annual surimi price evolution by main species

<table>
<thead>
<tr>
<th>Species</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollock surimi</td>
<td>282</td>
<td>210</td>
<td>198</td>
<td>251</td>
<td>205</td>
<td>185</td>
<td>258</td>
</tr>
<tr>
<td>Threadfin bream surimi</td>
<td>211</td>
<td>187</td>
<td>176</td>
<td>207</td>
<td>187</td>
<td>173</td>
<td>219</td>
</tr>
</tbody>
</table>

(Source: NOAA's National Marine Fisheries Service)

Figure 2.2-4: Japan annual surimi price evolution by main species

Table 2.2-5: Japan monthly surimi wholesale variation

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>1 398</td>
<td>1 384</td>
<td>1 389</td>
<td>1 381</td>
<td>1 159</td>
<td>1 391</td>
<td>1 301</td>
<td>970</td>
<td>1 157</td>
<td>1 429</td>
<td>1 481</td>
<td>1 727</td>
</tr>
<tr>
<td>2004</td>
<td>1 152</td>
<td></td>
<td>1 055</td>
<td>920</td>
<td>909</td>
<td>930</td>
<td>1 485</td>
<td>1 432</td>
<td>1 733</td>
<td>1 719</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>1 305</td>
<td>1 312</td>
<td>1 310</td>
<td>1 220</td>
<td>1 005</td>
<td>1 239</td>
<td>1 203</td>
<td>1 202</td>
<td>1 477</td>
<td>1 254</td>
<td>1 409</td>
<td>1 407</td>
</tr>
</tbody>
</table>

(* At 10 major central wholesale markets in Japan.)

Figure 2.2-5: Japan monthly surimi wholesale variation

* At 10 major central wholesale markets in Japan.*)
Table 2.2-6: Japan monthly surimi wholesale price variation

<table>
<thead>
<tr>
<th>Year</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>313</td>
<td>294</td>
<td>295</td>
<td>295</td>
<td>285</td>
<td>272</td>
<td>275</td>
<td>274</td>
<td>272</td>
<td>282</td>
<td>271</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>275</td>
<td>259</td>
<td>255</td>
<td>278</td>
<td>262</td>
<td>257</td>
<td>275</td>
<td>273</td>
<td>297</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>282</td>
<td>291</td>
<td>295</td>
<td>301</td>
<td>310</td>
<td>297</td>
<td>300</td>
<td>314</td>
<td>319</td>
<td>345</td>
<td>381</td>
<td>357</td>
</tr>
</tbody>
</table>

(*) At 10 major central wholesale markets in Japan.

Figure 2.2-6: Japan monthly surimi wholesale price variation

Japan’s wholesalers play a very important role in the world frozen surimi market. Wholesale prices at the Tokyo central wholesale market are often used as indices for fishery products throughout the world.

In 2005, the average import surimi price was 257 Yen/kg and the wholesale price was 317 Yen/kg (Table 2.2-7 and Figure 2.2-7). Import and wholesale prices are closely linked and annual variations can be very important:

- import price variance from 191 to 236 Yen/kg in 2001/2002 => +24 percent
- wholesale price variance from 271 to 317 Yen/kg in 2004/2005 => +17 percent

Table 2.2-7: Japan annual surimi price evolution import/wholesale

<table>
<thead>
<tr>
<th>JAPAN: ANNUAL SURIMI PRICE EVOLUTION in Yen/kg</th>
<th>(Source: NOAA’s National Marine Fisheries Service)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual average import price</td>
<td></td>
</tr>
<tr>
<td>Annual average wholesale price (*)</td>
<td>375</td>
</tr>
</tbody>
</table>

(*) At 10 major central wholesale markets in Japan.

15
Because the surimi market is global and the relative weight on the world market of American production is considerable, Japan’s surimi wholesale price is dependant on the US$/Japanese Yen exchange rate. Increasing prices during 2005 illustrate this point (Table 2.2-8 and Figure 2.2-8).

This phenomenon reinforces the trend within companies producing surimi products to use surimi from the cheapest source in order to face to face their market’s evolution.

Table and Figure 2.2-8: Comparison wholesale price and US$/Yen exchange rate
2.2.5. *Main actors*

Nippon Suisan Kaisha Ltd. is one of the giant Japanese companies that manufacture both surimi and surimi products. With seafood department sales of around US$2 billion in 2006 (40 percent of total company output), Nippon Suisan Kaisha Ltd. has operations (20 offices, subsidiaries and joint ventures) worldwide in:

- fishing, fish farming, processing and trading,
- producing fishmeal, fish oil and feed, and
- producing fresh, frozen and canned seafood.

According to announcements by the company, Nippon Suisan Kaisha Ltd. controls 25 percent of the surimi domestic market and approximately 20 percent of the world market.

2.2.6. *Current and future developments*

After overcoming the supply cutoff caused by the Americanization of the Alaska pollock resource, Japanese actors must continuously develop new supply strategies. Presently, surimi products in Japan must respond simultaneously to the changing habits of Japanese consumers as a result of competition from other products, and to increasing prices of Alaska pollock surimi as a result of shortages of fresh fish caused when increased amounts are dedicated to fillet production, of competition from other supplier countries, and of the US$/Japanese Yen exchange rate.

Japan is trying to increase the share of new species and new supplier countries – especially developing countries – that supply its surimi production. The big size and the great versatility of the main Japanese companies in the seafood business are a strong advantage in that effort.

2.3. *United States of America*

2.3.1. *Characteristics of production*

United States surimi annual production increased to around 300 000 metric tonnes in 2000 (Table 2.3-1 and Figure 2.3-1). It decreased to around 250 000 metric tonnes in 2004. Even though previous years have shown that annual production may vary greatly, this overall reduction appears to be structural. The competition from filleting activity, as explained below, and from other producer countries must be the explanation.

Due to the specificities of Alaska pollock and the large size and technological efficiency of the United States fishing fleet, the quality of United States surimi is now very much recognized. That was not the case at the beginning of the ‘takeover’ of Japanese surimi production by the Americans.

<table>
<thead>
<tr>
<th>USA: SURIMI PRODUCTION</th>
<th>Volumes in metric tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Source: FAO Statistics)</td>
</tr>
<tr>
<td><strong>Production</strong></td>
<td></td>
</tr>
<tr>
<td>1988</td>
<td>58,280</td>
</tr>
<tr>
<td>1989</td>
<td>52,991</td>
</tr>
<tr>
<td>1990</td>
<td>202,454</td>
</tr>
<tr>
<td>1991</td>
<td>261,167</td>
</tr>
<tr>
<td>1992</td>
<td>231,070</td>
</tr>
<tr>
<td>1993</td>
<td>223,541</td>
</tr>
<tr>
<td>1994</td>
<td>279,233</td>
</tr>
<tr>
<td>1995</td>
<td>290,006</td>
</tr>
<tr>
<td>1996</td>
<td>263,780</td>
</tr>
<tr>
<td>1997</td>
<td>255,824</td>
</tr>
<tr>
<td>1998</td>
<td>253,609</td>
</tr>
<tr>
<td>1999</td>
<td>290,824</td>
</tr>
<tr>
<td>2000</td>
<td>310,323</td>
</tr>
<tr>
<td>2001</td>
<td>394,697</td>
</tr>
<tr>
<td>2002</td>
<td>265,323</td>
</tr>
<tr>
<td>2003</td>
<td>252,479</td>
</tr>
<tr>
<td>2004</td>
<td>265,562</td>
</tr>
</tbody>
</table>
2.3.2. Raw material

Most of United States surimi production comes from the Alaska pollock fishery (*Theragra chalcogramma*). This pollock fishery was formerly exploited by other countries, in addition to the United States of America, but was Americanized at the end of the 1980s as a result of the United States EEZ settlement.

Since the end of 1990s, the harvest of the United States pollock fishery significantly increased, yielding about 1 600 000 metric tonnes in 2005. In the same period, the pollock harvest in Russian waters and total world pollock harvest have dramatically declined from around 6.8 million metric tonnes in 1986 to 2.8 million metric tonnes in 2003.

Presently, the United States pollock fishery accounts for more than 55 percent of the world pollock fisheries.

The annual allowable percentages of catch for the United States Bering Sea pollock fishery are allocated as follows:
- 10 percent to the six Alaska Community Development Groups,
- 3.5 percent to the by-catch of other fisheries,
- 86.5 percent to the ‘directed pollock catch’ which in turn is allocated as follows:
  - 50 percent to catcher-vessels that deliver to onshore factories,
  - 40 percent to catcher-processors, and catcher-vessels that deliver to catcher-processors,
  - 10 percent to catcher-vessels that supply at-sea processor vessels, so called mother ships, which do not harvest.

The pollock fishery in the United States Bering Sea is seasonal. The winter, or ‘A’, season lasts from January to April and the summer/fall, or ‘B’, season runs from July through October. During the A season, spawning pollocks produce large quantities of high-value roe, making this season the most profitable one for the fishing companies.

In 2005, United States pollock surimi production was reported at 196 000 metric tonnes, a 5 percent increase over 2004 (different from FAO report). The annual repartition was 80 000 metric tonnes in the A season and 116 000 tonnes in the B season, with higher surimi prices in the second half of the year.

The part of the United States Alaska pollock total catch used for surimi decreased from more than 50 percent in 1995 to only 39 percent in 2004. At the same time, the share of catch used for fillets increased. A shift in production from surimi to fillets occurred as fillet prices increased. However,
this general shift is being curbed by the need for a very fast catch in the beginning of the roe-producing season for the markets of Japan and of the Republic of Korea, given that roe is a very profitable resource. During this season, surimi processing, which is quick, proves better adapted to production than fillet processing, which is longer.

Production of a ‘recovery grade’ surimi is being developed. It reprocesses ‘fillets by-products’ and collects meat from the wash water. Presently, recovery grade surimi represents about 60 percent of total pollock surimi production.

Like other countries, the United States developed surimi production from species other than Alaska pollock, mainly Pacific whiting and Canadian Pacific hake (*Merluccius productus*). They constitute about 4 percent of the raw material used to produce surimi.

2.3.3. **Surimi trade**

Exports of United States surimi have increased to 200 000 metric tonnes in the last two years. They represent more than 80 percent of the American surimi production (Table 2.3-2 and Figure 2.3-2).

Surimi exports rank third in value, below salmon exports, and first in volume, just followed by salmon exports.

Japan is the historical destination for American surimi. In 1994, 85 percent of American surimi exports went to Japan. In 2005, surimi exports to Japan represented less than 50 percent. This drop is to the result of various factors: reduced production in Japan of surimi products, competition from other producer countries, and an unfavorable Yen/US$ exchange rate.

The Republic of Korea has become the second-ranking destination for American surimi, with 31 percent of total United States exports.

In 2005, European countries accounted for more than 17 percent of total United States exports, reflecting the growth of the European market and its capacity for elaborating surimi products.

### Table 2.3-2: USA surimi exports by main countries

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>120,506</td>
<td>117,762</td>
<td>102,694</td>
<td>109,195</td>
<td>85,078</td>
<td>80,532</td>
<td>87,484</td>
<td>92,856</td>
<td>105,199</td>
<td>85,471</td>
<td>101,205</td>
<td>97,478</td>
</tr>
<tr>
<td>South Korea</td>
<td>12,909</td>
<td>10,753</td>
<td>14,734</td>
<td>16,948</td>
<td>19,138</td>
<td>22,719</td>
<td>45,428</td>
<td>60,633</td>
<td>61,301</td>
<td>63,744</td>
<td>61,026</td>
<td>64,831</td>
</tr>
<tr>
<td>Germany</td>
<td>951</td>
<td>2,608</td>
<td>847</td>
<td>307</td>
<td>1,998</td>
<td>8,819</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>225</td>
<td>1,802</td>
<td>763</td>
<td>3,208</td>
<td>2,555</td>
<td>8,487</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lithuania</td>
<td>528</td>
<td>2,957</td>
<td>4,230</td>
<td>5,207</td>
<td>7,156</td>
<td>8,007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>1,328</td>
<td>1,261</td>
<td>2,002</td>
<td>3,118</td>
<td>2,374</td>
<td>3,062</td>
<td>4,748</td>
<td>5,523</td>
<td>8,307</td>
<td>7,670</td>
<td>10,885</td>
<td>6,645</td>
</tr>
<tr>
<td>Spain</td>
<td>477</td>
<td>526</td>
<td>429</td>
<td>585</td>
<td>2,216</td>
<td>1,903</td>
<td>2,345</td>
<td>4,078</td>
<td>4,111</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>China (PRC)/Hong Kong</td>
<td>1,017</td>
<td>978</td>
<td>1,016</td>
<td>3,998</td>
<td>1,328</td>
<td>285</td>
<td>2,438</td>
<td>5,197</td>
<td>518</td>
<td>2,140</td>
<td>4,308</td>
<td>3,027</td>
</tr>
<tr>
<td>China (RC)</td>
<td>3,014</td>
<td>1,520</td>
<td>3,023</td>
<td>2,311</td>
<td>2,822</td>
<td>2,808</td>
<td>1,443</td>
<td>2,707</td>
<td>2,631</td>
<td>2,331</td>
<td>2,375</td>
<td>2,028</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>489</td>
<td>1,626</td>
<td>182</td>
<td>931</td>
<td>529</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>1,026</td>
<td>672</td>
<td>1,175</td>
<td>541</td>
<td>415</td>
<td>96</td>
<td>187</td>
<td>148</td>
<td>307</td>
<td>208</td>
<td>127</td>
<td>223</td>
</tr>
<tr>
<td>Others</td>
<td>2,699</td>
<td>2,433</td>
<td>3,826</td>
<td>3,635</td>
<td>3,695</td>
<td>4,274</td>
<td>3,017</td>
<td>3,066</td>
<td>3,524</td>
<td>2,307</td>
<td>4,328</td>
<td>1,845</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>142,499</td>
<td>135,379</td>
<td>128,470</td>
<td>140,143</td>
<td>115,376</td>
<td>124,187</td>
<td>147,518</td>
<td>181,279</td>
<td>189,728</td>
<td>175,138</td>
<td>200,965</td>
<td>206,019</td>
</tr>
</tbody>
</table>
During the last ten years, surimi export prices decreased steadily. This price decrease is the result of an increase in the world surimi supply, given the use of new species and the development of new producer countries, despite an increase in world demand for surimi products (Table 2.3-3 and Figure 2.3-3).

Global competition, with its impact on prices, causes cheaper, lower quality surimi made from species previously not used to rival the well-renowned American surimi of Alaska pollock.

Table 2.3-3: USA surimi export prices

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average annual price</td>
<td>2.24</td>
<td>2.61</td>
<td>2.09</td>
<td>2.35</td>
<td>2.15</td>
<td>2.41</td>
<td>1.90</td>
<td>1.64</td>
<td>1.92</td>
<td>1.89</td>
<td>1.57</td>
<td>2.06</td>
</tr>
</tbody>
</table>

Figure 2.3-3: USA surimi export prices
2.3.4. **Main actors**

American Seafoods is one of the largest integrated seafood companies in the United States. It operates in two main business sectors, at-sea harvesting and processing (pollock, cod, hake and yellowfin sole), and land-based processing (pollock, catfish and scallops).

With 7 of its 19 catcher-processor vessels, American Seafoods controls the largest single quota of pollock allocated in the United States Bering Sea fishery, with approximately 45 percent catcher-processor market share. It harvests an approximate, aggregated 19 percent of the total catch.

As a result of the American Fisheries Act, which limits foreign ownership of companies to no more than 25 percent, American Seafoods’ shareholders have changed over the last few years. The Norwegian Aker Group reduced its company share and the US-based Coastal Villages Region Fund, a new shareholder, acquired a 45 percent share.

American Seafoods and Aker Seafoods have joint operations on two surimi factory vessels in Argentina and the Faeroe Islands.

2.3.5. **Current and future developments**

The Alaska pollock fishery has been recognized by the Marine Stewardship Council as “one of the most well-managed in the world”. It has been certified as sustainable according to MSC standards. However, the North Pacific Fishery Management Council recommends reductions in total allowable catches (TAC) in the coming years from 1 504 000 metric tonnes in 2006 to less than 1 188 000 metric tonnes in 2008.

At the same time, surimi production continues to decrease steadily from 45 percent of the pollock catch in 2003 to 30 percent in 2006. This constant decrease is offset by improvements in processing yields and the development of recovery grade surimi.

The question for the future is what balance will be reached between competing fillet and surimi production profitability, settled by the US$ exchange rate against the Yen and the Euro.

2.4. **Thailand**

2.4.1. **Main characteristics of production**

Thailand is the most advanced country with regards to surimi production in Southeast Asia. Thai surimi production was estimated at 160 000, 140 000 and 145 000 metric tonnes for 2003, 2004 and 2005 respectively. Current estimates for 2006 indicate a continuing decrease.

Production is effected in about 20 land-based factories, most of them operating according to good hygienic practices.

It should be noted that, perhaps because operations are land-based, a great number of the Thai companies involved in surimi processing are producers of both surimi and surimi-based products. The distinction between these two activities is not as strong as in other countries.

2.4.2. **Raw materials**

The raw materials used in surimi production are:
- threadfin bream (50 percent),
• lizard fish and big eye (15 percent each), and
• other species such as red mullet and croaker.
The fish are either fresh from Thai waters or, for more than 30 percent of the total supply, frozen from Thai vessels operating under fishing licenses in Indonesia and Myanmar.

About 60 percent of the fish used in surimi production come from Indonesian waters.

2.4.3. Surimi trade

• Imports (Table 2.4-1 and Figure 2.4-1)

Thai imports are very limited but seem to be increasing in recent years, mainly from China and Viet Nam.

• Exports (Table 2.4-2 and Figure 2.4-2)

Thai surimi exports rank second globally, with an annual volume of around 100 000 metric tonnes.

Japan is by far the first destination country, importing more than 65 percent of total Thai exports. Other Asian countries together account for approximately 25 percent of total exports.

Export prices, which fluctuated around Baht60/kg (almost US$1.64) during the years 2002, 2003, and 2004, increased dramatically in 2005 (+24 percent), thanks especially to high Japanese prices (Table 2.4-3 and Figure 2.4-3).

Table 2.4-1: Thailand surimi import

<table>
<thead>
<tr>
<th>Country</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>China (PRC)</td>
<td>593</td>
<td>532</td>
<td>293</td>
<td>1 483</td>
</tr>
<tr>
<td>Viet Nam</td>
<td></td>
<td></td>
<td></td>
<td>2 744</td>
</tr>
<tr>
<td>Malaysia</td>
<td>114</td>
<td>902</td>
<td>480</td>
<td></td>
</tr>
<tr>
<td>Chile</td>
<td>46</td>
<td>169</td>
<td>178</td>
<td></td>
</tr>
<tr>
<td>Singapore</td>
<td></td>
<td>62</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td></td>
<td>132</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>240</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td></td>
<td>42</td>
<td>303</td>
<td>48</td>
</tr>
<tr>
<td>Others</td>
<td>270</td>
<td>49</td>
<td>338</td>
<td>239</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1 263</td>
<td>623</td>
<td>2 199</td>
<td>5 376</td>
</tr>
</tbody>
</table>

(Source: Thai customs (0304900190 code*))

(*This code is announced as surimi code by Thailand Frozen Foods Association.)
Figure 2.4-1: Thailand surimi import

![Graph showing Thailand's annual surimi imports in metric tonnes from 2002 to 2005.](image)

*(Source: Thai customs (0304900190 code*))

Table 2.4-2: Thailand surimi export

<table>
<thead>
<tr>
<th>Country</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>81 536</td>
<td>76 664</td>
<td>63 908</td>
<td>61 845</td>
</tr>
<tr>
<td>South Korea</td>
<td>8 158</td>
<td>8 724</td>
<td>4 918</td>
<td>9 654</td>
</tr>
<tr>
<td>Singapore</td>
<td>7 835</td>
<td>6 734</td>
<td>5 807</td>
<td>6 008</td>
</tr>
<tr>
<td>China (PR)</td>
<td>5 567</td>
<td>5 221</td>
<td>4 187</td>
<td>5 233</td>
</tr>
<tr>
<td>USA</td>
<td>127</td>
<td>70</td>
<td>177</td>
<td>2 681</td>
</tr>
<tr>
<td>Lithuania</td>
<td>1 078</td>
<td>1 343</td>
<td>1 125</td>
<td>2 191</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1 193</td>
<td>2 820</td>
<td>2 361</td>
<td>1 517</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>482</td>
<td>191</td>
<td>1 900</td>
<td>1 045</td>
</tr>
<tr>
<td>China (PRC)</td>
<td>275</td>
<td>259</td>
<td>284</td>
<td>617</td>
</tr>
<tr>
<td>Australia</td>
<td>734</td>
<td>866</td>
<td>385</td>
<td>239</td>
</tr>
<tr>
<td>Estonia</td>
<td>298</td>
<td>629</td>
<td>293</td>
<td>125</td>
</tr>
<tr>
<td>France</td>
<td>260</td>
<td>451</td>
<td>407</td>
<td>221</td>
</tr>
<tr>
<td>Spain</td>
<td>132</td>
<td>1 001</td>
<td>378</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>3 932</td>
<td>5 674</td>
<td>3 361</td>
<td>2 731</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>111 607</strong></td>
<td><strong>110 647</strong></td>
<td><strong>89 491</strong></td>
<td><strong>94 107</strong></td>
</tr>
</tbody>
</table>

*(Source: Thai customs (0304900190 code*))

(*) This code is announced as surimi code by Thailand Frozen Foods Association.*
Figure 2.4-2: Thailand surimi export

THAILAND: ANNUAL SURIMI EXPORTS
(Source: Thai customs (0304900190 code*))

(* This code is announced as surimi code by Thailand Frozen Foods Association.)

Table 2.4-3: Thailand surimi export price

| THAILAND: ANNUAL SURIMI EXPORT PRICES | 2002 2003 2004 2005 |
| Source: Thailand customs | Average export price c.i.f. |
| in Baht/kg | 63.10 59.62 60.88 75.55 |

Figure 2.4-3: Thailand surimi export price
2.4.4. **Main actors**

Of the 20 operators, four factories have large capacities and can produce more than 100 metric tonnes per day.

Other operators to be mentioned are:
- Lucky Surimi Products, an affiliate of the T.C. Union Group, established in 1999. LSP has Good Manufacturing Practices (GMP) and Hazard Analysis and Critical Control Point (HACCP) certification, and ISO 9002 certification is pending. LSP produces surimi and recently launched production of surimi products. Around 200 employees work at LSP.
- Pacific Marine Food was founded in 1989. More than 1 000 employees work at PMF.

2.4.5. **Current and future developments**

A decrease in Thailand’s surimi production and an increase in global demand for surimi have led to significant price inflation in 2005.

The major threat to production is the pressure on fishing license renewals by countries like Indonesia and Myanmar, which could try to increase license costs or even keep production volumes for their own needs. Those involved with Thai surimi production could be cut off from their usual raw material supplies.

2.5. **People’s Republic of China**

2.5.1. **Main characteristics of production**

In the 1980s, China imported two surimi production lines from Japan and since then has carried on its own industrial production of surimi.

According to FAO statistics, China produces more than 300 000 metric tonnes per year of surimi: 329 808 per year in the exclusive category ‘surimi’ (fish minced, frozen), and 361 242 metric tonnes per year including other fish meat categories (Table 2.1-2 and Table 2.1-3). FAO statistics show a very big increase in China’s surimi production (Table 2.5-1 and Figure 2.5-1).

<table>
<thead>
<tr>
<th>CHINA: SURIMI PRODUCTION</th>
<th>Volumes in metric tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>46 810</td>
</tr>
</tbody>
</table>

(Source: FAO Statistics)
In a 2000 study, the National Oceanic and Atmospheric Administration (NOAA) of the United States Department of Commerce, estimated Chinese surimi production at 82 000 metric tonnes for 1996, with 20 percent being produced by state-owned enterprises.

The present study uses the estimate by the Surimi School expert of 80 000 metric tonnes, even if it may be an underestimate.

Production is located mainly in the southern part of the country (Quangxi, Fujian and Zhejiang provinces) where about 30 factories are located. The quality of the surimi produced is mainly low/medium.

2.5.2. Raw materials

The main species used in production are threadfin bream and lizard fish, but many other species are also used and mixed together, especially ribbon fish.

Surimi production using freshwater fish is not significant.

2.5.3. Surimi trade

In 2004, China imported 15 900 metric tonnes of surimi, for approximately US$25.3 million.

Most of Chinese surimi is exported to the Republic of Korea and Japan. The statistics of the importing countries show an increase in imports from China (Table 2.5-2 and Figure 2.5-2):

- 16 000 metric tonnes imported by the Republic of Korea in 2003 and 23 000 metric tonnes in 2004,
- 11 000 metric tonnes imported by Japan in 2001 and 21 000 metric tonnes in 2004,
- 600 metric tonnes imported by Thailand in 2002 and 1 500 metric tonnes in 2005, and
- 100 metric tonnes imported by the EU in 1999 and 900 metric tonnes in 2005.

From the above figures, China’s total surimi exports could be estimated at more than 45 000–50 000 metric tonnes for 2004, versus 31 434 metric tonnes reported in FAO statistics for 2004.
2.5.4. **Main actors**

Companies in the surimi business in China are either privately owned and financed by Chinese, state-owned or joint ventures of big, foreign investors, mainly Korean or Japanese.

The Zhoushan Industrial Company is an example of a joint venture formed in 1994 with the Maruha Corporation, a leading Japanese seafood corporation. The area of its plant facility is 360,000 square metres, and the company has 10 wharves and 17 vessels. The company produces frozen, raw fish and processed products, including surimi and surimi products.

2.5.5. **Current and future developments**

Like many other seafood activities, surimi production is a promising sector in the fish trade business in China. To overcome shortfalls of raw surimi for domestic and international demand, Chinese companies set up overseas plants to produce raw surimi for shipment back to China.

2.6. **Viet Nam**

2.6.1. **Main characteristics of production**

Even if FAO inventory reports no production, Viet Nam’s surimi production is estimated at 50,000 metric tonnes, produced in about 20 factories located in the southern part of the country. Vietnamese surimi is mainly a low-gel surimi produced from mixed fish. The level of technology and the sanitary conditions of factories are poor in comparison with those in Thailand, for instance.
2.6.2.  **Raw materials**

Vietnamese surimi is made mainly from threadfin bream, big eye and lizard fish, which are mostly fished by small vessels on 2–3 week trips.

The general fishing and handling conditions – long fishing trips and lack of ice – do not result in production of good quality surimi.

2.6.3.  **Surimi trade**

Estimates of Viet Nam’s surimi exports can be made using the statistics of importing countries. They indicate global Vietnamese exports of 32 000 metric tonnes as follows:
- 24 385 metric tonnes imported by the Republic of Korea in 2004,
- 4 811 metric tonnes imported by Japan in 2004, and
- 2 744 metric tonnes imported by Thailand in 2005.

2.6.4.  **Main actors**

The average size of surimi production operations is quite small.

2.6.5.  **Current and future developments**

Vietnamese companies are adapting their operations and products to the main market requirements of Japan and the EU.

The main threat comes from the reduction of the fishing fleet due to economic problems, despite the fleet’s contribution to resource conservation.

2.7.  **India**

2.7.1.  **Main characteristics of production**

More than 15 factories located on the western coast of India produced approximately 35 000 metric tonnes in 2004–2005. The 2006 production is estimated at 38 000 metric tonnes.

2.7.2.  **Raw materials**

Small boats fish the same tropical species, for example, threadfin bream. Operating close to the shore, they make short trips of 3–5 day, which result in greater freshness of fish.

Because of government fishing regulations (fishing bans and fishing net mesh size), fish size is bigger than in Thailand.

2.7.3.  **Surimi trade**

India’s surimi exports can be estimated using the statistics of importing countries. All together for 2004 and 2005, the statistics indicate global exports amounting to around 21 000 metric tonnes:
- 17 842 metric tonnes imported by Japan in 2004,
- 2 674 metric tonnes imported by the Republic of Korea in 2004, and
295 metric tonnes imported by the EU in 2005 (compared to 2 355 metric tonnes in 2002).

2.7.4. Main actors

The average size of factories is small.

The actors to be mentioned are:

- Gadre Marine Export was founded in 1978 and became India’s first surimi manufacturing plant in 1994. It opened a new surimi plant in 2004. It produces 16 000 metric tonnes of surimi per year, and over the past two years produced 3 500 metric tonnes of surimi products. Gadre Marine Export invested US$10 million in a new processing plant that aims to double its capacity to manufacture surimi raw material.

- Hindustan Lever Limited, a subsidiary of Lever Group, leads marine products activity with an installed capacity to produce 41 000 metric tonnes per year in eight seafood processing plants. HLL’s first surimi plant opened in 1995. HLL now operates four plants. Recently it diversified into making surimi-based products.

2.7.5. Current and future developments

India’s surimi production seems to be able to market big volumes and high quality products. The willingness of the government to maintain fishery sustainability, and support fishing trips of short duration and competitive prices give India’s surimi production important trumps for the future.

2.8. Chile

2.8.1. Main characteristics of production

The fishing and aquaculture industry in Chile is an important one. More than 90 percent of production is exported. Onshore surimi production based on jack mackerel reached 18 000 metric tonnes in 2005.

Chile is one of the world’s most important countries for fishmeal production.

Chilean surimi is produced on one main factory-trawler, the Union Sur, owned by Nippon Suisan Kaisha Ltd., and in two onshore plants, which process mainly catches of jack mackerel (jurel) but also some South Pacific hake (Merluccius gayi gayi).

Both Chile and Argentina produce surimi from southern blue whiting and hoki. Total combined production is around 30 000 metric tonnes, of which Chile’s part is small and very low compared to its surimi output from jack mackerel.

Surimi obtained from jack mackerel has a lower gel strength than surimi obtained from white fish species. This is not only related to the species’ natural characteristics, but also to the fact that jack mackerel surimi is mostly processed in onshore plants.

2.8.2. Raw materials

With landings greater than 1.3 million metric tonnes, jack mackerel fishing, together with anchovy fishing, is by far the most important fishing activity in Chile.

Jack mackerel is used mainly for fishmeal production. Less than 7 percent of the total harvest is used for surimi production.
2.8.3. Surimi trade

Because there is no domestic production of surimi-based products, Chile exports all its surimi. Domestic consumption of surimi products is quite low and is satisfied by imports of surimi products from other countries.

The value of Chilean exports in 2005 amounted to:
- US$19.5 million f.o.b. for jack mackerel surimi, and
- US$708 000 f.o.b. for South Pacific hake.

Due to its lower-gel strength and darker color, jack mackerel surimi is priced below other white fish surimi.

The f.o.b. export prices in US$ in 2005 (source: Instituto de Fomento Pesquero (IFOP)) were:
- 1.32 overall average,
- 2.14 for southern blue whiting surimi,
- 1.83 for hake surimi,
- 1.75 for hoki surimi, and
- 1.09 for jack mackerel surimi.

Japan is still the most important destination, importing 9 851 metric tonnes in 2004, and now competes for supplies with Europe, which increased its Chilean imports from around 1 000 metric tonnes at the end of the 1990s to 8 085 metric tonnes in 2005.

2.8.4. Main actors

Surimi production in Chile is divided between two main actors:
- Pesquera El Golfo SA is one of the most important seafood companies in Chile and by far the most important for surimi production. Its exports of fish products totaled US$65.5 million in 2005.
- Pesquera San Jose, although less important for surimi, also has very intense fishing and fish product activity with total exports amounting to US$78.8 million.

2.8.5. Current and future developments

Surimi production using hoki and South Pacific hake will remain at a very low level, as a result of the higher profitability in processing high-priced, frozen fillets. In contrast, southern blue whiting surimi production will remain competitive because processing of fillets of southern blue whiting is hindered by parasite problems.

The potential for jack mackerel surimi seems to be very high because jack mackerel used for fishmeal production has a lower profitability, although this potential might be diminished by other uses for jack mackerel exported in frozen forms to countries in the region for canning and bait use.

2.9. Argentina

2.9.1. Main characteristics of production

Argentina’s surimi production, based on its traditional fishery of white fish species and on its development of the freezing industry, began in the 1990s. Surimi is produced onboard three factory trawlers that operate off the coast of the southern provinces.
• The Norwegian-built *Centurión del Atlántico* belongs to American Seafoods and Aker
  Seafoods. It produces surimi, fishmeal and sea bass products.
• The *Yamato*, of Japanese origin, belongs to Pesantar, a subsidiary of Nippon Suisan Kaisha
  Ltd.
• The *Tai An*, of Chinese origin, belongs to Prodesur, a subsidiary of the big Chinese group
  Shandong Zhonglu Oceanic Fisheries Co. Ltd.

Annual surimi production is estimated at around 20 000–30 000 metric tonnes.

2.9.2. **Raw materials**

The only two species reported as raw materials in surimi production and exports are southern blue
whiting (*Micromesistius australis*) and hoki (*Macruronus magellanicus*). While southern blue
whiting is only used for surimi, hoki has been increasingly exported as H&G (headed and gutted)
to the European markets in recent years, where it competes against New Zealand’s product.

2.9.3. **Surimi trade**

Exports in 2005 reached 14 507 metric tonnes, valued at US$26 567 800. The 2005 figures reflect
a decline in exports compared to 2004 figures, mostly in terms of volume (20 501 metric tonnes)
and not in terms of value (US$27 532 400). This indicates a 36.3 percent rise in the f.o.b. unit
price, from US$1.34/kg in 2004 to US$1.83/kg in 2005. Japan leads the importers’ list, with
12 520 metric tonnes in 2005, valued at US$22 616 600, followed by Spain (912 metric tonnes
and US$2 017 500) and the Republic of Lithuania (341 metric tonnes and US$647 000). The list
of Latin American importing countries is led by Uruguay (261 metric tonnes and US$418 000),
followed by Brazil (122 metric tonnes and US$211 000).

Almost all exports are shipped from Ushuaia harbour.

2.9.4. **Main actors**

As mentioned above, only three companies currently process and export surimi:
• American Seafood, the main surimi exporter in 2004, with 12 700 metric tonnes valued at
  US$17 000 000 (round figures),
• Pesantar (4 400 metric tonnes valued at US$6 800 000), and
• Prodesur (4 000 metric tonnes valued at US$4 600 000).

2.9.5. **Current and future developments**

No signs are indicative of important changes in the surimi production sector. The national
companies do not seem willing to enter this market, or even to resume their former activities in
this area. Market competitiveness for fillets and H&G (especially hoki) is strong at present and
complicates surimi production, especially out of the fishing season. In the case of southern blue
whiting, catches have shown a decline during the last 10 years.

2.10. **Faeroe Islands**

2.10.1. **Main characteristics of production**

Since the end of 2005, Faeroese surimi is produced on the factory trawler *Atlantic Navigator* by
the Naeraberg Company, which is 33 percent owned by Aker Seafoods (subsidiary of the big
Norwegian Aker Group). This trawler replaced an older vessel, the *F/T Naeraberg*. 
With an annual total capture of 75,000 metric tonnes, this factory trawler produces about 20,800 metric tonnes of final products per year: 15,000 metric tonnes of surimi, 5,100 metric tonnes of fishmeal and 700 metric tonnes of fish oil.

2.10.2. Raw materials

Production is based on the country’s share of quotas of northern blue whiting (*Micromesistius poutassou*), mainly fished for fishmeal production.

The northern blue whiting is not a very easy fish to use for surimi production. Because of its small size (230–250 g), it has to be filleted and transformed very quickly.

Northern blue whiting is fished by Norway, the Faeroe Islands, Iceland and the European Union, and estimated total catch reached 2.4 million metric tonnes in 2004. The International Council for the Exploration of the Seas (ICES) recommends reducing the annual quota to 1.5 million metric tonnes.

2.10.3. Surimi trade

All Faeroe Islands’ surimi is exported to various countries directly or through re-exporting countries such as Denmark, Belgium and the Netherlands.

2.10.4. Main actors

The main actors are the Naeraberg Company and its main shareholder is the Aker Group.

2.10.5. Current and future developments

In spite of a global quota reduction, northern blue whiting surimi production has good development potential, as most of this fish is still used only for fishmeal.

2.11. European Union

2.11.1. Main characteristics

The European Union (EU) commercial balance for surimi is largely in deficit.

Of the 25 EU member countries, only a few play an important part in surimi activity:

- France for surimi production,
- Lithuania, France and Spain for production of surimi-based products, and
- France, Spain, Italy and the United Kingdom for consumption of surimi-based products.

The Netherlands plays a minor role in re-exporting surimi mainly from the United States of America and the Faeroe Islands.

The EU demand for surimi is covered for the most part by imports from the United States of America (55 percent) and Chile (22 percent). Recently, the Faeroe Islands have rapidly become an important supplier, providing almost 10 percent of total EU imports (Table 2.11-1 and Figure 2.11-1).
Import prices have fluctuated during the last ten years, with an overall decreasing trend from €2/kg in 1995 to €1.54/kg in 2005 (Table 2.11-2 and Figure 2.11-2). In spite of the increasing global demand, the development of lower quality surimi and the favourable €/US$ exchange rate promoted the downward movement of import prices (Table 2.11-3 and Figure 2.11-3).

Import prices of surimi from Argentina or the United States of American can be double those of surimi from China.

Table 2.11-2: EU-25 surimi price by main country of origin

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>2.25</td>
<td>1.87</td>
<td>2.21</td>
<td>2.00</td>
<td>2.00</td>
<td>2.24</td>
<td>1.81</td>
<td>1.95</td>
<td>1.74</td>
<td>1.32</td>
<td>1.68</td>
<td>2.05</td>
</tr>
<tr>
<td>Chile</td>
<td>2.05</td>
<td>1.80</td>
<td>2.17</td>
<td>2.14</td>
<td>1.92</td>
<td>2.22</td>
<td>1.50</td>
<td>1.64</td>
<td>1.41</td>
<td>1.19</td>
<td>1.19</td>
<td>1.38</td>
</tr>
<tr>
<td>Thailand</td>
<td>2.15</td>
<td>1.98</td>
<td>2.15</td>
<td>2.31</td>
<td>1.93</td>
<td>1.50</td>
<td>1.33</td>
<td>1.23</td>
<td>1.54</td>
<td>1.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>2.06</td>
<td>1.84</td>
<td>2.16</td>
<td>1.91</td>
<td>1.92</td>
<td>2.27</td>
<td>1.92</td>
<td>2.05</td>
<td>1.83</td>
<td>1.43</td>
<td>1.77</td>
<td>2.32</td>
</tr>
<tr>
<td>China (PRC)</td>
<td>1.84</td>
<td>1.66</td>
<td>1.71</td>
<td>1.58</td>
<td>1.58</td>
<td>1.28</td>
<td>0.98</td>
<td>0.89</td>
<td>0.89</td>
<td>1.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average EU-25</td>
<td>2.20</td>
<td>1.89</td>
<td>2.23</td>
<td>2.00</td>
<td>1.98</td>
<td>2.19</td>
<td>1.96</td>
<td>1.86</td>
<td>1.61</td>
<td>1.28</td>
<td>1.54</td>
<td>1.81</td>
</tr>
</tbody>
</table>

( * 6 months in 2006.)
Figure 2.11-2: EU-25 surimi price by main country of origin

EU-25: PRICE OF SURIMI IMPORTS BY MAIN COUNTRIES OF ORIGIN
Price in €/kg (current value)
(Source: Eurostat)

![Chart showing EU-25 surimi price by main country of origin]

(* 6 months in 2006.)

Table 2.11-3: EU-25 surimi import price/exchange rate USD/€

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surimi average import price</td>
<td>1.98</td>
<td>2.19</td>
<td>1.96</td>
<td>1.86</td>
<td>1.61</td>
<td>1.28</td>
<td>1.54</td>
</tr>
<tr>
<td>Surimi average US import price</td>
<td>2.00</td>
<td>2.24</td>
<td>1.81</td>
<td>1.95</td>
<td>1.74</td>
<td>1.32</td>
<td>1.68</td>
</tr>
<tr>
<td>Annual parity US$/€ (*)</td>
<td>0.95</td>
<td>1.08</td>
<td>1.14</td>
<td>1.02</td>
<td>0.87</td>
<td>0.82</td>
<td>0.79</td>
</tr>
</tbody>
</table>

(Source: Eurostat and annual parity estimated from daily statistics)

(* Annual parity is estimated from daily statistics.)

Figure 2.11-3: EU-25 surimi import price/exchange rate USD/€

COMPARISON EU SURIMI IMPORT PRICES, PARITY US$/€
(Source: Eurostat and annual parity estimated from daily statistics)

![Chart showing EU-25 surimi import price/exchange rate USD/€]

(* Annual parity is estimated from daily statistics.)
The EU uses an annual quota and tariff system for surimi frozen, raw material:
- a general tariff, which is 14.2 percent,
- a general tariff suspension, which reduces the general tariff to 3.5 percent,
- an annual quota with no duty, which is fixed for 3 years. It was 30 000 metric tonnes in 2006,
- general and specific tariff systems elaborated to sustain the development of specific countries
  but not especially intended for surimi, i.e. a Generalised System of Preferences (GSP) and
  specific tariff systems GSPA, GSPE and GSPL.
Some specific trade agreements also exist.

For the main countries interested in exporting surimi to the EU, the 2006 duties (besides the free rate quotas) are:
- 3.5 percent for the United States of America (tariff suspension),
- 2.8 percent for Chile (specific to Chile),
- 0 percent for the Faeroe Islands (specific to the Faeroe Islands),
- 3.5 percent for Argentina (GSPL + tariff suspension),
- 3.5 percent for Thailand (GSPL + tariff suspension),
- 3.5 percent for China (GSPL + tariff suspension),
- 3.5 percent for Canada (tariff suspension),
- 3.5 percent for India (GSPL + tariff suspension), and
- 0 percent for Peru (GSPE + tariff suspension).

A study of the import-export-production balance shows (Table 2.11-4 and Figure 2.11-4):
- EU-25 total demand for surimi is 39 319 metric tonnes,
- production represents only 11 percent of this demand, and
- France, Lithuania and Spain are the most important importing countries.

Table 2.11-4: EU-25 main countries surimi import-export-production balance

<table>
<thead>
<tr>
<th>Volume 2005 in metric tonnes (Source: Eurostat for import–export and estimation for production)</th>
<th>EU-25</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EU-25: SURIMI IMPORT–EXPORT–PRODUCTION BY MAIN COUNTRIES</strong></td>
<td></td>
</tr>
<tr>
<td>Imports</td>
<td>FR 18 567</td>
</tr>
<tr>
<td>Production</td>
<td>4 500</td>
</tr>
<tr>
<td>Exports</td>
<td>1 209</td>
</tr>
<tr>
<td>Balance (Export-Import-Prod)</td>
<td>-21 858</td>
</tr>
</tbody>
</table>

Note: FR = France, ES = Spain, IT = Italy, NL = Netherlands, LT = Lithuania.
2.11.2. France

- **Main characteristics of production**

French surimi is produced by two actors: one in Peru and the other in France, working in the North East Atlantic. Arcopa, a subsidiary of the Adrien Group, began onshore surimi production based on local species in 1999 in Peru. Its activity is outlined in section 2.12, dedicated to Peru.

*Joseph Roty 2*, a vessel of the Compagnie des Pêches de Saint-Malo (ex-Comapêche), has been catching blue whiting for the past 17 years in the North East Atlantic, mainly to supply the company’s raw material requirements for producing surimi and surimi products. The vessel’s annual capacity recently doubled to 4 500–5 000 metric tonnes of surimi, which represents about 25 000 metric tonnes round fish.

- **Raw materials**

As mentioned in the case of the Faeroese production, blue whiting is fished by Norway, the Faeroe Islands, Iceland and the EU, with an estimated total catch of 2.4 million metric tonnes in 2004. Towards the end of 2005, these parties agreed on the allocation of fishing quotas. The Total Allowable Catch (TAC) was set at 2 million tonnes in 2006. The agreement also involves a systematic lowering of the TAC in coming years. Based on precautionary principles, the ICES has advised that no more than 1.5 million tonnes should be fished in 2006.

- **Main exchanges**

The Compagnie des Pêches de Saint-Malo uses the main part of its vessel landings for surimi products elaboration, even if its recent increase in capacity allows for some more external sales.

France’s imports of frozen surimi increased dramatically to 18 567 metric tonnes in 2005 (Table 2.11-5 and Figure 2.11-5):

- about 10 000 metric tonnes from the United States of America (including an estimate of the United States portion of the re-export to the Netherlands), which means more than 50 percent of all imports,
• 5,900 metric tonnes from Chile, and
• 2,700 metric tonnes from countries such as the Faeroe Islands, Argentina, Canada and Thailand.

France’s imports account for more than 40 percent of total EU-25 imports.

Table 2.11-5: France surimi imports by main countries

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>2,136</td>
<td>2,518</td>
<td>4,050</td>
<td>6,967</td>
<td>8,553</td>
<td>6,733</td>
<td>7,127</td>
<td>10,105</td>
<td>8,510</td>
<td>8,172</td>
<td>6,652</td>
</tr>
<tr>
<td>Chile</td>
<td>325</td>
<td>914</td>
<td>926</td>
<td>594</td>
<td>877</td>
<td>550</td>
<td>1,447</td>
<td>3,139</td>
<td>4,505</td>
<td>4,508</td>
<td>5,902</td>
</tr>
<tr>
<td>Argentina</td>
<td>72</td>
<td>431</td>
<td>1,183</td>
<td>615</td>
<td>625</td>
<td>475</td>
<td>977</td>
<td>586</td>
<td>434</td>
<td>227</td>
<td>316</td>
</tr>
<tr>
<td>Canada</td>
<td>89</td>
<td>428</td>
<td>186</td>
<td></td>
<td></td>
<td></td>
<td>310</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peru</td>
<td>44</td>
<td>508</td>
<td>371</td>
<td>326</td>
<td>368</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>159</td>
<td>11</td>
<td>18</td>
<td>234</td>
<td>398</td>
<td>495</td>
<td>207</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands(*)</td>
<td>734</td>
<td>3,811</td>
<td>4,742</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faeroe Islands</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>869</td>
<td>205</td>
<td>109</td>
<td>176</td>
<td>626</td>
<td>639</td>
<td>1,252</td>
<td>82</td>
<td>191</td>
<td>110</td>
<td>197</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3,446</td>
<td>4,068</td>
<td>6,268</td>
<td>8,441</td>
<td>11,776</td>
<td>8,987</td>
<td>11,147</td>
<td>14,824</td>
<td>15,029</td>
<td>18,205</td>
<td>18,567</td>
</tr>
</tbody>
</table>

(* Re-export from USA and Faeroe Islands.)

Presently, France exports only 1,200 metric tonnes of frozen surimi, mainly to Spain (915 metric tonnes) and to the United Kingdom (122 metric tonnes).

Main actors

Compagnie des Pêches de Saint-Malo was founded in 1982 as an industrial fishing operation and later diversified into a fish processing operation. The annual turnover was €51 million in 2004. Trading companies such as Interpral SA and Future Seafood Europe manage surimi imports.

Current and future developments

As mentioned above, France’s surimi production could be relatively stable in the future.
2.12. Other surimi producers

2.12.1. Peru

Peru has the second biggest fishing industry in the world, just after China. In 2004, more than 9 million metric tonnes were caught. The Peruvian fishing industry is mainly focused on fishmeal production.

Since 1999 Arcopa operates an onshore factory in Peru for surimi production based on local species: Peruvian anchoveta, long nose anchovy, lumptail searobin, Pacific drum, Pacific harvestfish and giant squid. The surimi obtained from these species is mainly mixed with Alaskan pollock surimi. Arcopa capacity for surimi production was estimated at 1 500–2 000 metric tonnes in 2001. In 2002, a new factory was built, adding two production lines to Arcopa’s operations. Total capacity of the new factory is 30 metric tonnes per day.

Arcopa’s surimi is sold mainly on the European market.

Arcopa is a subsidiary of the French Adrien Group, a family enterprise founded in 1979 and specialized in fishing, fish farming, fish processing and seafood trading, with an annual turnover of around €100 million.

Even though current Arcopa production uses mainly anchovy and giant squid as raw material, the ability to use diverse species theoretically ensures a secure supply of raw material, when in fact many different elements play a role in determining raw material availability, including the degree to which fishmeal production is developed on the Peruvian coast and the El Nino phenomenon.

Another Peruvian company, Coinrefri, specialized in frozen seafood products, also produces surimi from giant squid.

In general, it seems that the Peruvian surimi industry is not developing as initially expected, despite specific assistance from Japanese agencies.

2.12.2. Republic of Korea

Surimi production of the Republic of Korea declined dramatically in recent years (Table 2.12-1 and Figure 2.12-1).

Table 2.12-1: South Korea annual surimi production

| SOUTH KOREA: ANNUAL SURIMI PRODUCTION (Source: Ministry of Maritime Affairs and Fisheries) in metric tonnes |
|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| Type Production | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
| Onshore | 14 769 | 14 693 | 7 326 | 5 095 | 5 487 | 4 442 | 11 040 | 3 500 |
| Deep-sea | 15 668 | 18 303 | 3 327 | | | | | |
| TOTAL | 30 437 | 32 996 | 10 653 | 5 095 | 5 487 | 4 442 | 11 040 | 3 500 |

38
In the early 1990s, the Republic of Korea produced about half of the 90 000 metric tonnes of surimi needed annually. Presently, the country produces 3 500 metric tonnes per year, a greatly reduced amount. The remainder of the country’s needs are covered thanks to 110 000 tonnes per year of imports.

The three main supplying countries are the United States of America (36 percent), Viet Nam (23 percent) and China (22 percent). Alaska pollock surimi from the United States of America was the leading fish import of value in 2004 (Table 2.12-2 and Figure 2.12-2).

Table 2.12-2: South Korea surimi import

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>32 512</td>
<td>37 032</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viet Nam</td>
<td>25 751</td>
<td>24 385</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>China (PRC)</td>
<td>15 843</td>
<td>22 759</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>13 333</td>
<td>9 464</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>3 643</td>
<td>4 561</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>3 181</td>
<td>2 674</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>3 461</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 327</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>72 384</td>
<td>94 108</td>
<td>92 236</td>
<td>1 625</td>
<td>1 987</td>
<td>110 000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>72 384</td>
<td>94 108</td>
<td>92 236</td>
<td>99 349</td>
<td>104 189</td>
<td>110 000</td>
</tr>
</tbody>
</table>
Figure 2.12-2: South Korea surimi import

SOUTH KOREA: ANNUAL SURIMI IMPORTS BY MAIN COUNTRIES
(Source: USDA and statistical yearbook of foreign trade)

<table>
<thead>
<tr>
<th>Year</th>
<th>Argentina</th>
<th>Canada</th>
<th>India</th>
<th>Malaysia</th>
<th>Thailand</th>
<th>China (PRC)</th>
<th>Viet Nam</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It should be noted that the total catch quota purchased in 2005 by the Republic of Korea from the Russian Federation included 20 500 metric tonnes of Alaska pollock.

Thanks to lower warehouse fees, the Republic of Korea developed a storing service, mainly in Busan. Japanese seafood importers (especially for American surimi and pollock roes) store the products in Korean bonded warehouses without customs clearance, and later ship them to Japan or export them to other countries, including China.

2.12.3. Malaysia

Surimi production in Malaysia is based on threadfin bream, big eye, lizard fish and other tropical species. Production is estimated at 8 000 metric tonnes per year, following an important cutback during the economic crisis at the end of the 1990s.

Less than 15 Malaysian companies produced surimi and surimi products in 2001. Joint ventures, e.g. with Thai partners, plan to invest in new factories.

2.12.4. Indonesia

Surimi production is developing in Indonesia. For instance, the company PT Blue Sea of the Republic of Korea is investing in a fish processing plant in Java, which will produce 2 000 metric tonnes per year of surimi.
3. SURIMI-BASED PRODUCTS: PRODUCTION AND MARKETS

3.1. World: general outlines

3.1.1. Production of surimi-based products

Foods made from surimi (fish paste) are traditional in Asia, mainly in Japan. Presently, these surimi-based foods are traded worldwide and are continuously developing into new varieties. The very extensive product variety ranges from traditional Asian preparations to sophisticated lobster-tail imitations, and including imitation breaded crab claws and scallops, imitation lobster and shrimp tail meat, imitation lobster claw and crab claw meat, cocktail of imitation snow crab claw, fish ham and sausages, fish cakes. Sticks, chunks, bites, claws, scallops, patties fritters, rings, burgers, tofu and wraps.

The most common product consumed all over the world is imitation crabmeat sticks produced in various sizes and in flakes. The quality of the ‘crab sticks’ can vary depending upon the producer and country of origin.

A common recipe for crab sticks might include surimi, water, egg white, potato flour, crabmeat, oil, stabilizing agents, crab flavouring and paprika for the red colour.

From recipe to recipe, the quality and proportion of surimi can vary greatly according to the type of product and the targeted price. Crabmeat imitation sticks usually contain around 35–40 percent of fish, sometimes less. For high quality sticks, the surimi content can be as much as 85 percent.

Consumers can also find surimi combined with vegetables, cheese and tofu.

3.1.2. Main producing countries

The world production of surimi-based products is estimated at 1.4 million metric tonnes per year.

Countries that produce an important part of surimi-based products for domestic consumption are:
- Japan
- the Republic of Korea
- France
- Spain
- Italy
- the United States of America

Countries that produce mainly for export are:
- Thailand
- China
- Lithuania
- India

3.1.3. Main markets

Although Japan remains the most important consumer market for surimi-based products, the EU recently became an important consumer market as well. EU enlargement from 15 to 25 member countries including Lithuania, a very important producer, contributed to this transformation.

France is the most important European market, with combined production and importation. Spain ranks second.
3.1.4. **Surimi products trade**

At the outset of the worldwide expansion of trade in surimi products, trade flowed mainly from Asia to Europe. However, Chinese exports to Europe slowed in 2002 when the EU placed an embargo on Chinese seafood products because of antibiotic residues in some of them. Even if Chinese exports to Europe in 2005 reached the level of exports in 2001, the 2002 crisis opened the door to commercial development for other Asian countries, such as Thailand, India and Malaysia.

3.1.5. **European Union trade barriers**

The duty on third country products entering the EU is 20 percent, but some special preference systems are built in to help developing countries. For the main countries exporting surimi products to the EU, 2005 duties are:

- 14 percent for China (GSPL),
- 14 percent for Thailand (GSPL),
- 20 percent for the Republic of Korea,
- 14 percent for Malaysia (GSPL),
- 14 percent for India (GSPL), and
- 0 percent for Peru (GSPE).

3.2. **Japan**

3.2.1. **National production**

The Japanese surimi products industry transforms 400,000 metric tonnes per year of surimi raw material into surimi products, using 300,000 metric tonnes of imported surimi raw material and 100,000 tonnes of Japan’s own surimi raw material.

Over the last 30 years, production has steadily decreased from around 1.2 million metric tonnes in 1973 to less than 700,000 metric tonnes in the beginning of the 2000s. This is equal to a 42 percent drop in 30 years (Table 3.2-1 and Figure 3.2-1).

<table>
<thead>
<tr>
<th>JAPAN: PRODUCTION OF SURIMI-BASED PRODUCTS in metric tonnes (Source: NOAA’s National Marine Fisheries Service)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
</tr>
<tr>
<td>1974</td>
</tr>
<tr>
<td>1975</td>
</tr>
<tr>
<td>1976</td>
</tr>
<tr>
<td>1977</td>
</tr>
<tr>
<td>1978</td>
</tr>
<tr>
<td>1979</td>
</tr>
<tr>
<td>1980</td>
</tr>
<tr>
<td>1981</td>
</tr>
<tr>
<td>1982</td>
</tr>
<tr>
<td>1983</td>
</tr>
<tr>
<td>1984</td>
</tr>
<tr>
<td>1985</td>
</tr>
<tr>
<td>1986</td>
</tr>
<tr>
<td>1987</td>
</tr>
<tr>
<td>1988</td>
</tr>
<tr>
<td>1989</td>
</tr>
<tr>
<td>1990</td>
</tr>
<tr>
<td>1991</td>
</tr>
<tr>
<td>1992</td>
</tr>
<tr>
<td>1993</td>
</tr>
<tr>
<td>1994</td>
</tr>
<tr>
<td>1995</td>
</tr>
<tr>
<td>1996</td>
</tr>
<tr>
<td>1997</td>
</tr>
<tr>
<td>1998</td>
</tr>
<tr>
<td>1999</td>
</tr>
<tr>
<td>2000</td>
</tr>
<tr>
<td>2001</td>
</tr>
</tbody>
</table>

Table 3.2-1 and Figure 3.2-1 Japan surimi products production
3.2.2.  Surimi products trade

As regards imports of surimi products, it was not possible to find data on this subject.

Exports of surimi products (Table 3.2-2 and Figure 3.2-2) stabilized at around 5,500 metric tonnes per year during the last few years but more recently grew to 6,623 metric tonnes in 2005 (+20 percent). Price remains stable at Yen650/kg.

Table 3.2-2: Japan surimi products export

<table>
<thead>
<tr>
<th>Year</th>
<th>Metric tonnes</th>
<th>Millions Yen</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>5,560</td>
<td>3,654</td>
</tr>
<tr>
<td>2001</td>
<td>5,738</td>
<td>3,794</td>
</tr>
<tr>
<td>2002</td>
<td>5,531</td>
<td>3,721</td>
</tr>
<tr>
<td>2003</td>
<td>5,421</td>
<td>3,606</td>
</tr>
<tr>
<td>2004</td>
<td>5,752</td>
<td>3,765</td>
</tr>
<tr>
<td>2005</td>
<td>6,623</td>
<td>4,328</td>
</tr>
</tbody>
</table>

Figure 3.2-2: Japan surimi products export

3.2.3.  Consumption trends

A general category of products known as ‘kamuboko’, which includes different types of fish patties (in casing, steamed, fried, boiled, flavored), comprise the most important part (70 percent) of the total production of surimi products in Japan. Broiled surimi products and fish ham and sausages comprise 20 percent and 10 percent respectively of the total production. The production of all of these products has decreased (Table 3.2-3 and Figure 3.2-3).

Table 3.2-3: Japan surimi products recent production

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yaki-Chikuwa baked fish paste bar</td>
<td>200 000</td>
<td>182 000</td>
<td>170 000</td>
<td>153 000</td>
<td>146 000</td>
<td>142 000</td>
<td>137 000</td>
</tr>
<tr>
<td>Kamaboko steamed fish paste patty</td>
<td>618 000</td>
<td>647 000</td>
<td>565 000</td>
<td>493 000</td>
<td>494 000</td>
<td>473 000</td>
<td>453 000</td>
</tr>
<tr>
<td>Aged-kamaboko fried fish paste patty*</td>
<td>291 000</td>
<td>280 000</td>
<td>259 000</td>
<td>232 000</td>
<td>231 000</td>
<td>223 000</td>
<td>212 000</td>
</tr>
</tbody>
</table>

(* This category seems to be included in global kamaboko quantities.)
A study of sales volumes of surimi products in wholesale markets shows the same downward trend as seen in the country’s production levels of surimi products. It reveals changes in Japanese consumer habits (Table 3.2-4 and Figure 3.2-4).

Table 3.2-4: Japan surimi products wholesale evolution

<table>
<thead>
<tr>
<th>Year</th>
<th>Metric tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>115 047</td>
</tr>
<tr>
<td>2001</td>
<td>111 244</td>
</tr>
<tr>
<td>2002</td>
<td>103 445</td>
</tr>
<tr>
<td>2003</td>
<td>102 339</td>
</tr>
<tr>
<td>2004</td>
<td>100 105</td>
</tr>
<tr>
<td>2005</td>
<td>95 471</td>
</tr>
</tbody>
</table>

Figure 3.2-4: Japan surimi products wholesale evolution
Most consumption of surimi products occurs towards the end of the year, on the occasion of seasonal festivities. Sales increase sharply during December (+60 percent), as do prices (+40 percent: to Yen660/kg instead of Yen470/kg during the rest of the year) (Table 3.2-5 and Figure 3.2-5, Table 3.2-6 and Figure 3.2-6).

Table 3.2-5: Japan monthly surimi-based products sales

<table>
<thead>
<tr>
<th>Month</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>8 591</td>
<td>8 843</td>
<td>8 482</td>
<td>8 009</td>
</tr>
<tr>
<td>February</td>
<td>7 849</td>
<td>8 200</td>
<td>8 087</td>
<td>7 350</td>
</tr>
<tr>
<td>March</td>
<td>8 493</td>
<td>8 577</td>
<td>7 934</td>
<td>7 242</td>
</tr>
<tr>
<td>April</td>
<td>8 051</td>
<td>7 940</td>
<td>7 576</td>
<td>6 811</td>
</tr>
<tr>
<td>May</td>
<td>7 891</td>
<td>7 533</td>
<td>7 073</td>
<td>7 039</td>
</tr>
<tr>
<td>June</td>
<td>7 319</td>
<td>7 417</td>
<td>6 784</td>
<td>6 479</td>
</tr>
<tr>
<td>July</td>
<td>7 325</td>
<td>6 713</td>
<td>6 479</td>
<td>6 398</td>
</tr>
<tr>
<td>August</td>
<td></td>
<td></td>
<td>6 479</td>
<td>6 398</td>
</tr>
<tr>
<td>September</td>
<td>8 054</td>
<td>7 537</td>
<td>7 041</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>9 956</td>
<td>9 351</td>
<td>8 430</td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>8 893</td>
<td>9 274</td>
<td>8 670</td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>13 024</td>
<td>12 043</td>
<td>12 516</td>
<td></td>
</tr>
</tbody>
</table>

(Source: NOAA’s National Marine Fisheries Service)

Figure 3.2-5: Japan monthly surimi-based products sales
Table 3.2-6: Japan surimi products sales prices

<table>
<thead>
<tr>
<th>Month</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>495</td>
<td>487</td>
<td>478</td>
<td>484</td>
</tr>
<tr>
<td>February</td>
<td>490</td>
<td>455</td>
<td>458</td>
<td>484</td>
</tr>
<tr>
<td>March</td>
<td>454</td>
<td>458</td>
<td>451</td>
<td>489</td>
</tr>
<tr>
<td>April</td>
<td>450</td>
<td>455</td>
<td>458</td>
<td>498</td>
</tr>
<tr>
<td>May</td>
<td>459</td>
<td>455</td>
<td>471</td>
<td>483</td>
</tr>
<tr>
<td>June</td>
<td>455</td>
<td>453</td>
<td>468</td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>455</td>
<td>455</td>
<td>468</td>
<td></td>
</tr>
<tr>
<td>August</td>
<td></td>
<td>471</td>
<td>470</td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>458</td>
<td>455</td>
<td>474</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>456</td>
<td>455</td>
<td>479</td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>467</td>
<td>466</td>
<td>478</td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>667</td>
<td>674</td>
<td>660</td>
<td></td>
</tr>
</tbody>
</table>

(Source: NOAA’s National Marine Fisheries Service)

Figure 3.2-6: Japan surimi products sales prices

3.2.4. Main actors

Big international Japanese companies active in the surimi products business are:

- Nippon Suisan Group (section 2.2.5), which produces the full range of surimi products under its own brand ‘Nissui’, and
- Maruha Group, whose marine products sector nets sales of more than Yen540 billion, with its 25 joint ventures worldwide.

One of the more specialized and smaller companies is:

- Ichimasa Kamaboko Co. Ltd., with Yen26 billion in sales and 915 employees.
3.2.5. **Current and future developments**

In Japan, as in other developed countries, food distribution and consumer habits follow similar trends (Table 3.2-7 and Figure 3.2-7):
- meal preparation outside of the home,
- increasing demand for ready-to-eat dishes,
- increasing demand for healthy and natural products, and
- increasing competition between food and non-food expenditures.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>18%</td>
<td>8%</td>
<td>8%</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>Fresh vegetables</td>
<td>7%</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>Fresh meat</td>
<td>7%</td>
<td>9%</td>
<td>8%</td>
<td>7%</td>
<td>6%</td>
</tr>
<tr>
<td>Fresh fishery products</td>
<td>7%</td>
<td>8%</td>
<td>8%</td>
<td>7%</td>
<td>6%</td>
</tr>
<tr>
<td>Prepared foods</td>
<td>3%</td>
<td>4%</td>
<td>6%</td>
<td>8%</td>
<td>11%</td>
</tr>
<tr>
<td>Foods consumed out</td>
<td>7%</td>
<td>11%</td>
<td>15%</td>
<td>17%</td>
<td>18%</td>
</tr>
</tbody>
</table>

(Source: Ministry of Internal Affairs and Communication)

Suppliers of surimi products must adapt their offers to changes in consumer habits and food distribution, and they must develop new solutions such as a range of food services, innovative products, increased product competitiveness and better segmentation.

Even so, it seems that in the future Japanese consumption of surimi products will not remain at past levels.
3.3. Republic of Korea

3.3.1. National production

Production of surimi-based products in the Republic of Korea is estimated at around 200 000 metric tonnes per year.

The major seafood processing companies of the Republic of Korea are often present in other countries, either directly or through joint ventures. Korean companies and joint ventures with Chinese operators own a dozen fish processing plants in China that process fish purchased by Korean importers from the United States of America with open Letters of Credit and shipped directly to China. Processed products, mainly fish fillets and imitation crabmeat, are then exported to Europe, the United States of America and the Republic of Korea. Importing some raw material via China – a special system developed by Korean importers – could explain the discrepancy between United States exports to the Republic of Korea (61 000 metric tonnes in 2004 according to United States statistics) and Korean imports from the United States of America (37 000 metric tonnes in 2004 according to Korean statistics).

The range of surimi products can be very wide, with different products containing varying percentages of surimi. The examples in Table 3.3-1 are taken from the advertising material of one Korean company.

Table 3.3-1: Example of a South Korean producer’s range of surimi products

<table>
<thead>
<tr>
<th>EXAMPLE OF A SOUTH KOREAN PRODUCER’S RANGE OF SURIMI PRODUCTS</th>
<th>(Source: Blue-is Inc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>Size</td>
</tr>
<tr>
<td>Imitation crabmeat stick</td>
<td>3.5 inch, 5 inch</td>
</tr>
<tr>
<td>Imitation crabmeat flake</td>
<td>2–2.5 cm</td>
</tr>
<tr>
<td>Imitation crabmeat bite</td>
<td>1–1.5 cm</td>
</tr>
<tr>
<td>Imitation crabmeat shredded</td>
<td></td>
</tr>
<tr>
<td>Imitation breaded crab claw</td>
<td>33 g/piece</td>
</tr>
<tr>
<td>Imitation breaded scallop meat</td>
<td>25 g/piece</td>
</tr>
<tr>
<td>Imitation lobster tail meat</td>
<td>85 g/piece</td>
</tr>
<tr>
<td>Imitation shrimp tail meat</td>
<td>27 g/piece</td>
</tr>
<tr>
<td>Imitation lobster claw meat</td>
<td>33–35 g</td>
</tr>
<tr>
<td>Imitation crab claw meat</td>
<td>13–15 g</td>
</tr>
<tr>
<td>Imitation cocktail of snow crab</td>
<td>10–15 piece/kg</td>
</tr>
<tr>
<td></td>
<td>-&gt;26–30 piece/kg</td>
</tr>
</tbody>
</table>

3.3.2. Surimi products trade

- Imports

Generally speaking, imports provide increasingly more supplies to the seafood market of the Republic of Korea. This is due to the depletion of near- and deep-sea resources and fisheries, and the increasing domestic demand for processed products, especially surimi.

To match this increasing demand, the Republic of Korea has enforced specific or general lower custom duties (Free Trade Agreement with European Free Trade Association (EFTA) countries for example) in order to facilitate the importation of required products.

- Exports (Table 3.3-2 and Figure 3.3-1)

Korean export of surimi products has dramatically decreased during the last five years from 28 566 metric tonnes in 2000 to 12 599 metric tonnes in 2004. This trend is confirmed by EU
statistics, which show a decrease from over 21 000 metric tonnes in 2000 to less than 6 000 metric tonnes in 2005.

Table 3.3-2: South Korea fishery products and imitation crabmeat exports

| SOUTH KOREA: EXPORTS OF FISHERY PRODUCTS AND IMITATION CRAB MEAT in metric tonnes |
|---------------------------------|----------------|----------------|----------------|----------------|----------------|
| Export                          | 2000           | 2001           | 2002           | 2003           | 2004           |
| Fishery products                | 533 824        | 435 681        | 429 884        | 424 785        | 406 435        |
| Imitation crab meat             | 28 566         | 24 411         | 22 475         | 16 312         | 12 599         |

(Source: Statistical yearbook of foreign trade)

Figure 3.3-1: South Korea fishery products and imitation crabmeat exports

3.3.3. Consumption trends

The Korean seafood market follows the general trends of food consumption in the country:
• growing taste for imported foods,
• growing demand for convenience foods,
• declining demand for rice-based foods, and
• improved food quality and food safety issues.

Seafood consumption per capita is very high, at around 48 kg/year. It has increased during recent years because meat and poultry consumption has been threatened by livestock and poultry diseases such as Bovine Spongiform Encephalopathy (BSE), foot-and-mouth disease and bird flu.

3.3.4. Main actors

Many groups in the Republic of Korea are involved in the seafood and surimi products business worldwide. Among them:
• Hansung Enterprise Co. Ltd., founded in 1963, was the first Korean company to fish in the North Pacific Ocean (1969). It operates a fishing fleet for tuna, ground fishes and squid. Three
trawlers catch Alaska pollock, cod and sole in the North Pacific Ocean, and one trawler fishes for yellow croaker, stingray and ribbon fish in Indonesian waters.

Hansung Enterprise Co. Ltd. has three subsidiaries; one in Argentina (Hansung AR SA), one in the United States of America (Pacific Giant) and one in China (Qinhuangdao Xinghua Concrete Co., Ltd.). It produces many different seafood products, including a traditional range of surimi products such as crab sticks, flakes, chunks and claws.

- Oriental Pacific Seafood Corporation (OPS), established recently (2003), specializes in seafood manufacturing and supply. It heads a joint venture in China (Dalian Longxiang Seafoods Co. Ltd.), with 150 employees and a production capacity of 7 000 metric tonnes of surimi products. OPS markets a traditional range of surimi products: imitation crabmeat in stick, flake and nugget form, breaded crab claws, and breaded scallop meat and lobster tail meat. Products come from China but also from the Republic of Korea, Thailand and Malaysia.

- Blue-is Inc., located in Seoul, has two joint ventures, one in Viet Nam and one in China. It sells a traditional range of surimi products made from a high-grade, imitation crabmeat containing 85 percent of surimi. It also processes and sells ingredients for imitation crabmeat (red and paprika colour, crab flavour, crab extract).

- LG International Corporation is a huge company involved with chemicals, energy, information and technology and the fashion business, but it also markets seafood and surimi products manufactured in overseas joint ventures such as Lucky Union Foods in Thailand.

- Freeko Peru SA, a company established in 1998 in Peru with financing by the Republic of Korea. It specializes in surimi products, which for the most part are exported to the United States of America and the EU.

3.3.5. Current and future development

At the same time as seafood consumption in the Republic of Korea is increasing, the country’s own resources are being depleted. Therefore, the Korean companies manufacturing surimi products must continue to secure their supplies of raw materials and to adapt their products to a changing market which demands easy, ready-to-use, safe, healthy products, and catering services. Their size and resources constitute an advantage in the effort to succeed in an evolving market.

3.4. Thailand

3.4.1. National production

Thai output of surimi-based products is estimated at around 150 000 metric tonnes per year, based on almost 50 000 metric tonnes of raw material primarily supplied by its own industry: 140 000 metric tonnes of Thai origin + 5 376 metric tonnes of imports – 94 000 metric tonnes of exports.

3.4.2. Surimi products trade

Producers receive favourable custom duty treatment:
- surimi or surimi products for export by ship are exempt,
- marine products imported for reprocessing and export are exempt, and
- surimi and surimi products for domestic consumption are subject to import tariffs of 5 percent and 20 percent respectively.

Even if surimi imports increased in 2005, they remain at the low level of 5 376 metric tonnes.
It was not possible to find Thai general trade statistics on surimi products. Statistics from importing countries would indicate that total Thai exports are greater than 17,000 metric tonnes per year, with the United States of America receiving 1,000 metric tonnes per year and the EU receiving 16,000 metric tonnes per year.

3.4.3. **Consumption trends**

Thai consumption of surimi products increased in the last few years and presently includes traditional fish cakes and fish balls as well as imitation crabmeat and new products.

3.4.4. **Main actors**

Among the companies producing various types of surimi products, one of the biggest is Lucky Union Foods, founded in 1992. It has a joint venture with the LG International Corporation of the Republic of Korea.

Export markets for Lucky Union Foods are the EU, the United States of America and Asia. On the domestic market, Lucky Union Foods are marketed under Kani Family brand. Table 3.4-1 illustrates Lucky Union Foods’s very wide range of products.

<table>
<thead>
<tr>
<th>EXAMPLE OF A THAI PRODUCER’S RANGE OF SURIMI PRODUCTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>(Source: Lucky Union Foods)</em></td>
</tr>
<tr>
<td><strong>Filament products</strong></td>
</tr>
<tr>
<td>Surimi filament crab sticks</td>
</tr>
<tr>
<td>Surimi filament crab chunks</td>
</tr>
<tr>
<td>Surimi smoked salmon sticks</td>
</tr>
<tr>
<td>Surimi smoked salmon chunks</td>
</tr>
<tr>
<td>Surimi smoked salmon bites</td>
</tr>
<tr>
<td><strong>Breaded/unbreaded products</strong></td>
</tr>
<tr>
<td>Surimi unbreaded crab claws</td>
</tr>
<tr>
<td>Surimi breaded crab claws</td>
</tr>
<tr>
<td>Surimi unbreaded scallops</td>
</tr>
<tr>
<td>Surimi breaded scallops</td>
</tr>
<tr>
<td>Fancy seafood patties</td>
</tr>
<tr>
<td>Surimi seafood fritters</td>
</tr>
<tr>
<td>Surimi breaded shrimp, tail-on torpedo shape</td>
</tr>
<tr>
<td>Surimi breaded shrimp, tail-on butterfly shape</td>
</tr>
<tr>
<td>Surimi lemon-grass shrimp sticks</td>
</tr>
<tr>
<td>Surimi breaded seafood rings</td>
</tr>
<tr>
<td>Surimi unbreaded seafood rings</td>
</tr>
<tr>
<td>Surimi breaded veggie burgers</td>
</tr>
<tr>
<td><strong>Value-added products</strong></td>
</tr>
<tr>
<td>Surimi seafood samosas curry flavour</td>
</tr>
<tr>
<td>Surimi seafood samosas vegetables</td>
</tr>
<tr>
<td>Surimi spring rolls, cream cheese flavour</td>
</tr>
<tr>
<td>Surimi spring rolls minced crab stick</td>
</tr>
<tr>
<td>Surimi tofu</td>
</tr>
<tr>
<td>Surimi vegetable tofu</td>
</tr>
<tr>
<td>Surimi tofu prefried</td>
</tr>
<tr>
<td>Surimi green tofu</td>
</tr>
<tr>
<td>Surimi layered tofu</td>
</tr>
<tr>
<td>Surimi black sesame tofu</td>
</tr>
<tr>
<td>Surimi seafood fingers ham wraps</td>
</tr>
<tr>
<td>Surimi seafood fingers seaweed wraps</td>
</tr>
<tr>
<td>Surimi seafood fingers omelet wraps</td>
</tr>
<tr>
<td>Surimi moji pizza, cheese filling</td>
</tr>
</tbody>
</table>

Table 3.4-1: Example of a Thai producer’s range of surimi products

51
### 3.4.5. Current and future development

The Thai surimi products sector will have to face increasing demand on both domestic and foreign markets.

The main threat is raw material availability. Future success of the surimi products sector will depend on Thailand’s ability to find reliable and economical supply sources.

### 3.5. People’s Republic of China

#### 3.5.1. National production

Since there are no official statistics available, China’s surimi products activity can only be estimated at around 100 000 metric tonnes per year. This figure is derived from a surimi production estimate of 80 000 metric tonnes per year (section 2.5.1.) minus surimi exports of 50 000 metric tonnes (section 2.5.3.). This would mean that around 30 000 metric tonnes are available for processing into surimi products. Allowing for a theoretical 30–40 percent surimi content in surimi products, the resulting estimate for surimi-products production is 75 000–100 000 metric tonnes per year.

#### 3.5.2. Surimi products trade

China is exporting surimi products to the EU (16 316 metric tonnes in 2005) and to the United States of America (2 170 metric tonnes in 2005).

European imports of surimi products from China were restored to pre-2002 levels. (In 2002 Chinese exports suffered a crisis, dropping drastically when products were banned from the EU because of the presence of antibiotics.)

The Russian Federation is becoming a major market for Chinese surimi-based products.

#### 3.5.3. Consumption trends

Aquatic products are popular everywhere in China, but consumption modes vary from area to area. In coastal cities, the affluent population is the greatest consumer of costly seafood, while throughout the country the Chinese consume freshwater products. The Shanghai area leads China...
in aquatic product consumption. As a result of increasing incomes and market openings, seafood consumption in China is rising.

3.5.4. **Main actors**

Many Chinese seafood companies are involved in producing surimi products. Some of them are joint ventures founded with assets of South Korean, Japanese and European companies looking for low production costs and expansion potential. Some of the most important companies are listed in Appendix 8.

3.5.5. **Current and future development**

Surimi products production is a promising sector of the future fish trade business in China. A number of plants have been established in China to manufacture surimi products. Increasing demand for Chinese surimi products by both domestic and international markets will continue to cause the sector to expand.

It is predictable that, as in many other Asian countries, exports will compete with Chinese domestic demand. Market prices and product competition will determine surimi raw material prices.

According to the Chinese who operate manufacturing plants, the problem that the industry will have to face is a shortage of raw surimi. This prospect leads companies to set up overseas plants to produce raw surimi and ship it back to China for making surimi-based products.

3.6. **Other Asian countries**

3.6.1. **Malaysia**

In Malaysia, production is based on surimi raw material, both imported and supplied from within the country. Malaysia, together with Singapore, uses over 10 000 metric tonnes per year of surimi in order to produce various surimi-based products, mainly for export.

One of the leading suppliers of surimi and surimi products is Seapack, which was founded in 1990. Seapack is a subsidiary of the Texchem Group of companies. Seapack’s integrated production goes from processing raw surimi to elaborating final crabmeat sticks and claws, lobster and prawn tails, and scallops. The production goal is to reach 7 000 metric tonnes per year. Eighty-five percent of production is exported, mainly to Europe.

3.6.2. **Republic of China**

The import value of surimi is reported at US$22 million in 2004 (22 percent from the United States of America, 40 percent from India and 31 percent from Thailand). Assuming a hypothetical average price of US$2/kg, surimi imports could be valued at 11 000 metric tonnes per year.

The Surimi School estimates total surimi availability at 16 000 metric tonnes per year, and therefore the production of surimi products could be estimated at around 40 000–50 000 metric tonnes per year.
3.6.3. India

Even if India does not as yet have a very important surimi products activity, it is mentioned in this study because of its real development potential, and because of the Unilever initiative. Unilever Group’s subsidiary, Hindustan Lever Ltd., a surimi producer since 1995, recently started to produce imitation crabmeat sticks. HLL has developed a commercial strategy that takes advantage of Unilever Group’s international enterprises, especially in Spain.

Another example of India’s potential as a producer of surimi products is a company called Gadre Marine Export Pvt. Ltd., whose strategy and present development are focused on production of surimi products.

3.7. European Union overall

Total EU-25 production of surimi products is roughly estimated at around 100 000–110 000 metric tonnes per year.

The European apparent market is assessed at 160 559 metric tonnes per year, of which 33 percent comes from third country imports (Table 3.7-1 and Figure 3.7-1).

Table 3.7-1: EU surimi products apparent market

<table>
<thead>
<tr>
<th>EU-25: APPARENT MARKET OF SURIMI PRODUCTS in metric tonnes</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import</td>
<td>52 907</td>
</tr>
<tr>
<td>Production</td>
<td>110 000</td>
</tr>
<tr>
<td>Export</td>
<td>2 348</td>
</tr>
<tr>
<td>Market</td>
<td>160 559</td>
</tr>
</tbody>
</table>

Figure 3.7-1: EU surimi products apparent market
European imports of surimi products remain stable despite overall market growth (Table 3.7-2 and Figure 3.7-2). This growth is underpinned by an increase in European production capacity.

EU imports come from the following countries:
- China, which is recovering from its pre-2002 drop in exports to the EU,
- Thailand, whose exports to the EU seem to be leveling off after continuous growth,
- the Republic of Korea, which is experiencing a huge decrease in sales, and
- new countries such as Malaysia and India, which have taken market shares and are still increasing their sales.

Imported surimi products are frozen, although in France the market is mainly focused on chilled products.

Table 3.7-2: EU surimi products imports by main countries of origin

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>China (PRC)</td>
<td>14 290</td>
<td>16 206</td>
<td>3 667</td>
<td>7 945</td>
<td>11 709</td>
<td>16 316</td>
</tr>
<tr>
<td>Thailand</td>
<td>11 393</td>
<td>12 134</td>
<td>14 702</td>
<td>16 280</td>
<td>18 508</td>
<td>16 137</td>
</tr>
<tr>
<td>South Korea</td>
<td>21 827</td>
<td>19 190</td>
<td>17 072</td>
<td>13 258</td>
<td>9 751</td>
<td>5 932</td>
</tr>
<tr>
<td>Malaysia</td>
<td>2 588</td>
<td>2 943</td>
<td>2 861</td>
<td>3 121</td>
<td>2 677</td>
<td>3 746</td>
</tr>
<tr>
<td>India</td>
<td>1 266</td>
<td>2 596</td>
<td>2 442</td>
<td>4 293</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2 809</td>
<td>1 751</td>
<td>2 567</td>
<td>3 285</td>
<td>2 588</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>52 907</td>
<td>52 224</td>
<td>42 135</td>
<td>46 485</td>
<td>47 675</td>
<td>48 043</td>
</tr>
</tbody>
</table>

EU-25: IMPORTS OF SURIMI-BASED PRODUCTS in metric tonnes
(Source: Eurostat)

Figure 3.7-2: EU surimi products imports by main countries of origin

Import prices of surimi products have significantly declined since 2000. Great price differences exist among the various countries of origin. India is the cheapest country of origin with an average annual price difference of €1/kg less than Malaysia (Table 3.7-3 and Figure 3.7-3).
India seems to have replaced China as the country of cheapest origin. This could explain its growing market share in the EU.

The main EU importing countries are France, Spain and Italy and, at a lower level, the United Kingdom. Belgium plays a role as a re-exporting country (Table 3.7-4 and Figure 3.7-4).

Table 3.7-4: surimi products main EU countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>11 723</td>
<td>3 388</td>
</tr>
<tr>
<td>Spain(*)</td>
<td>18 533</td>
<td>3 171</td>
</tr>
<tr>
<td>Italy (*)</td>
<td>13 013</td>
<td>947</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>9 674</td>
<td>76</td>
</tr>
<tr>
<td>Belgium</td>
<td>5 844</td>
<td>3 337</td>
</tr>
<tr>
<td>Netherlands</td>
<td>5 169</td>
<td>1 516</td>
</tr>
<tr>
<td>Portugal</td>
<td>2 813</td>
<td>260</td>
</tr>
<tr>
<td>Germany</td>
<td>1 949</td>
<td>485</td>
</tr>
<tr>
<td>Lithuania</td>
<td>550</td>
<td>23 100</td>
</tr>
</tbody>
</table>

(* No imports from Lithuania are reported in Italian and Spanish import statistics. Data here are extracted from Lithuanian export statistics.)
The EU export of surimi products is quite low. The main exporting country is Lithuania whose company Viciunai Group is active in Eastern European countries and in former Soviet Union countries (Table 3.7-5 and Figure 3.7-5).

Table 3.7-5: EU surimi products export

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia Federation</td>
<td>688</td>
<td>262</td>
<td>54</td>
<td>186</td>
<td>1 722</td>
<td>2 641</td>
</tr>
<tr>
<td>Ukraine</td>
<td>1 125</td>
<td>3 208</td>
<td>4 590</td>
<td>3 821</td>
<td>2 667</td>
<td>698</td>
</tr>
<tr>
<td>USA</td>
<td></td>
<td>1 402</td>
<td>4 590</td>
<td>3 821</td>
<td>2 667</td>
<td>698</td>
</tr>
<tr>
<td>Others</td>
<td>535</td>
<td>1 157</td>
<td>1 714</td>
<td>1 376</td>
<td>1 540</td>
<td>1 649</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2 348</td>
<td>4 627</td>
<td>7 760</td>
<td>7 985</td>
<td>6 699</td>
<td>4 988</td>
</tr>
</tbody>
</table>

Figure 3.7-5: EU surimi products export
3.8. **France**

### 3.8.1. National production

In France, part of production is based on the 10 000 metric tonnes of surimi raw material from the country’s own producers. The rest comes from the processing of 18 600 metric tonnes, imported mainly from the United States of America and Chile.

In 2005, French production increased more than 8 percent to reach 42 200 metric tonnes (Table 3.8-1 and Figure 3.8-1). It is characterized mostly by chilled products and value-added products. Not surprisingly, the most important part of the production is imitation crabmeat sticks.

<table>
<thead>
<tr>
<th>Table 3.8-1: French surimi products apparent market</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRANCE: SURIMI-BASED PRODUCTS APPARENT MARKET in metric tonnes</strong></td>
</tr>
<tr>
<td><strong>(Sources: ADEPALE and French customs)</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Import</td>
</tr>
<tr>
<td>Production</td>
</tr>
<tr>
<td>Export</td>
</tr>
<tr>
<td>Market</td>
</tr>
</tbody>
</table>

In spite of the increase in imports, domestic production still is the main supplier of the French surimi products market. French producers are fighting imports of low-priced products through important improvements in both productivity and recipes, including the use of lower quality surimi raw material.

### 3.8.2. Surimi products trade

- Imports  (Table 3.8-2 and Figure 3.8-2)

2005 marks the year of another big increase in imports (+25 percent) into the EU, confirming the trend (+21 percent) in 2004.

The main supplier to France continues to be Lithuania with imports of low-priced products.

In 2005, imports from China reached the important pre-2002 level (+21 percent). A part of these imports is apparently re-exported to Spain.
Exports (Table 3.8-3 and Figure 3.8-3)

Exports of French surimi products represent only 8 percent of the country’s production.

For many years, Spain, which besides Germany is the other significant European market for surimi products, has been the main destination for French surimi products. Germany, Italy and Belgium are the other three most important destinations.

Table 3.8-3: France surimi products export

<table>
<thead>
<tr>
<th>Country</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>776</td>
<td>1 277</td>
<td>937</td>
<td>631</td>
<td>2 043</td>
</tr>
<tr>
<td>Germany</td>
<td>-</td>
<td>37</td>
<td>58</td>
<td>76</td>
<td>624</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>141</td>
<td>-</td>
<td>26</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Belgium</td>
<td>-</td>
<td>49</td>
<td>-</td>
<td>-</td>
<td>369</td>
</tr>
<tr>
<td>Italy</td>
<td>18</td>
<td>-</td>
<td>45</td>
<td>215</td>
<td>124</td>
</tr>
<tr>
<td>Other</td>
<td>48</td>
<td>245</td>
<td>274</td>
<td>262</td>
<td>237</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>983</strong></td>
<td><strong>1 608</strong></td>
<td><strong>1 340</strong></td>
<td><strong>1 184</strong></td>
<td><strong>3 397</strong></td>
</tr>
</tbody>
</table>

**FRANCE: EXPORTS OF SURIMI-BASED PRODUCTS in metric tonnes**

*(Sources: OFIMER and French customs)*
3.8.3. **Consumption trends**

- **General figures**

French market size continues to grow steadily by 7–8 percent each year. French market value of surimi products is estimated at €225 million per year.

With over 30 percent of total sales at retail level, the surimi products that dominate sales by volume are the chilled seafood, elaborated products (including smoked, dried and salted products).

In 2005, low prices and hard discounts stopped the previous, continuous rise of the value of surimi products.

In addition to plain surimi-based products such as sticks, greater quantities of surimi-based pieces are being used in sandwiches and salads, and are called for in recipes. This kind of product consumption is not evaluated.

- **Consumption and consumer preferences**

Sixty-two percent of households are surimi product buyers (57 percent in 2004).

A ninety-five percent share of the French market is held by chilled products. Frozen products have only a marginal share of the market (Table 3.8-4 and Figure 3.8-4).

Eighty percent of sales are imitation crabmeat sticks available in various qualities (proportion of fish, proportion of real crab meat) and sizes (standard and mini), with sauce for snacking (Table 3.8-5 and Figure 3.8-5).

Many different forms of a surimi product exist on the French market, such as rolls, ham style with sauce, packaged to be warmed up, with cheese. Only sticks and snack packs have increased their sales in 2005.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chilled</td>
<td>63%</td>
<td>72%</td>
<td>81%</td>
<td>85%</td>
<td>94%</td>
<td>95%</td>
</tr>
<tr>
<td>Frozen</td>
<td>37%</td>
<td>28%</td>
<td>19%</td>
<td>15%</td>
<td>6%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Table 3.8-4: Market share of chilled surimi products
Figure 3.8-4: Market share of chilled surimi products

<table>
<thead>
<tr>
<th>Year</th>
<th>Frozen</th>
<th>Chilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td>90%</td>
</tr>
<tr>
<td>1998</td>
<td></td>
<td>80%</td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td>70%</td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td>60%</td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td>50%</td>
</tr>
</tbody>
</table>

Table 3.8-5: Market share of different surimi products presentation

<table>
<thead>
<tr>
<th>Product</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surimi, grated or crumbs</td>
<td>7%</td>
</tr>
<tr>
<td>Surimi sticks</td>
<td>80%</td>
</tr>
<tr>
<td>Surimi slices</td>
<td>2%</td>
</tr>
<tr>
<td>Surimi other</td>
<td>11%</td>
</tr>
</tbody>
</table>

(Source: ADISUR)

Figure 3.8-5: Market share of different surimi products presentation

<table>
<thead>
<tr>
<th>Product</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surimi, grated or crumbs</td>
<td>7%</td>
</tr>
<tr>
<td>Surimi sticks</td>
<td>80%</td>
</tr>
<tr>
<td>Surimi slices</td>
<td>2%</td>
</tr>
<tr>
<td>Surimi other</td>
<td>11%</td>
</tr>
</tbody>
</table>

(Source: OFIMER–Nielsen)
• Distribution channels

Modern retailers (supermarkets and hypermarkets) are channels for more than 90 percent of surimi products, of which 10 percent goes to hard discounters.

Shops offer 15–29 different products on average, depending on the shop size (Table 3.8-6).

Table 3.8-6: example of an assortment of surimi products in a French supermarket

<table>
<thead>
<tr>
<th>EXAMPLE OF ASSORTMENT OF SURIMI PRODUCTS IN FRENCH SUPERMARKET</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product</strong></td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td><strong>Chilled seafood elaborated products</strong></td>
</tr>
<tr>
<td>Shredded surimi</td>
</tr>
<tr>
<td>Shredded surimi</td>
</tr>
<tr>
<td>Slices 'ham type'</td>
</tr>
<tr>
<td>Small sticks + sauce</td>
</tr>
<tr>
<td>Small sticks + sauce</td>
</tr>
<tr>
<td>Sticks/12 pieces</td>
</tr>
<tr>
<td>Sticks/28 pieces</td>
</tr>
<tr>
<td>High-quality sticks/18 pieces</td>
</tr>
<tr>
<td>Sticks/12 pieces</td>
</tr>
<tr>
<td>Sticks/30 pieces</td>
</tr>
<tr>
<td>Sticks/28 pieces</td>
</tr>
<tr>
<td><strong>Frozen products</strong></td>
</tr>
<tr>
<td>Sticks</td>
</tr>
</tbody>
</table>

The share of retailers’ own brands grew enormously in the last few years, to reach about 50 percent of total sales in 2005.

As for other food products, prices are quite different between hyper- and supermarkets and hard discounters (Table 3.8-7 and Figure 3.8-7).

Surimi products also have a presence in the catering business, with 11 percent of the seafood-elaborated products sold in the restaurant trade.

Table 3.8-7: Market share of different surimi products prices

| FRANCE: MARKET SHARE OF SURIMI PRODUCTS BY PRICE IN 2005 (Source: OFIMER – TNS) |
|-------------------------------------|-------------------------------|---------------------|
| **Price** | **Hyper+Super** | **Hard discount** |
| > €6/kg | 54.3% | 14.0% |
| €5–6/kg | 9.1% | 27.0% |
| €4–5/kg | 8.1% | 57.3% |
| < €4/kg | 28.5% | 1.7% |
3.8.4. Main actors

- Cuisimer and Protimer are subsidiaries of Soparind (Bongrain Group). Cuisimer’s brand Coraya is the leader on the French market. Cuisimer exports heavily to Germany, Italy, Spain, Switzerland and Austria. Protimer, with a €5.5 million turnover and 60 employees, specializes in catering and ‘Business to Business’ (B to B) for producers of salads, sandwiches and ready-cooked dishes. Exports to various European countries represent half of the turnover of the B to B activity.

- Fleury Michon, number two producer on the French market, is not specialized in seafood. Total company turnover is €424 million and there are 3 400 employees. Fleury Michon Traiteur produces 38 000 metric tonnes (of which 45 percent is seafood), which represents 60 percent of the total business of Fleury Michon. Surimi sales represent 16 percent of its total sales and amount to €68 million.

- Compagnie des Pêches de Saint-Malo (ex-Comapêche) produces its own surimi from northern blue whiting fished and processed onboard its factory vessel *Joseph Roty 2*. Its subsidiary Comaboko produces 8 000 metric tonnes of surimi products under its own brand Compagnie des Pêches de Saint-Malo and for retailers’ brands. Comaboko surimi sticks obtained the organic label ‘AB Agriculture Biologique’ and contain 73 percent of organic ingredients.

- Meralliance Group, which owns the Narvik surimi products line, has decided to stop production.

- Charles Amand produces miscellaneous seafood products (salads, terrines) and surimi products under its brand Ocilia. It collaborates with the Italian company Fideco on the production of its surimi.

- Capitaine Cook, a subsidiary of the French retail chain Intermarche, diversified into chilled seafood products and began surimi stick production in 2004, exclusively for the Intermarche brands.
3.8.5.  Current and future developments

The dominating position of imitation crab sticks and their never-ending growth is phenomenal, despite serious attempts by French producers to launch new products or new recipes.

The heavy pressure that overall low prices, hard discounters and Lithuanian competition exert on prices forced French producers to adapt their recipes and to improve their industrial and commercial performance.

As for every producer and consumer country, the big question for France is “What will be the future world availability of surimi raw material and its price?”

3.9.  Spain

3.9.1.  National production

Spain’s production of surimi-based products is estimated at 20 400 metric tonnes, which amounts to more than 60 percent of the domestic market (Table 3.9-1 and Figure 3.9-1).

Table 3.9-1: Spain surimi products apparent market

<table>
<thead>
<tr>
<th>SPAIN: APPARENT MARKET OF SURIMI-BASED PRODUCTS in metric tonnes (Sources: Eurostat and production estimates)</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import</td>
<td>21 092</td>
<td>21 335</td>
<td>16 979</td>
<td>16 867</td>
<td>15 501</td>
<td>15 981</td>
</tr>
<tr>
<td>Production (*)</td>
<td>8 100</td>
<td>13 000</td>
<td>18 300</td>
<td>23 500</td>
<td>24 900</td>
<td>20 400</td>
</tr>
<tr>
<td>Export</td>
<td>2 409</td>
<td>2 895</td>
<td>3 368</td>
<td>3 516</td>
<td>3 174</td>
<td>3 171</td>
</tr>
<tr>
<td>Market</td>
<td>26 783</td>
<td>31 440</td>
<td>31 911</td>
<td>36 851</td>
<td>37 227</td>
<td>33 210</td>
</tr>
</tbody>
</table>

(* Estimate based on surimi imports with average 37 percent surimi content in surimi-based products.)

Figure 3.9-1: Spain surimi products apparent market

The most important part of the production is imitation crab meat sticks. Spain also has an original surimi-based product, imitation glass eel, which resembles the traditional Spanish delicacy.
Production uses 8,000–9,000 metric tonnes of surimi raw material, of which 50 percent is imported from the United States of America.

The surimi import statistics show that after having tested surimi from various countries, Spanish producers selected the United States of America, France, Argentina and Chile as their main suppliers (Table 3.9-2 and Figure 3.9-2).

Table 3.9-2: Spain surimi imports

<table>
<thead>
<tr>
<th>SPAIN: SURIMI IMPORTS BY MAIN COUNTRIES</th>
<th>Volumes in metric tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Source: Eurostat</td>
</tr>
<tr>
<td>Country</td>
<td>2000</td>
</tr>
<tr>
<td>USA</td>
<td>1,999</td>
</tr>
<tr>
<td>France</td>
<td>254</td>
</tr>
<tr>
<td>Argentina</td>
<td>128</td>
</tr>
<tr>
<td>Belgium (*)</td>
<td>224</td>
</tr>
<tr>
<td>Chile</td>
<td>75</td>
</tr>
<tr>
<td>Canada</td>
<td>447</td>
</tr>
<tr>
<td>Thailand</td>
<td>36</td>
</tr>
<tr>
<td>Netherlands (*)</td>
<td>52</td>
</tr>
<tr>
<td>India</td>
<td>24</td>
</tr>
<tr>
<td>Germany</td>
<td></td>
</tr>
<tr>
<td>Russian Federation</td>
<td>320</td>
</tr>
<tr>
<td>Others</td>
<td>113</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3,001</td>
</tr>
</tbody>
</table>

(* Mainly re-exports from the USA and the Faeroe Islands.)

Figure 3.9-2: Spain surimi imports

(* Mainly re-exports from the USA and the Faeroe Islands.)
3.9.2. **Surimi products trade**

- **Imports**  (Table 3.9-3 and Figure 3.9-3)

During the years 2000–2004, Spanish imports of surimi-based products decreased, but they have now apparently stabilized at 18 000–19 000 metric tonnes per year.

For the most part, imports consist of frozen products from Asian countries such as China, Thailand, the Republic of Korea and more recently India, which offeres products at a lower price. Spanish imports account for 28 percent of all EU-25 imports of surimi products.

So far, China has not succeeded in recovering its market share in Spain after the 2002 ban on its imports.

Imports from the Republic of Korea have declined steadily in Spain as well as in every other European country. Market share of Lithuanian products in Spanish is growing rapidly, either through direct imports or through imports coming indirectly via Belgium.

<table>
<thead>
<tr>
<th>Table 3.9-3: Spain surimi products import</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPAIN: IMPORTS OF SURIMI-BASED PRODUCTS in metric tonnes</strong></td>
</tr>
<tr>
<td>(Source: Eurostat)</td>
</tr>
<tr>
<td><strong>Country</strong></td>
</tr>
<tr>
<td>China (PRC)</td>
</tr>
<tr>
<td>Thailand</td>
</tr>
<tr>
<td>South Korea</td>
</tr>
<tr>
<td>India</td>
</tr>
<tr>
<td>Lithuania (*)</td>
</tr>
<tr>
<td>France</td>
</tr>
<tr>
<td>Belgium</td>
</tr>
<tr>
<td>Peru</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td><strong>TOTAL (*)</strong></td>
</tr>
</tbody>
</table>

(* No imports from Lithuania are reported in Spanish import statistics. Data are extracted from Lithuanian export statistics.)

<table>
<thead>
<tr>
<th>Figure 3.9-3: Spain surimi products import</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPAIN: IMPORTS OF SURIMI-BASED PRODUCTS in metric tonnes</strong></td>
</tr>
<tr>
<td>(Source: Eurostat)</td>
</tr>
</tbody>
</table>

(* No imports from Lithuania are reported in Spanish import statistics. Data are extracted from Lithuanian export statistics.)
• Exports (Table 3.9-4 and Figure 3.9-4)

Spain is exporting more and more surimi products to Portugal (2,000 metric tonnes in 2005).

It is worth noting that some French retailers have contracts with Spanish producers for their own brand products.

Table 3.9-4: Spain surimi products export

<table>
<thead>
<tr>
<th>Country</th>
<th>2 000</th>
<th>2 001</th>
<th>2 002</th>
<th>2 003</th>
<th>2 004</th>
<th>2 005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portugal</td>
<td>1,313</td>
<td>1,495</td>
<td>1,577</td>
<td>1,601</td>
<td>1,755</td>
<td>1,972</td>
</tr>
<tr>
<td>Belgium</td>
<td>638</td>
<td>985</td>
<td>1,225</td>
<td>1,080</td>
<td>548</td>
<td>414</td>
</tr>
<tr>
<td>Italy</td>
<td>143</td>
<td>97</td>
<td>164</td>
<td>168</td>
<td>257</td>
<td>157</td>
</tr>
<tr>
<td>France</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>120</td>
<td>149</td>
</tr>
<tr>
<td>Other</td>
<td>315</td>
<td>318</td>
<td>282</td>
<td>518</td>
<td>423</td>
<td>486</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,409</td>
<td>2,895</td>
<td>3,368</td>
<td>3,516</td>
<td>3,174</td>
<td>3,171</td>
</tr>
</tbody>
</table>

(Source: Eurostat)

Figure 3.9-4: Spain surimi products export

3.9.3. Consumption trends

• General trends

Currently, a large portion of the Spanish surimi products market (around 90 percent) still is frozen products. However, recent studies on seafood consumption in Spain point to growth in fresh-product purchases.

As usual, the most important product is imitation crab meat sticks, but surimi also comes in other forms such as chunks, breaded crab claws, shrimp tails, lobster tails and glass eels.

• Distribution channels

According to estimates of the Centre français du commerce extérieur (CFCE), a split occurred in 2001 among the following commercial distribution channels for surimi products:

• modern retailers distribute 42 percent,
• catering distributes 37 percent,
• freezer centers and home service distribute 15 percent, and
• industrial suppliers distribute 5 percent.
Once again, the most important form of surimi product is imitation crabmeat sticks.

- **Consumption facts**

In 2005, a study by the *Fondo de Regulación y Organización del Mercado de los Productos de la Pesca y Cultivos* (FROM) reported that 72 percent of Spanish households used surimi products (Table 3.9-5).

<table>
<thead>
<tr>
<th>Consumption frequency</th>
<th>Purchasing households %</th>
<th>Commercial restaurant consumption %</th>
<th>Canteen and refectory consumption %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>2</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>2–3 times/week</td>
<td>12</td>
<td>21</td>
<td>7</td>
</tr>
<tr>
<td>1 time/week</td>
<td>22</td>
<td>8</td>
<td>22</td>
</tr>
<tr>
<td>1 time/2–3 weeks</td>
<td>16</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>1 time/month</td>
<td>9</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>1 time/2–3 months</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A few times or not at all/year</td>
<td>28</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.9.4. **Main actors**

**Producers**

- The Multi-Prosur plant was established in 1999 by a consortium of four companies: Compesca and Sodercan (Spain), Hottlet (Belgium) and Wong Joon (Republic of Korea). Its production capacity is 10 000 metric tonnes per year. Marketed brands are Compesca and various retailer brands.
- Angulas Aguinada began to process surimi into imitation glass eel during the 1980s. Annual production of imitation glass eel (Gula del Norte) is 2 500 metric tonnes. A partnership with Comapeche allows Angulas Aguinada to also sell traditional surimi products (sticks) under the Krissia brand.
- Pescanova, leader in the frozen seafood segment, produces 1 500–2 000 metric tonnes of surimi products per year. Additionally, they import some specific products from the Republic of Korea (Daerim Corporation) and Lithuania (Viciunai Group).
- Gedesco produces 1 500 metric tonnes of sticks, which are marketed under its two brands Maheso and Prevema and also under retailer brands.
- Angulas Mayoz, El Angulero de Aguinaga and Nakulas are smaller producers which specialize in imitation glass eel surimi.

**Importers/brokers**

- Interaliment, the most important importer, used to work mainly with China until 2002, when Chinese products were banned. Since then it has switched to a partnership with Unilever in India. Furthermore, it is a company policy to hold shares in some surimi plants from which it sources. The company mainly specializes in the catering business with brands such as Aligator and Grand Bleu.
- Krustagroup is focused on Thai products. It supplies the catering industry and retailers. Its brands are Krustasur and Costaur.
• Grupo Ibérica de Congelados works mainly with products from the Republic of Korea. Its brands are Nos and Iberconsa.

3.9.5. Current and future developments

During the last 5 years, the Spanish surimi industry broadened and diversified its raw material supply. Even if the United States of America continues to be the main source, new suppliers such as Argentina, Chile, Thailand, India and the Faeroe Islands allow the Spanish industry to develop its production.

Sources for imports of finished surimi products also tended to diversify. Products traditionally from China, Thailand and the Republic of Korea were substituted with products from India and Lithuania. Because of their logistical proximity, Lithuania producers give Spanish actors a great deal of flexibility in comparison with Asian producers.

It seems that the current preference for frozen surimi products on the Spanish market will continue to be the preference for some years to come, although the general trend in food preferences seems to be towards fresh or chilled products.

As in every country, surimi products development will depend on surimi raw material availability.

3.10. Lithuania

3.10.1. National production

In the last five years, the European landscape of surimi products changed dramatically because of the explosive growth of Lithuanian production. Thanks to the Viciunai Group, Lithuania’s production, which began almost from scratch in 2000, should reach around 35 000 metric tonnes in 2006 (estimate based on surimi imports and considering a 37 percent average rate of surimi content in final products). In 2006 Viciunai Group announced a total production of 65 000 metric tonnes from all of its plants, including the Estonian and Russian plants.

Surimi raw material for production comes mainly from the United States of America (over 50 percent, taking into account the Netherland’s re-exports). This is true on average for EU-25 imports. Twenty-one percent of surimi raw material is from France, the second supplier. This is a recent development, most probably because of the increased capacity of the vessel of the Compagnie des Peches de Saint-Malo (ex Comapeche). The third main supplier is Chile, which provides 10 percent of the raw material requirements (Table 3.10-1 and Figure 3.10-1).

Table 3.10-1: Lithuania surimi imports

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>1 247</td>
<td>3 803</td>
<td>5 217</td>
<td>5 173</td>
<td>4 781</td>
<td>6 043</td>
</tr>
<tr>
<td>France</td>
<td>123</td>
<td>320</td>
<td>320</td>
<td>23</td>
<td>2 823</td>
<td></td>
</tr>
<tr>
<td>Chile</td>
<td>113</td>
<td>803</td>
<td>590</td>
<td>1 235</td>
<td>762</td>
<td>1 358</td>
</tr>
<tr>
<td>Estonia (*)</td>
<td></td>
<td></td>
<td>2 816</td>
<td>819</td>
<td>734</td>
<td></td>
</tr>
<tr>
<td>Faeroe Islands</td>
<td>288</td>
<td>566</td>
<td></td>
<td>44</td>
<td>24</td>
<td>712</td>
</tr>
<tr>
<td>Argentina</td>
<td></td>
<td></td>
<td>25</td>
<td>500</td>
<td>453</td>
<td>197</td>
</tr>
<tr>
<td>Thailand</td>
<td>34</td>
<td>216</td>
<td>690</td>
<td>580</td>
<td>150</td>
<td>187</td>
</tr>
<tr>
<td>Netherlands(****)</td>
<td></td>
<td></td>
<td></td>
<td>55</td>
<td>72</td>
<td>1 093</td>
</tr>
<tr>
<td>India</td>
<td>1 337</td>
<td>609</td>
<td>652</td>
<td>125</td>
<td></td>
<td>75</td>
</tr>
<tr>
<td>Others</td>
<td>337</td>
<td>370</td>
<td>225</td>
<td>79</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>3 356</td>
<td>6 490</td>
<td>7 719</td>
<td>10 552</td>
<td>7 108</td>
<td>13 241</td>
</tr>
</tbody>
</table>

(* Mainly re-export from the USA and Thailand.) (** Mainly re-export from the USA and the Faeroe Islands.)
3.10.2. Surimi products trade

It is a well-known fact that most of Lithuanian production is exported to Europe. According to EU statistics, Lithuanian exports of surimi products are estimated to be a mere 23 000 metric tonnes, which is only 65 percent of total production. It is suspected that reported Eurostat figures on Lithuanian exports are lower than they actually are.

Main destination countries for Lithuanian exports are France (30 percent), Italy (12 percent), the Russian Federation (11 percent) and Spain (11 percent) (Table 3.10-2 and Figure 3.10-2).

Table 3.10-2: Lithuania surimi products exports

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>60</td>
<td>1 348</td>
<td>2 614</td>
<td>4 890</td>
<td>6 184</td>
<td>7 127</td>
</tr>
<tr>
<td>Italy</td>
<td>229</td>
<td>1 128</td>
<td>1 624</td>
<td>2 281</td>
<td>2 867</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>190</td>
<td>2 708</td>
<td>2 491</td>
<td>2 266</td>
<td>2 552</td>
<td></td>
</tr>
<tr>
<td>Russian Federation</td>
<td>505</td>
<td>159</td>
<td>134</td>
<td>1 658</td>
<td>2 589</td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td>324</td>
<td>496</td>
<td>544</td>
<td>504</td>
<td>1 630</td>
<td></td>
</tr>
<tr>
<td>Latvia</td>
<td>427</td>
<td>732</td>
<td>896</td>
<td>457</td>
<td>428</td>
<td>1 210</td>
</tr>
<tr>
<td>Belgium</td>
<td>36</td>
<td>148</td>
<td>497</td>
<td>842</td>
<td>1 091</td>
<td>1 533</td>
</tr>
<tr>
<td>Ukraine</td>
<td>1 094</td>
<td>3 207</td>
<td>4 231</td>
<td>3 595</td>
<td>1 696</td>
<td>679</td>
</tr>
<tr>
<td>Portugal</td>
<td>53</td>
<td>528</td>
<td>676</td>
<td>954</td>
<td>627</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>161</td>
<td>502</td>
<td>1 770</td>
<td>1 305</td>
<td>1 863</td>
<td>2 287</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2 283</td>
<td>6 892</td>
<td>14 868</td>
<td>16 558</td>
<td>18 925</td>
<td>23 101</td>
</tr>
</tbody>
</table>

(* Mainly re-export from the USA and Thailand.) (** Mainly re-export from the USA and the Faeroe Islands.)
Other important markets for Lithuania are Eastern European countries and the former Soviet Union members, including Czech Republic, Slovakia, Bulgaria, the Russian Federation, as already mentioned, Belarus and Ukraine.

Lithuanian export price variability is reflected in the great price difference between countries: while Western countries pay more than €2/kg to import surimi products from Lithuania, Eastern countries pay rates below €1.50/kg (Table 3.10-3 and Figure 3.10-3).

Table 3.10-3: Lithuania surimi products export prices

<table>
<thead>
<tr>
<th>LITHUANIA: EXPORT PRICES OF SURIMI-PRODUCTS IN 2005 in €/kg (Source: Eurostat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
</tr>
<tr>
<td>--------------------------------</td>
</tr>
<tr>
<td>Croatia</td>
</tr>
<tr>
<td>United Kingdom</td>
</tr>
<tr>
<td>Belgium</td>
</tr>
<tr>
<td>France</td>
</tr>
<tr>
<td>Italy</td>
</tr>
<tr>
<td>Spain</td>
</tr>
<tr>
<td>Estonia</td>
</tr>
<tr>
<td>Portugal</td>
</tr>
<tr>
<td>Russian Federation</td>
</tr>
<tr>
<td>Latvia</td>
</tr>
<tr>
<td>Bulgaria</td>
</tr>
<tr>
<td>Belarus</td>
</tr>
<tr>
<td>Ukraine</td>
</tr>
<tr>
<td>Czech Republic</td>
</tr>
<tr>
<td><strong>Average</strong></td>
</tr>
</tbody>
</table>
3.10.3. **Main actors**

Viciunai Group started in 1992 as a trade and distribution business for food products. Presently, the Group’s activities are more diversified and deal with seafood, vegetables, bakery goods, fast-food and international transport.

As reported by the company, the seafood business operations are conducted at the following three locations:

- Plunges, Lithuania: an industrial complex of three plants with a 40 000 metric tonnes annual capacity for production of seafood products (of which 34 000 metric tonnes are for surimi products only) and 1 500 employees;
- Tallinn, Estonia: the Paljassaare Kalatööstus plant with its 460 employees produces surimi products, frozen fish products and frozen, breaded vegetable products; and
- Sovetsk, in the Kaliningrad region of the Russia Federation: a plant with a 15 000 metric tonnes annual capacity for production of surimi products, breaded surimi products and breaded fish products.

With these five factories, Viciunai Group seems to have a total production capacity of 65 000 metric tonnes of surimi products. The precise share of the total 65 000 metric tonnes produced by the plants located in the EU (Lithuania and Estonia) is not known. The product portfolio includes imitation crabmeat sticks, chunks, sausages, breaded surimi, moulded surimi (crab claws, shrimp tails), all products that are chilled or frozen.

Twenty-five percent of the output is marketed under the company’s own brands (Vici and Esva) and 75 percent is marketed under its customers’ own labels.

Viciunai Group established a number of sales offices to improve commercial performance. These sales offices are located in Belgium, Lithuania, Estonia, Latvia, Poland, the Russian Federation (two), Ukraine and the Czech Republic. The sales organization, with its logistic skills and own transport, gives Viciunai Group a real advantage in conducting business with European countries.

Viciunai Group also works with importers of each destination country.

The seafood company Norvelita, another Lithuanian company, plans to target Western European surimi markets with an announced production capacity of 4 metric tonnes of surimi per day.
3.10.4. Current and future developments

Viciunai Group is now by far the biggest European surimi company. It took over Makrill, an Estonian competitor specialized in surimi products, in 2005. This move has left it without any serious competition in the eastern part of the European market.

Viciunai Group developed real skills on both industrial and commercial issues, tackling the market with lower prices, diversifying its product line with value-added products, and building a commercial organization. But whatever the challenging options ahead – be they high or low quality, chilled or frozen, simple sticks or breaded claws – the company will have to face the same question as its competitors: “What will be raw material availability in the future?” In the case of raw material shortage, big industrial size may not necessarily prove an advantage.

3.11. Italy

3.11.1. National production

Italian production is based on around 1 500 metric tonnes of surimi imported mainly from Thailand, the United States of America and Chile.

Production of surimi-based products is estimated at approximately 4 000 metric tonnes (based on surimi import figures and assuming a 37 percent average surimi content in final products)(Table 3.11-1 and Figure 3.11-1).

Table 3.11-1: Italy surimi products apparent market

<table>
<thead>
<tr>
<th>ITALY: APPARENT MARKET OF SURIMI PRODUCTS in metric tonnes</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import</td>
<td>7 182</td>
<td>7 984</td>
<td>7 871</td>
<td>9 293</td>
<td>10 875</td>
<td>13 013</td>
</tr>
<tr>
<td>Production (*)</td>
<td>3 200</td>
<td>3 400</td>
<td>3 900</td>
<td>4 100</td>
<td>3 700</td>
<td>3 900</td>
</tr>
<tr>
<td>Export</td>
<td>1 110</td>
<td>991</td>
<td>1 351</td>
<td>1 181</td>
<td>1 015</td>
<td>948</td>
</tr>
<tr>
<td>Market</td>
<td>9 272</td>
<td>10 393</td>
<td>10 420</td>
<td>12 212</td>
<td>13 560</td>
<td>15 965</td>
</tr>
</tbody>
</table>

(* Estimate based on surimi imports with average 37 percent surimi content in surimi-based products.)

Figure 3.11-1: Italy surimi products apparent market

(* Estimate based on surimi imports with average 37 percent surimi content in surimi-based products.)
### 3.11.2. Surimi products trade

Most of the Italian market for surimi products is supplied by imports, which amounted to 13 013 metric tonnes in 2005 (Table 3.11-2 and Figure 3.11-2).

Although statistics are slightly uncertain, Lithuania seems to have become Italy’s number one supplier. Asian countries are important suppliers as well, providing about 55 percent of total imports. The supplies to Italy follow these trends:
- increasing supplies once again from China as it makes a comeback,
- decreasing supplies from the Republic of Korea,
- increasing supplies from Thailand, and
- increasing supplies from Malaysia.

#### Table 3.11-2: Italy surimi products import

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithuania (*)</td>
<td>229</td>
<td>1 128</td>
<td>1 624</td>
<td>2 281</td>
<td>2 867</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>1 208</td>
<td>1 635</td>
<td>293</td>
<td>528</td>
<td>1 046</td>
<td>2 402</td>
</tr>
<tr>
<td>Thailand</td>
<td>484</td>
<td>717</td>
<td>841</td>
<td>1 288</td>
<td>1 384</td>
<td>1 811</td>
</tr>
<tr>
<td>Belgium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>828</td>
</tr>
<tr>
<td>South Korea</td>
<td>4 075</td>
<td>3 970</td>
<td>3 955</td>
<td>3 743</td>
<td>3 126</td>
<td>1 743</td>
</tr>
<tr>
<td>Malaysia</td>
<td>579</td>
<td>585</td>
<td>590</td>
<td>825</td>
<td>883</td>
<td>1 295</td>
</tr>
<tr>
<td>Other</td>
<td>836</td>
<td>848</td>
<td>1 064</td>
<td>1 285</td>
<td>1 327</td>
<td>1 058</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>7 182</strong></td>
<td><strong>7 984</strong></td>
<td><strong>7 871</strong></td>
<td><strong>9 293</strong></td>
<td><strong>10 875</strong></td>
<td><strong>13 013</strong></td>
</tr>
</tbody>
</table>

(* Imports from Lithuania are extracted from Lithuanian export statistics.)

#### Figure 3.11-2: Italy surimi products import

(* Imports from Lithuania are extracted from Lithuanian export statistics.*)
Italian exports are limited and mainly focus on the French market (partnership between Fideco and Charles Amand) (Table 3.11-3 and Figure 3.11-3).

Table 3.11-3: Italy surimi products export

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>829</td>
<td>763</td>
<td>1 003</td>
<td>880</td>
<td>771</td>
<td>712</td>
</tr>
<tr>
<td>Belgium</td>
<td>90</td>
<td>85</td>
<td>174</td>
<td>191</td>
<td>105</td>
<td>27</td>
</tr>
<tr>
<td>Germany</td>
<td>56</td>
<td>44</td>
<td>51</td>
<td>53</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>135</td>
<td>143</td>
<td>130</td>
<td>59</td>
<td>86</td>
<td>151</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1 110</td>
<td>991</td>
<td>1 351</td>
<td>1 181</td>
<td>1 015</td>
<td>948</td>
</tr>
</tbody>
</table>

(Source: Eurostat)

3.11.3. Consumption trends

In Italy, the main market for surimi products is catering, for which they are mostly marketed frozen (primarily moulded and breaded crab claws, followed by sticks) and used as ingredients in salads and antipastos and cooked in the ‘marinara’ way.

Fresh products are limited to imitation crabmeat sticks that are supplied under the French brands Coraya by Cuisimer and Ocilia by Charles Amand (the Ocilia brand is produced by Fideco in Italy).

3.11.4. Main actors

There are two producers and three plants that produce surimi products:
- Fideco SpA, formerly linked with Cuisimer, has now secured a strong partnership with the French firm Charles Amand to produce chilled and frozen sticks and roll products destined for the French market under the Ocilia brand; and
- Vis Industrie Alimentare SpA operates two plants and produces frozen sticks for several brands such as Delygel, Ondazzurra, Pinguino and Genepesca.

As regards imports, the three main agents for frozen surimi products in Italy are:
- Daerim Corporation, which imports products from the Republic of Korea and China,
- Supernova, which represents Viciunai Group, and
- Jais, which imports products from Thailand.
3.11.5. Current and future developments

Italy’s market for surimi-based products has grown steadily for the past many years, with the major volumes being imported. The Italian market may well have further growth potential, given the small amount of fresh surimi currently appearing in retail stores and the general attraction that seafood exerts on Italian consumers (as well as Spanish and French consumers).

3.12. United Kingdom

3.12.1. National production

Surimi imports into the United Kingdom are limited (233 metric tonnes in 2005) and no production of surimi-based products is reported for this country. The market relies wholly on imported surimi products.

3.12.2. Surimi products trade

Thailand is by far the most important country of origin for surimi products on the British market, accounting for 65 percent of total imports. Malaysia ranks second. The Republic of Korea’s share of imports to the United Kingdom has been decreasing, as it has to other European countries, and China’s share is resuming its pre-2002 high level.

Eurostat figures for 2005 report 142 metric tonnes of imports from Belgium, which are likely re-exported from Lithuania, another sign of Viciunai Group’s commercial expansion (Table 3.12-1 and Figure 3.12-1).

Table 3.12-1: UK surimi products import

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thailand</td>
<td>2 910</td>
<td>2 988</td>
<td>4 853</td>
<td>5 952</td>
<td>8 069</td>
<td>6 351</td>
</tr>
<tr>
<td>Malaysia</td>
<td>518</td>
<td>1 328</td>
<td>1 353</td>
<td>1 009</td>
<td>643</td>
<td>1 678</td>
</tr>
<tr>
<td>India</td>
<td></td>
<td>215</td>
<td>471</td>
<td>572</td>
<td>703</td>
<td></td>
</tr>
<tr>
<td>China (PRC)</td>
<td>402</td>
<td>1 059</td>
<td>279</td>
<td>143</td>
<td>155</td>
<td>557</td>
</tr>
<tr>
<td>South Korea</td>
<td>3 893</td>
<td>3 071</td>
<td>882</td>
<td>349</td>
<td>289</td>
<td>76</td>
</tr>
<tr>
<td>Estonia</td>
<td>46</td>
<td>480</td>
<td></td>
<td>78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>577</td>
<td>516</td>
<td>573</td>
<td>469</td>
<td>371</td>
<td>309</td>
</tr>
<tr>
<td>TOTAL</td>
<td>8 300</td>
<td>8 962</td>
<td>8 201</td>
<td>8 873</td>
<td>10 177</td>
<td>9 674</td>
</tr>
</tbody>
</table>

(Source: Eurostat)
3.12.3. Consumption trends

The British market for surimi-based products is estimated at around 10 000 metric tonnes.

A major part of the British market is for imported frozen products, directed in equal parts to catering and home consumption. In both segments, the only or nearly only product is imitation crabmeat sticks, sometimes used in pieces for salads and in seafood cocktails prepared in restaurants.

Surimi products are also used for the sushi market, which is developing quickly in the United Kingdom, in particular for out-of-home consumption.

Household purchases are frozen products and are made almost exclusively in supermarkets. The French chilled product Coraya is the one exception. It seems that the market may shift from frozen to chilled surimi products.

Some examples of e-trade prices are shown in Table 3.12-2.

| UK: EXAMPLES OF E-TRADE PRICES OF SURIMI PRODUCTS |
|-----------------|----------------|----------------|
| **Product**     | **Weight**     | **Price/unit** | **Price/kg**  |
| Seafood sticks – retailer brand | 250/16 pieces | 0.89            | 3.56          |
| Seafood flakes – retailer brand  | 155            | 0.97            | 6.25          |
| Seafood stick bar – retailer brand | 45             | 0.30            | 6.67          |
| Seafood sticks – retailer brand | 250/16 pieces | 1.18            | 4.72          |
| Seafood sticks with garlic and lemon dip – retailer brand | 95 g          | 0.50            | 5.26          |
| Seafood sticks smart price – retailer brand | 250 g        | 0.79            | 3.16          |
| Seafood sticks – original brand    | 250 g          | 1.39            | 5.56          |
3.12.4. **Main actors**

- Macrae Seafoods, a subsidiary of the Macrae Food Group, one of the leading United Kingdom seafood companies, controls about 50 percent of the surimi-products market. It collaborates with Asian suppliers from Thailand, Malaysia and India. In 2000, the Macrae investment fund’s main shareholder acquired a share in the French company Charles Amand.
- Sea Products International is also a player on the British market, thanks to the Ocean Pearl and Coral Seas brands.

Other companies such as Lyons Seafoods, John Koch and Sco-Fro are also involved with surimi products import and distribution.

3.12.5. **Current and future developments**

For British consumers, the image of surimi-based products is that of an industrial and artificial down-market product. Were this negative image to be corrected, surimi-based products could benefit from the current, fast developing British market for convenience products.

3.13. **Other European countries**

Within the EU and in countries other than those mentioned above, there are other markets for surimi products (Table 3.13-1).

**Table 3.13-1: EU-9 and other countries surimi product market**

<table>
<thead>
<tr>
<th>Country</th>
<th>Metric tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>47,100</td>
</tr>
<tr>
<td>Spain</td>
<td>35,000</td>
</tr>
<tr>
<td>Italy</td>
<td>12,000</td>
</tr>
<tr>
<td>UK</td>
<td>11,000</td>
</tr>
<tr>
<td>Netherlands</td>
<td>3,600</td>
</tr>
<tr>
<td>Belgium</td>
<td>2,600</td>
</tr>
<tr>
<td>Sweden</td>
<td>2,500</td>
</tr>
<tr>
<td>Portugal</td>
<td>2,000</td>
</tr>
<tr>
<td>Germany</td>
<td>1,600</td>
</tr>
<tr>
<td>Other countries</td>
<td>3,600</td>
</tr>
<tr>
<td><strong>EU-25</strong></td>
<td><strong>121,000</strong></td>
</tr>
</tbody>
</table>

- **The Netherlands.** Surimi products are imported mainly from Asian countries (China, Thailand, Japan and Malaysia), with most of the imports used by industry and catering. An important part of the imports (around 30 percent) is re-exported to Belgium, Germany and Spain.
- **Belgium.** This country plays an important part in importing and re-exporting surimi products from Asian countries, and recently from Lithuania (since the establishment of a Viciunai sales office in the country). Among the important actors operating in Belgium is Seafood International Traders, which deals with various qualities of surimi from China, the Republic of Korea and Malaysia, and has installed its own company in China (Qingdao Surimi Foods). Another company called Hottlet is involved in Spain with Multi-Prosur, whose products Hottlet sells under the Epic and Neptun brands in Belgium.
- **Sweden.** Surimi products development is recent and is mostly limited to the catering industry.
• **Portugal.** A vast majority of surimi products on the Portuguese market, mostly frozen, come from Spain and are sold to the catering industry.

• **Germany.** Surimi products development has been handicapped for a long time by the official surimi designation ‘Imitat aus Fischmuskeleiweiß, geformt’ (translated ‘imitation made of fish muscle protein, moulded’). In spite of this unappealing designation, surimi products are frequently used by the food industries in seafood salads, which are very popular in Germany. Presently, the German market seems to be expanding.

All of the European countries mentioned in section 3.13 import 100 percent of their needs in surimi-based products.

- **Particular points**

  • **Latvia.** Founded in 1997, Marlex, a company with around 80 employees, specializes in surimi-based products (imitation crab sticks, crabmeat, crab noodles and salmon sticks). Its production capacity is said to be 250 metric tonnes per week (more than 10 000 metric tonnes per year?).

### 3.14. United States of America


Total United States surimi production is estimated at around 250 000 metric tonnes per year and statistics report annual exports of 200 000 metric tonnes. Raw surimi available to American processors for working into surimi products could then be estimated at 50 000 metric tonnes per year.

Assuming an average 40 percent surimi content, output of surimi-based products should be as high as 125 000 metric tonnes. This figure seems quite high when compared to estimates by some industry insiders, who speculate that the total market size is 170 million pounds (76 500 metric tonnes), imports included.

#### 3.14.2. Surimi products trade

There is no specific category for surimi products in United States customs statistics. Actual imports of surimi products from Asian countries (the Republic of Korea, China and Thailand) into the United States of America must therefore be estimated by compiling imports of commodities in categories such as ‘fish pastes’, ‘fish cakes’ and ‘fish balls’. Using this method, annual imports reached 12 000 metric tonnes in 2005, with a growth trend of 7 percent per year (Table 3.14-1 and Figure 3.14-1).

#### Table 3.14-1: estimation of US surimi products imports

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thailand</td>
<td>2 438</td>
<td>2 698</td>
<td>3 293</td>
<td>2 886</td>
<td>3 784</td>
<td>3 119</td>
</tr>
<tr>
<td>Japan</td>
<td>1 561</td>
<td>2 036</td>
<td>1 661</td>
<td>2 111</td>
<td>1 826</td>
<td>2 376</td>
</tr>
<tr>
<td>China (PRC)</td>
<td>537</td>
<td>817</td>
<td>1 141</td>
<td>1 858</td>
<td>2 189</td>
<td>2 170</td>
</tr>
<tr>
<td>South Korea</td>
<td>1 869</td>
<td>2 390</td>
<td>2 218</td>
<td>1 549</td>
<td>1 336</td>
<td>1 478</td>
</tr>
<tr>
<td>China (RC)</td>
<td>264</td>
<td>265</td>
<td>293</td>
<td>240</td>
<td>232</td>
<td>363</td>
</tr>
<tr>
<td>Singapore</td>
<td>162</td>
<td>178</td>
<td>342</td>
<td>301</td>
<td>407</td>
<td>447</td>
</tr>
<tr>
<td>Other</td>
<td>696</td>
<td>500</td>
<td>653</td>
<td>434</td>
<td>1 222</td>
<td>1 852</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>7 527</strong></td>
<td><strong>8 884</strong></td>
<td><strong>9 601</strong></td>
<td><strong>9 379</strong></td>
<td><strong>10 996</strong></td>
<td><strong>11 805</strong></td>
</tr>
</tbody>
</table>

(* There is no commodity code for 'surimi products' as such. Other categories, such as 'fish balls', 'fish cakes' and 'fish pastes' are likely to include the surimi products.*)
3.14.3. Consumption trends

In the United States of America, surimi products are sold in the retail and foodservice markets. The Food and Drug Administration (FDA) requires that the word ‘imitation’ be printed on packaging. Industry insiders consider this rule to be a handicap for sales, and surimi producers are searching for a new name to submit to the FDA.

American consumers mainly perceive surimi products as seafood ingredients to be blended into salads, for which recipes are available at supermarket deli counters.

The choice of products is large and diversified, much more so than on European market.

3.14.4. Main actors

Producers

- Louis Kemp Seafood has captured one-third of the United States retail surimi market with its leading brand Louis Kemp. Formerly a division of Conagra (one of North America’s largest package-food companies), Louis Kemp Seafood was recently bought by Trident Seafoods, which operates more than 30 vessels and 13 processing plants and constitutes a fully integrated, Alaska pollock fishing/surimi/surimi products company.
- Trans-Ocean Products, founded in 1985, has a joint venture with the Japanese Maruha Group. It operates two plants in the states of Washington and Oregon. Its brands are Crab Classic and Lobster Classic. Two Trans-Ocean products were awarded Marine Stewardship Council labels in 2006.
- Shining Ocean, founded in 1985, has one plant in Sumner (Washington). Its brands are Crab and Lobster Elite, Kanimi, Emerald Sea and Seafarer. It is active in the retail and foodservice markets.
- Sugiyo USA was founded in 1986 as a joint venture between American and Japanese companies. It is the leading producer of surimi products in the United States of America. It operates one plant in Anacortes (Washington). It has a wide product range.
Importers

Many importers have surimi seafood in their product range. Below are some of the companies most specialized in surimi products.

- Zaloom Marketing is an important importer of surimi-based products from Asian countries (Thailand, the Republic of Korea, Singapore and Malaysia). Its product range is very wide, and goes from traditional imitation crab sticks to imitation coconut breaded butterfly shrimps.
- Jana Brands is a Japanese subsidiary of Maruha. It imports surimi seafood into the United States of America and has recently entered a partnership with an Estonian producer. Its brand is Deluxe.
- Harbor Seafood, founded in 1975, trades seafood from different countries of origin.
- National Fish & Seafood, founded in 1979, imports seafood products from different countries of origin. Its brands are Matlaw’s and Schooner.
- Nippon Suisan USA is the American office of the very big Japanese company Nippon Suisan, which is involved worldwide in the surimi and surimi products business.


The surimi products market is expanding in the United States of America thanks to product innovation and improved consumer marketing by big companies.

American actors are developing their businesses in the following three directions:

- product diversification, including new recipes, new packaging and new business sectors;
- exploitation of health claims by promoting healthful properties which are either inherent to the product or added (such as fortification of the product with Omega3 ); and
- exploitation of sustainability claims through MSC labeling, for instance.

3.15. South America countries

3.15.1. Uruguay

Surimi is not being produced in Uruguay presently. However, Arteva S.A., a factory for surimi products, has been operating in Montevideo since 2000. Arteva imports on average 500 metric tonnes of raw material surimi, mainly from Argentina (two-thirds) and from Chile (the remaining one-third). Although there is a small domestic market for surimi products, the company is export-oriented. Its main markets are in the South American region, namely Brazil, Argentina, Colombia, Chile, Paraguay, Mexico and Peru, with an increasing presence in extra-regional markets as well, namely the United States of America, Israel, Italy, France, Latvia, Estonia and Bulgaria.

Arteva S.A. is undertaking a project to begin producing surimi in a factory in La Paloma (a fishing port situated 300 km east of Montevideo). Its plan is to produce 2 500 metric tonnes of surimi per year, made from an underexploited ground fish resource called the ‘castañeta’ or ‘papamosca’ (*Cheylodactylus bergii*).
3.15.2. Mexico

Surimi products are consumed in Mexico. However, the country did not develop a surimi industry. Surimi products are mainly imported from the United States of America. Lower quality (thus cheaper) surimi products are imported from the Republic of Korea and China.

3.15.3. Brazil

Brazil imports surimi from Chile and Argentina and processes it into surimi products, which are totally absorbed by its domestic market. There are no exports of surimi products registered.

4. CONCLUSION

Surimi products market

If estimated production of the various producer countries is summed up and if one assumes that about 10 percent of production is not accounted for, the global market for surimi-based products could be around 1.4 million metric tonnes. A comparison between the different countries on a per capita consumption basis reveals big differences in consumption, even if some estimates are quite rough (Table 4-1).

Table 4-1: Comparison between different countries surimi products consumption per capita

<table>
<thead>
<tr>
<th>Country</th>
<th>Surimi products, production in metric tonnes</th>
<th>Surimi products, import in metric tonnes</th>
<th>Surimi products, export in metric tonnes</th>
<th>Apparent market in metric tonnes</th>
<th>Population millions</th>
<th>kg/per capita/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>42 000</td>
<td>12 000</td>
<td>3 000</td>
<td>51 000</td>
<td>60</td>
<td>0.850</td>
</tr>
<tr>
<td>Spain</td>
<td>20 000</td>
<td>16 000</td>
<td>3 000</td>
<td>33 000</td>
<td>44</td>
<td>0.750</td>
</tr>
<tr>
<td>Italy</td>
<td>4 000</td>
<td>13 000</td>
<td>1 000</td>
<td>16 000</td>
<td>58</td>
<td>0.276</td>
</tr>
<tr>
<td>UK</td>
<td>0</td>
<td>10 000</td>
<td></td>
<td>10 000</td>
<td>59</td>
<td>0.169</td>
</tr>
<tr>
<td>Netherlands</td>
<td></td>
<td></td>
<td></td>
<td>3 600</td>
<td>16</td>
<td>0.225</td>
</tr>
<tr>
<td>Belgium</td>
<td></td>
<td></td>
<td></td>
<td>2 600</td>
<td>10</td>
<td>0.260</td>
</tr>
<tr>
<td>Sweden</td>
<td></td>
<td></td>
<td></td>
<td>2 500</td>
<td>9</td>
<td>0.278</td>
</tr>
<tr>
<td>Portugal</td>
<td></td>
<td></td>
<td></td>
<td>2 000</td>
<td>10</td>
<td>0.200</td>
</tr>
<tr>
<td>Germany</td>
<td></td>
<td></td>
<td></td>
<td>1 600</td>
<td>82</td>
<td>0.020</td>
</tr>
<tr>
<td>Lithuania</td>
<td>45 000</td>
<td>23 000</td>
<td>22 000</td>
<td>3 4</td>
<td>6.470</td>
<td></td>
</tr>
<tr>
<td>EU-25</td>
<td>110 000</td>
<td>53 000</td>
<td>2 000</td>
<td>161 000</td>
<td>452</td>
<td>0.356</td>
</tr>
<tr>
<td>Japan</td>
<td>600 000</td>
<td></td>
<td></td>
<td>600 000</td>
<td>128</td>
<td>4.690</td>
</tr>
<tr>
<td>South Korea</td>
<td>200 000</td>
<td>13 000</td>
<td>200 000</td>
<td>48</td>
<td>4.160</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>150 000</td>
<td>80 000</td>
<td>70 000</td>
<td>60</td>
<td>1.170</td>
<td></td>
</tr>
<tr>
<td>China (PRC)</td>
<td>100 000</td>
<td>20 000</td>
<td>80 000</td>
<td>1243</td>
<td>0.064</td>
<td></td>
</tr>
<tr>
<td>China (RC)</td>
<td>50 000</td>
<td></td>
<td></td>
<td>50 000</td>
<td>23</td>
<td>2.170</td>
</tr>
<tr>
<td>India</td>
<td>10 000</td>
<td></td>
<td></td>
<td>10 000</td>
<td>1027</td>
<td>0.010</td>
</tr>
<tr>
<td>USA</td>
<td>125 000</td>
<td>12 000</td>
<td></td>
<td>137 000</td>
<td>296</td>
<td>0.463</td>
</tr>
</tbody>
</table>
For countries whose consumption level is higher than 4 kg per capita per year, there should be no further, major expansion in the future. For the other countries, even if food habits vary considerably, a growth potential exists. Countries such as France and Spain are good examples of countries with continuous growth in the surimi products market for many years.

Surimi is a versatile raw material which allows food companies to create many different products adapted to each country’s specificities and customer’s requirements: different shapes, different colors, different quality and incorporation of health-promoting components. It can be produced for restaurants, for snacks, for main dishes, for children, for adults, frozen, chilled.

The potential global growth for surimi products is huge!

**Surimi availability**

The most important question is “What will be the availability of surimi in the future?”

For 750 000 metric tonnes of surimi, the corresponding annual fishing requirement is around 2–3 million metric tonnes of round fish. The Alaska pollock fishery seems to be recognized as sustainable but nevertheless annual quotas are expected to be further reduced. In addition, pressure to divert processing towards increased fillet production, as for some other ground fish species, is expected to become ever greater in the future.

On the brighter side, technological progress will continue to improve the yields and to adapt the products to the requirements of food industries which, in turn, will adapt their processes and products to the new raw materials.

As a consequence, fish species not previously used may well be entering the scene just as threadfin bream and other species already have in the recent past to supplement Alaska pollock in surimi expansion.

Acceptance of new fish species could make it possible for countries with abundant resources of low-quality fish species to enhance their value through the production of surimi and to become new players in the food industry. Many projects using low-quality fish species for surimi production exist all over the world.

Use of fishmeal species offers other perspectives, just as jack mackerel provides Chile with other opportunities. Economic returns from value-added surimi are higher than those from fishmeal, and provided that pending technical problems are solved, a part of the enormous resource of fishmeal species might be used for producing surimi.

Given the demand to come, without a doubt big globalized American and Asian companies will continue to invest in surimi production development.
5. REFERENCES

- EIC. India’s Official Export Certification Body. List of Approved Units. Fish & Fishery products. Available at: http://eicindia.org
- Knapp, Gunnar. January 2006. An Overview of Alaska Pollock Markets. University of Alaska, Anchorage. E-mail: gunnar.knapp@uaa.alaska.edu
- Produits de la Mer. Annuaire 2006 and different various articles.

USEFUL INTERNET SITES

- ADEPALE – ADISUR www.adepale.org
- Alaska Seafood Marketing Institute www.alaskaseafood.org
- Association of Genuine Alaska Pollock Producers www.gapp.us
- British Frozen Food Federation www.bfff.co.uk
- European Seafood. 2006 exhibitors list. www.euroseafood.com
- EUROSTAT  
- FAO statistics, technical data and fishery country profiles.  
  [www.fao.org](http://www.fao.org)
- FAO/WHO. Codex Alimentarius  
  [www.codexalimentarius.net](http://www.codexalimentarius.net)
- FISH INFO (various articles) – EUROFISH  
  [www.eurofish.dk](http://www.eurofish.dk)
- GLOBEFISH  
  [www.globefish.org](http://www.globefish.org)
- International Boston Seafood Show.  
  2006 exhibitors list.  
  [www.bostonseafood.com](http://www.bostonseafood.com)
- INTRAFISH (various articles)  
  [www.intrafish.no](http://www.intrafish.no)
- SEAFOOD BUSINESS  
  [www.seafoodbusiness.com](http://www.seafoodbusiness.com)
- SEAFOOD INTERNATIONAL (various articles)  
  [www.seafood-international.com](http://www.seafood-international.com)
- Thai Frozen Foods Association  
  [www.thai-frozen.or.th](http://www.thai-frozen.or.th)
- Thailand Information Network  
  [www.thai-info.net](http://www.thai-info.net)
- Quick Frozen Foods International Magazine.  
  April 2006.  
  [www.qffintl.com](http://www.qffintl.com)
- Ubifrance. Various country reports from economic missions to French embassies.  
  [www.ubifrance.fr](http://www.ubifrance.fr)
- US International Trade Commission  
  [www.dataweb.usitc.gov](http://www.dataweb.usitc.gov)
- USDA Foreign Agricultural Service  
  [www.fas.usda.gov](http://www.fas.usda.gov)
- USDC NOAA. National Marine Fisheries Service  
  [www.nmfs.noaa.gov](http://www.nmfs.noaa.gov)
APPENDIX 1: CODE OF PRACTICE FOR FROZEN SURIMI

Dr. Watering  means removal of excessive wash water from the minced fish flesh.
Frozen Surimi  means the fish protein product for further processing, which has been processed by heading, gutting, cleaning fresh fish, and mechanically separating the edible muscle from the skin and bone. The minced fish muscle is then washed, refined, de-watered, mixed with cryoprotective food ingredients and frozen.
Col Forming Ability  means the ability of surimi to form an elastic gel when fish meat is comminuted with the addition of salt and then formed and heated. This elasticity is a function possessed by myosin as the primary component of myofibrillar protein.
Myofibrillar Protein  is a generic term of skeletal muscle proteins such as myosin and actin.
Refining  means a process of removing from washed meat by use of a strainer small bones, scales, scales and bloody flesh of such sizes as may not be mixed in a final product, thereby concentrating myofibrillar protein.
Surimi-Based Products  means a variety of products produced from surimi with addition of ingredients and flavour such as "surimi gel" and shellfish analogues.
Water-Soluble Components  means any water-soluble proteins, organic substances and inorganic salts contained in fish meat.
Washing  means a process of washing away blood and water-soluble components from minced fish with cold water by the use of a rotary filter, thus increasing the level of myofibrillar proteins thereof.
Washed Meat  means fish meat that is washed and then drained of water.

SECTION 9  PROCESSING OF FROZEN SURIMI
9.1  General Considerations of Hazards and Defects
9.2  Fish Preparation
9.3  Meat Separation Process
9.4  Washing and De-Watering Process
9.5  Refining Process
9.6  Final De-washing Process
9.7  Mixing and Addition of Adjutant Ingredients Process
9.8  Packaging and Weighing
9.9  Freezing Operation
9.10  Dianamating Freezing Pan
9.11  Metal Detection
9.12  Boxing and Labelling
9.13  Frozen Storage
9.14  Raw Material Reception – Packaging and Ingredients
9.15  Raw Material Storage – Packaging and Ingredients

SECTION 9 - PROCESSING OF FROZEN SURIMI

In the context of recognizing controls at individual processing steps, this section provides examples of potential hazards and defects and describes technological guidelines, which can be used to develop control measures and corrective action. At a particular step or the hazards and defects, which are likely to be introduced or controlled at that step, are listed. It should be recognized that in preparing a HACCP and/or DAP plan it is essential to consult Section 5 which provides guidance for the application of the principles of HACCP and DAP analysis. However, within the scope of this Code of Practice it is not possible to give details of critical limits, monitoring, record keeping and verification for each of the steps since these are specific to particular hazards and defects.

Frozen surimi is an intermediate food ingredient made from myofibrillar fish protein isolated from other comminute fish protein by repeated washing and de-watering of minced fish. Cryoprotectants are added so that the mince can be frozen and will retain the capacity to form gel when heat-treated after thawing. Frozen surimi is usually blended with other components and further processed into surimi-based products such as kanabako or crab analogs (imitation crab) that utilise its gel forming ability.
Frozen surimi is manufactured using various methods, but this flow chart shows the most typical procedure. This flow chart is for illustrative purpose only. For in-factory HACCP implementation a complete and comprehensive flow chart has to be draw up for each process.

References correspond to relevant Sections of the Code.

Figure 9.1 Example of a flow chart of a frozen surimi production process.

(For further information, please consult directly the corresponding sections of the Codex Alimentarius.)
**APPENDIX 2: LIST OF SPECIES USED FOR SURIMI PRODUCTION**

*Main Source: Pascal Guennegues, Oregon State University Surimi School*

<table>
<thead>
<tr>
<th>English common names</th>
<th>Scientific names</th>
<th>Japanese names</th>
<th>Spanish names</th>
<th>French names</th>
<th>Main countries involved in surimi production</th>
<th>Surimi level of production (estimate in metric tonnes)</th>
<th>Main characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COLD WATER WHITE FISH SURIMI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alaska pollock or walleye pollock</td>
<td>Theragra chalcogramma</td>
<td>Suketodara Colin de Alaska</td>
<td>Colín de Alaska</td>
<td>Lieu de l’Alaska</td>
<td>USA, Japan</td>
<td>240 000</td>
<td>High-gel forming capacity and good colour</td>
</tr>
<tr>
<td>Pacific whiting or Canadian Pacific hake</td>
<td>Merluccius productus</td>
<td>–</td>
<td>–</td>
<td>Merluza del Pacífico Norte</td>
<td>Merlu du Pacifique Nord</td>
<td>USA, Canada</td>
<td>15 000</td>
</tr>
<tr>
<td>Southern blue whiting</td>
<td>Micromesistius australis</td>
<td>Patagonia minamidara</td>
<td>Bacaladilla</td>
<td>Merlan bleu du sud</td>
<td>Chile, Argentina</td>
<td>30 000 (with a portion of Patagonian grenadier)</td>
<td>High quality white similar to Alaska pollock</td>
</tr>
<tr>
<td>Hoki or patagonian grenadier</td>
<td>Macruronus magellanicus</td>
<td>Hoki</td>
<td>Merluza de cola</td>
<td>Grenadier patagonien</td>
<td>Chile, Argentina</td>
<td>Mainly used by fillet producers</td>
<td>High-gel forming capacity and good colour</td>
</tr>
<tr>
<td>New Zealand hoki</td>
<td>Macruronus novaeselandia</td>
<td>Hoki</td>
<td>Merluza de cola azul</td>
<td>Grenadier bleu</td>
<td>Japan, New Zealand</td>
<td>Mainly used by fillet producers</td>
<td>High-gel forming capacity and good colour</td>
</tr>
<tr>
<td>Northern blue whiting</td>
<td>Micromesistius poutassou</td>
<td>Bacala</td>
<td>Merlan bleu du Nord</td>
<td></td>
<td>France, Faeroe Islands, Norway</td>
<td>20 000</td>
<td>Need to be filleted very quickly before processing. High elasticity and high-gel forming capacity but darker colour and higher degree of impurities</td>
</tr>
<tr>
<td><strong>PELAGIC FISH SURIMI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack mackerel</td>
<td>Trachurus murphyi</td>
<td>–</td>
<td>Jurel chileno</td>
<td>Chinchard jurel</td>
<td>Chile</td>
<td>20,000</td>
<td>Removal of fat improves taste and colour and its use in combination with white surimi</td>
</tr>
<tr>
<td>Atka mackerel</td>
<td>Pleurogrammus monopterygius</td>
<td>Kitano-hokke</td>
<td>Lorcha de atka</td>
<td>Terpuga atka</td>
<td>Japan, Russian Federation</td>
<td>20 000</td>
<td></td>
</tr>
<tr>
<td>Sardine</td>
<td>Many different species</td>
<td>Many different species</td>
<td>Many countries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anchoveta</td>
<td>Engraulis ringens</td>
<td>–</td>
<td>Anchoveta</td>
<td>Anchois du Pérou</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longnose anchovy</td>
<td>Anchoa nasus</td>
<td>–</td>
<td>Anchoa</td>
<td>Anchois blanc (samase)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lumptail searobin</td>
<td>Prionotus stephanophrys</td>
<td>–</td>
<td>Gallina</td>
<td>Gallinazo (Verrue)</td>
<td>Peru</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pacific drum</td>
<td>Larimus pacificus</td>
<td>–</td>
<td>Cajero</td>
<td>Béreche (Verrue du Pacifique)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pacific harvestfish</td>
<td>Peprilus medius</td>
<td>–</td>
<td>Gallinazo</td>
<td>Chiri (Stromaté du Pacifique)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## TROPICAL FISH SURIMI

<table>
<thead>
<tr>
<th>Fish Type</th>
<th>Species</th>
<th>Common Names</th>
<th>Production Area</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threadfin bream</td>
<td><em>Nemipterus spp</em></td>
<td>Itoyori, Baga japonaise, Brème de mer</td>
<td></td>
<td>Slightly darker and oilier than pollock surimi. It constitutes the main alternative to Alaska pollock.</td>
</tr>
<tr>
<td>Big-eye</td>
<td><em>Priacanthus spp</em></td>
<td>Kinmedai, Catalufa del Pacífico, Baga japonaise</td>
<td></td>
<td>High quality similar to Itoyori.</td>
</tr>
<tr>
<td>Lizard fish</td>
<td><em>Saurida tumbil</em></td>
<td>Eso, Lagarto tumbil, Anoli tumbil</td>
<td>Thailand, India, Vietnam, China (PRC), Malaysia, Indonesia, Myanmar</td>
<td>White surimi with low-gel capacity used in combination with Itoyori.</td>
</tr>
<tr>
<td>Croaker</td>
<td><em>Johnius spp, Otolithus spp</em></td>
<td>Guchi, Corvina, Courbine</td>
<td></td>
<td>High quality similar to Itoyori and much appreciated in Japan for its taste and in Singapore for its gel ability.</td>
</tr>
<tr>
<td>Goatfish</td>
<td><em>Parupeneus spp, Upeneus spp,</em></td>
<td>Himeji – Rouget</td>
<td></td>
<td>Low-gel surimi of pink colour.</td>
</tr>
<tr>
<td>Ribbon fish</td>
<td><em>Trichiurus spp</em></td>
<td>Tachiuo, Sable, Sabre</td>
<td></td>
<td>Mainly used in China.</td>
</tr>
<tr>
<td>Reef cod</td>
<td><em>Epinephalus spp</em></td>
<td>Hata, Mero, Merou</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leather jacket</td>
<td><em>Stephanolepis spp</em></td>
<td>Kawahagi, Ballesta, Bourse</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## OTHER SPECIES

<table>
<thead>
<tr>
<th>Fish Type</th>
<th>Species</th>
<th>Common Names</th>
<th>Production Area</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giant squid</td>
<td><em>Dosidicus gigas</em></td>
<td>– Jibia gigante, Encornet géant</td>
<td>Peru</td>
<td>Snow white surimi of low-gel strength.</td>
</tr>
</tbody>
</table>
APPENDIX 3: GEOGRAPHIC DISTRIBUTION OF MAIN SURIMI FISH SPECIES

Alaska pollock – *Theragra chalcogramma*

Pacific whiting – *Merluccius productus*

Southern blue whiting – *Micromesistius australis*
Northern blue whiting – *Micromesistius poutassou*

Jack mackerel – *Trachurus murphyi*

Threadfin bream – *Nemipterus japonicus (one of the various threadfin bream species)*
## APPENDIX 4: EXAMPLES OF SURIMI SPECIFICATIONS
(Source: Pascal Guenneugues, Oregan State University Surimi School)

### POLLOCK SURIMI

<table>
<thead>
<tr>
<th>GRADE</th>
<th>Moisture</th>
<th>FACILITY TRAWLER</th>
<th>SHORE PLANT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GEL STRENGTH</td>
<td>WHITENESS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GS</td>
<td>Depth</td>
</tr>
<tr>
<td>SA</td>
<td>75%</td>
<td>&gt;1000</td>
<td>&gt;1.40</td>
</tr>
<tr>
<td>FA</td>
<td>75%</td>
<td>&gt;900</td>
<td>&gt;1.35</td>
</tr>
<tr>
<td>AA</td>
<td>75%</td>
<td>&gt;900</td>
<td>&gt;1.30</td>
</tr>
<tr>
<td>A</td>
<td>75%</td>
<td>&gt;750</td>
<td>&gt;1.25</td>
</tr>
<tr>
<td>KA</td>
<td>75%</td>
<td>&gt;600</td>
<td>&gt;1.1</td>
</tr>
<tr>
<td>KB</td>
<td>75%</td>
<td>&gt;500</td>
<td>&gt;1.0</td>
</tr>
<tr>
<td>RA</td>
<td>75%</td>
<td>&gt;400</td>
<td>&gt;1.0</td>
</tr>
</tbody>
</table>

### PACIFIC WHITING

<table>
<thead>
<tr>
<th>GRADE</th>
<th>Moisture</th>
<th>FACTORY TRAWLER</th>
<th>SHORE PLANT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GEL STRENGTH</td>
<td>WHITENESS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GS</td>
<td>Depth</td>
</tr>
<tr>
<td>SA</td>
<td>75%</td>
<td>&gt;1000</td>
<td>&gt;1.25</td>
</tr>
<tr>
<td>FA</td>
<td>75%</td>
<td>&gt;900</td>
<td>&gt;1.15</td>
</tr>
<tr>
<td>AA</td>
<td>75%</td>
<td>&gt;900</td>
<td>&gt;1.30</td>
</tr>
<tr>
<td>A</td>
<td>75%</td>
<td>&gt;750</td>
<td>&gt;1.25</td>
</tr>
<tr>
<td>KA</td>
<td>75%</td>
<td>&gt;600</td>
<td>&gt;1.1</td>
</tr>
<tr>
<td>KB</td>
<td>75%</td>
<td>&gt;500</td>
<td>&gt;1.0</td>
</tr>
<tr>
<td>RA</td>
<td>75%</td>
<td>&gt;400</td>
<td>&gt;1.0</td>
</tr>
</tbody>
</table>

### NORTHERN BLUE WHITING

<table>
<thead>
<tr>
<th>GRADE</th>
<th>Moisture</th>
<th>FACTORY TRAWLER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GEL STRENGTH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GS</td>
</tr>
<tr>
<td>SA</td>
<td>75%</td>
<td>&gt;1200</td>
</tr>
<tr>
<td>FA</td>
<td>75%</td>
<td>&gt;1000</td>
</tr>
<tr>
<td>A</td>
<td>75%</td>
<td>&gt;900</td>
</tr>
<tr>
<td>KA</td>
<td>75%</td>
<td>&gt;600</td>
</tr>
<tr>
<td>KB</td>
<td>75%</td>
<td>&gt;400</td>
</tr>
</tbody>
</table>

### ITOYORI

<table>
<thead>
<tr>
<th>GRADE</th>
<th>Moisture</th>
<th>THAILAND</th>
<th>INDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GEL STRENGTH</td>
<td>WHITENESS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GS</td>
<td>Depth</td>
</tr>
<tr>
<td>SA</td>
<td>75%</td>
<td>&gt;1200</td>
<td>&gt;1.10</td>
</tr>
<tr>
<td>AA</td>
<td>75%</td>
<td>&gt;600</td>
<td>&gt;0.95</td>
</tr>
<tr>
<td>A</td>
<td>76%</td>
<td>&gt;500</td>
<td>&gt;0.90</td>
</tr>
<tr>
<td>KA</td>
<td>76%</td>
<td>&gt;300</td>
<td>&gt;0.85</td>
</tr>
</tbody>
</table>

### JACK MACKEREL
APPENDIX 5: TROPICAL SURIMI FISHES
(Source: Lucky Surimi Products)

ITOYORI

ESO

KINMEDAI

HIMEJI RED

HIMEJI YELLOW

PONY
APPENDIX 6: WORLD MAP OF SURIMI AND SURIMI PRODUCTS TRADE

Surimi production
Surimi products production
Surimi main flow
Surimi products main flow
Surimi products main market
APPENDIX 7: EXAMPLES OF SURIMI-BASED PRODUCTS IN ASIAN COUNTRIES
IN OCCIDENTAL COUNTRIES
APPENDIX 8: LIST OF MAIN ACTORS BY COUNTRY & THEIR ADDRESSES

A8.1: JAPAN

JAPANESE MAIN SURIMI IMPORTERS WITH IMPORT QUOTA

- **ANYO FISHERIES CO., LTD.** – 2-9-1 Shinbashi, Minato-ku, TOKYO 105-004 JAPAN
  Tel.: 81-3-3593-0669
  Fax: 81-3-3593-0685

- **CO-OP TRADE JAPAN LTD.** – 3-29-8 Shibuya, Shibuya-ku, TOKYO 105-8913 JAPAN
  Tel.: 81-3-5778-8060
  Fax: 81-3-5778-8160
  E-mail: katsuyoshi.zenbutsu@ccu.coop

- **DAIMARU KOGYO, LTD., AGRICULTURAL & MARINE PRODUCTS DEPT.** – 2-18-11 Kiba Koto-ku, TOKYO 135-8510 JAPAN
  Tel.: 81-3-3593-0669
  Fax: 81-3-3593-0685

- **DAINICHI SUISAN K.K.** – 2-1-2 Kajiyacho, Hyogo-ku, Kobe, HYOGO 652 JAPAN
  Tel.: 81-78-681-3333

- **DAIROKU K.K.** – 1-1-12 Minato, Chuo-ku, TOKYO, JAPAN
  Tel.: 81-3-3593-0669
  Fax: 81-3-3593-0685

- **EASTERN PRODUCTS CO., LTD.** – 2-8-4 Kachidoki, Chuo-ku, TOKYO 104-0054 JAPAN
  Tel.: 81-3-3533-5911
  Fax: 81-3-3533-5918
  E-mail: epctobu@blue.ocn.ne.jp

- **FIT TRADING CO., LTD.** – 5-9-5-102 Uozaki-kitamachi, Tokai-ku, Kobe, HYOGO 658-0082 JAPAN
  Tel.: 81-78-453-4325
  Fax: 81-78-453-4324
  E-mail: fittrd@silver.ocn.ne.jp

- **GODAK MARKETING CORP.** – Tsukiji First Bldg., 4-7-3 Tsukiji, Chuo-Ku TOKYO 104 JAPAN
  Tel.: 81-3-3545-5699
  Fax: 81-3-3545-3734
  E-mail: TOKYO@godak.co.jp

- **GOSHOKU CO., LTD., TOKYO BRANCH** – 6-17-14 Tsukiji, Chuo-Ku, TOKYO 104-0045 JAPAN
  Tel.: 81-3-3542-5669
Fax: 81-3-3545-1604
E-mail: y.sunagawa@goshoku.co.jp
Web site: www.goshoku.co.jp

- **HANWA CO., LTD.** – 1-13-10 Tsukiji, Chuo-ku, TOKYO 104-8429
  JAPAN
  Tel.: 81-3-3544-2015
  Fax: 81-3-3544-2050
  E-mail: kojima@hanwa.co.jp

- **HANWA KOGYO K.K.** – 4-3-9 Fushimicho, Chuo-Ku OSAKA, JAPAN
  Tel.: 81-6-6206-3319
  Fax: 81-6-6206-3389

- **HENDERSON TRIPPE K.K.** – 527 Hibiya Park Bldg., 1-8-1 Yurakucho, Chiyoda-ku, TOYAMA 100 JAPAN
  Tel.: 81-3-3271-2921
  Fax: 81-3-3271-2922

- **HOHSUI CORPORATION** – Kyoei Bldg., 1-6-1 Hatchobori, Chuo-ku, TOKYO 104-8412 JAPAN
  Tel.: 81-3-3297-8181
  Fax: 81-3-3297-8205
  E-mail: omata@hohsui.co.jp
  Web site: www.hohsui.co.jp

- **HOKKAI SEAFOODS CO., LTD.** – Tsukiji Asakawa Bldg. 11-3 Akashicho, Chuo-ku, TOKYO 104-0044 JAPAN
  Tel.: 81-3-3546-1261
  Fax: 81-3-3546-1260

- **HOKO FISHING CO., LTD.** – 1-2-4 Tsukiji, Chuo-ku, TOKYO 104-0045 JAPAN
  Tel.: 81-3-3542-5644
  Fax: 81-3-3545-2167

- **HOKUYO KYODO GYOGYO K.K.** – 1-8-10 Toranomon, Minato-ku, TOKYO JAPAN
  Tel.: 81-3-3508-1411
  Fax: 81-3-3508-1445

- **HONAMI BUSSAN CO., LTD.** – Gyokou Bldg. Room 505, 1-16-1 Yamoto-Cho, Shimonoseki, YAMAGUCHI 750-0065 JAPAN
  Tel.: 81-832-67-5670
  Fax: 81-832-66-2181

- **IHARA & CO., LTD.** – 1-24 Funabacho, Rumoi, HOKKAIDO 007 JAPAN
  Tel.: 81-164-43-0001
  Fax: 81-164-43-4707
  E-mail: y-miura@po.teleway.ne.jp
JALUX K. K. – JAL Bldg. 2-4-11 Higashi-Shinagawa Shinagawa-ku TOKYO 140 JAPAN
Tel.: 81-3-5460-7151
Fax: 81-3-5460-7223
E-mail: yagi@jalux.com

KAKOREN LTD. – Mainichi Bldg. 8F, Nishi 6, Kita 4-jo, Chuo-ku, Sapporo, HOKKAIDO 060-0004 JAPAN
Tel.: 81-11-241-0101
Fax: 81-11-221-1628

KAWAEI SHOKAI CO., LTD. – 1-16-2 Yamatomachi, Shimonoseki, YAMAGUCHI 750 JAPAN
Tel.: 81-832-66-7557
Fax: 81-832-66-7557

KAWAMOTO SHOJI CO., LTD. – 1-10-13 Yamatomachi, Shimonoseki, YAMAGUCHI 750-0067 JAPAN
Tel.: 81-832-67-1321
Fax: 81-832-67-1322

KIBUN SHOJI K.K. – 7-14-13 Ginza, Chuo-ku, TOKYO 104 JAPAN
Tel.: 81-3-3543-7208
Fax: 81-3-3543-7209
E-mail: yoshiyasu_iwasa@kibun-ti.co.jp

KIBUN SHOKUHIN K.K. – 7-14-13 Ginza, Chuo-ku, TOKYO 104-8101 JAPAN
Tel.: 81-3-3544-2615
Fax: 81-3-3544-2580

KOBE YOKO LTD. – KIMM Bldg., 4-2-8 Isobe-dori, Chuo-ku, Kobe, HYOGO 651 JAPAN
Tel.: 81-78-232-3521
Fax: 81-78-232-3723

KOHYO CO., LTD. – 5-4-19 Shinsei, Yokkaichi-shi, MIE 510-0064 JAPAN
Tel.: 81-593-55-2441
Fax: 81-593-54-3428
E-mail: shayashi@kohyoj.co.jp

KOIKE INDUSTRIES – 3-4-22 Sakanamachi, Ishinomaki, MIYAGI 986-0022 JAPAN
Tel.: 81-225-94-9434
Fax: 81-225-94-9435
E-mail: koike-il@dup.joho-miyagi.or.jp

KYODO AGRI-MARINE MFG. LTD. – 940 Gushikawa, Gushikawa, OKINAWA 904-2223 JAPAN
Tel.: 81-98-974-3133
KYORITSU SHOJI CO., LTD. – 4-2-14 Hikoshima Nishiyama-cho Shimonoseki, YAMAGUCHI 750-0093 JAPAN
Tel.: 81-832-61-1430
Fax: 81-832-61-1431

LEAF SHOJI K.K. – 6-6-2 Shimorenjaku, Mitaka, TOKYO, JAPAN
Tel.: 81-422-48-1133
Fax: 81-422-48-1134

MARUBENI CORPORATION, MARINE PRODUCTS DEPT. – 1-4-2 Otemachi, Chiyoda-ku, TOKYO 100-0004 JAPAN
Tel.: 81-3-3282-4752
Fax: 81-3-3282-9654
E-mail: nakamura-k@marubeni.com

MARUGEN MARINEFOODS CO., LTD. – 93 Tabata-cho, Kitami, HOKKAIDO 090 JAPAN
Tel.: 81-157-24-8211
Fax: 81-157-24-9213

MARUHA GROUP INC. – 1-2-1 Chome, Otemachi, Chiyoda-ku, TOKYO 100-0004 JAPAN
Web site: www.maruha.co.jp

MARUTAKA CO., LTD. – 1-2-8 Yamatocho, Shimonoseki, YAMAGUCHI 750-0067 JAPAN
Tel.: 81-832-66-4106
Fax: 81-832-66-4106

MATSUDA SANGYO K.K. – Shinjuku Nomura Bldg. 6F, 1-26-2 Nishi-shinjuku, Shinjuku-ku, TOKYO 163 JAPAN
Tel.: 81-3-3993-6235
Fax: 81-3-3993-6235

MATSUOKA CO., LTD. – 1-10-12 Higashi-yamatomachi, Shimonoseki, YAMAGUCHI 750-0014 JAPAN
Tel.: 81-832-67-5566
Fax: 81-832-67-5286

MATSUYAMA CO., LTD. – 11-39 Hananocho, Shimonoseki, YAMAGUCHI 750-0014 JAPAN
Tel.: 81-832-34-4131
Fax: 81-832-34-4138

MITSUBISHI CORPORATION, MARINE PRODUCTS DEPT. – 2-3-1 Marunouchi, Chiyoda-ku, TOKYO 100-8086 JAPAN
Tel.: 81-3-3210-6705
Fax: 81-3-3210-6726
Web site: www.mitsubishi.co.jp

- **MITSUI & CO., LTD.,** MARINE PRODUCTS DIV. – 1-2-1 Ohtenachi, Chiyoda-ku, TOKYO 100-0004 JAPAN
  Tel.: 81-3-3285-6020
  Fax: 81-3-3285-9909
  Web site: www.mitsui.co.jp

- **MOMOKAWA CO.** – 2-16-14 Nihonbashi, Chuo-ku, TOKYO, JAPAN
  Tel.: 81-3-3272-7321
  Fax: 81-3-3272-7324

- **NEW ASIA TRADING CO., LTD.** – 3-3-9 Senba-chuo, Chuo-Ku, OSAKA 541 JAPAN
  Tel.: 81-6-6245-0251
  Fax: 81-6-6245-0255

- **NICHIMO CO., LTD.,** FOOD BUSINESS DEPT. – Tennozu Yusen Bldg., 2-2-20 Higashi-shinagawa, Shinagawa-ku, TOKYO 140-0002 JAPAN
  Tel.: 81-3-3458-3020
  Fax: 81-3-3458-3088

- **NICHIREI CORPORATION,** MARINE PRODUCTS DIV. – 6-19-20 Tsukiji, Chuo-ku, TOKYO 104-8402 JAPAN
  Tel.: 81-3-3248-2201
  Fax: 81-3-3248-2159
  E-mail: abensh@nichirei.co.jp
  Web site: www.nichirei.co.jp

- **NIPPON SUISAN KAISHA LTD.** – 2-6-2 Otemachi, Chiyoda-Ku, TOKYO 100-8686 JAPAN
  Tel.: 81-3-3244-7000
  Fax: 81-3-3244-7465
  E-mail: nao@nissui.co.jp
  Web site: www.nissui.co.jp

- **NIPPON TRADING CO., LTD.** – 3-17-1 Soyamacho, Kita-ku, Kobe, HYOGO 651-11 JAPAN
  Tel.: 81-78-594-4711
  Fax: 81-78-594-4811

- **NOGAMI SHOTEN** – 4-12-30 Nishiyamacho, Hikoshima, Shimonoseki, YAMAGUCHI 750 JAPAN
  Tel.: 81-832-67-7435
  Fax: 81-832-67-8392

- **NOMURA TRADING CO., LTD.,** FOOD BUSINESS UNIT – Higashikanda Daiji Bldg., 1-7-8 Higashikanda, Chiyoda-ku, TOKYO 101-0031 JAPAN
  Tel.: 81-3-5821-1507
  Fax: 81-3-5821-1257
  E-mail: s-nashimoto@nomuratrading.co.jp
- RASA CORPORATION – 8-1 Nihonbashi-hakozakicho, Chuo-ku, TOKYO 103 JAPAN
  Tel.: 81-3-3667-0291
  Fax: 81-3-3249-5344

- ROYAL GREENLAND JAPAN LTD. – 1-16-14 Shinkawa, Chuo-ku, TOKYO 104-0033 JAPAN
  Tel.: 81-3-3551-1130
  Fax: 81-3-3551-2351
  E-mail: mots@royalgreenland.com
  Web site: www.royalgreenland.com

- SANKYO FOOD KOGYO CO., LTD. – Tokiwa Bldg., 4-3-8 Tsukiji, Chuo-ku, TOKYO 104 JAPAN
  Tel.: 81-3-3543-8661
  Fax: 81-3-3545-8375

- SANYO TRADING CO., LTD. – 2-11 Kanda-nishikicho, Chiyoda-ku, TOKYO 101-0054 JAPAN
  Tel.: 81-3-3233-5882
  Fax: 81-3-3233-4158

- SHIN NIHON GLOBAL INC. – SK Bldg. 3F, 1-13-19 Shintomi, Chuo-ku, TOKYO JAPAN
  Tel.: 81-3-3555-3605
  Fax: 81-3-3555-3602
  E-mail: kuroda@sng.co.jp

  Tel.: 81-3-3479-3903
  Fax: 81-3-3479-5959
  E-mail: mishihara@shintokyo.co.jp

- SHINTO CORPORATION – 2-14-8 Tsukiji, Chuo-ku, TOKYO, JAPAN
  Tel.: 81-3-3546-1281
  Fax: 81-3-3546-1277

- SHINYEI KAISHA – 77-1 Kyomachi, Chuo-ku, Kobe, HYOGO 651-01 JAPAN
  Tel.: 81-3-5443-1789
  Fax: 81-3-5443-1788
  E-mail: s-yamaguchi@sk.shinyei.co.jp

  Tel.: 81-3-5446-5938
  Fax: 81-3-5446-0938
  E-mail: sueyoshi@cnr.ne.jp
SUMITOMO CORPORATION (SC FOODS CO., LTD.) – Kandabashi Yasuda Bldg., 1-1 Kanda-nishikicho, Chiyoda-ku, TOKYO 101-0054 JAPAN
Tel.: 81-3-3219-3030
Fax: 81-3-3219-3045
Web site: www.scgourmet.co.jp

SUNLAND CORP. – Kitaguchi Saito Bldg., 5-6-20 Honcho, Funabashi, CHIBA 273-0005 JAPAN
Tel.: 81-47-460-2080
Fax: 81-47-460-2099
E-mail: sunland@pop21.odn.ne.jp

TAITO SEIKO CO., LTD. – Imaasa Bldg. 1-21, Higashi-shimbashi, Minato-ku, TOKYO 105-0021 JAPAN
Tel.: 81-3-3572-3235
Fax: 81-3-3572-3235

TOHO BUSSAN KAISHA, LTD., FOOD STUFF DIV. – Shuwa Shiba Park Bldg. A-8F, 2-4-1 Shibakoen, Minato-ku, TOKYO 105-0011 JAPAN
Tel.: 81-3-3438-5742
Fax: 81-3-3438-5798
E-mail: ken.suizu@tohob.co.jp

TOKAI SUISAN TRADING CO., LTD. – Kyoei Bldg. F, 6-1-8 Tsukiji, Chuo-ku, TOKYO 104-0045 JAPAN
Tel.: 81-3-3546-1900
Fax: 81-3-3546-1906

TOKO INDUSTRIAL CO., LTD. – 1-2-5 Higashi-yamatomachi, Shimonoseki, YAMAGUCHI 750-0066 JAPAN
Tel.: 81-832-67-2385
Fax: 81-832-67-0100

TOKYO COMMERCIAL CO., LTD. – 8-15 Toyomicho, Chuo-ku, TOKYO 104-0055 JAPAN
Tel.: 81-3-3534-1301
Fax: 81-3-3532-9420
E-mail: k.sakai@tccwf.co.jp

TOMEI FRUITS CO., LTD. – Kyobashi NS Bldg. 8F, 2-5-21 Kyobashi, Chuo-ku, TOKYO 104 JAPAN
Tel.: 81-3-3563-3751
Fax: 81-3-3563-3755

TOMEN CORPORATION, MARINE PRODUC DEPT. – Tomen Marunouchi Bldg., 3-8-1 Marunouchi, Chiyoda-ku, TOKYO 100-8623 JAPAN
Tel.: 81-3-5288-3124
Fax: 81-3-5288-9115
Web site: www.tomen.co.jp
TSUKIJI SUISAN, K.K. – 3-11-18 Tsukuda, Chuo-ku, TOKYO 104-0051 JAPAN
Web site: www.tsukiji-suisan.com

UNICOOP JAPAN (KUMIAI BOEKI K.K.) – 1-1-12 Uchikanda, Chiyoda-ku
TOKYO 101 JAPAN
Tel.: 81-3-3296-8983
Fax: 81-3-3219-1460

ZENSUI CO., LTD. – 1-10-3 Ginza, Chuo-ku, TOKYO 104 JAPAN
Tel.: 81-3-5250-2411
Fax: 81-3-3250-2415
E-mail: zensui@mb-kcom.ne.jp

JAPANESE SURIMI PRODUCTS PROCESSORS US CERTIFIED

ASASHIO CO., LTD., (YAMASA KAMABOKO CO., LTD.) – 327-16
Yumeshaki-Cho, Shikama-Gun, HYOGO, JAPAN

FUSHIMI KAMABOKO CO., LTD. – Head Office Factory, 699-12 Niizaki,
NIIGATA CITY 950-3134 JAPAN

HAKODATE NATORI CO., LTD. – Daiichi Factory, 142-12 Aza-Shimizugawa,
Ohno-cho, Kameda-gun, HOKKAIDO, JAPAN

ICHIMASA KAMABOKO CO., LTD. – Head and Eguchi Factory, 7-77,
Tsushimaya, NIIGATA CITY, Niigata Prefecture, JAPAN

ICHIMASA SHOKUHIN CO., LTD. – 7-3-6 Yamakido, NIIGATA CITY, Niigata
Prefecture, JAPAN

KIBUN SHOKUHIN CO., LTD. – Tokyo Factory, 2-1-1 Yakou-Shinmei,
Sakaemachi, Inbagun, CHIBA, JAPAN

KYOKUYO FOODS CORPORATION – Nobinono 830, Matsuno town, Kitauwa
Country, Enhime Prefecture, JAPAN

MARUHA CORPORATION – Utsunomiya Plant- 8-1, Kiyohara Industrial Area,
UTSNOMIYA CITY, Tochigi Prefecture, JAPAN
A8.2 : THAILAND

SURIMI

ANDAMAN SURIMI INDUSTRIES CO., LTD. – 12/32 Moo 3, T. Bangkachao, A. Muang
SAMUTSAKORN 74000 THAILAND
Tel.: 66-34-822958-9
Fax: 66-34-822931
E-mail: atech@ji-net.com
Web site: www.surimi.co.th

ANUSORN MAHACHAI SURIMI CO., LTD. – 59/7 Moo 8, T. Tasai, A. Muang
SAMUTSAKORN 74000 THAILAND
Tel.: 66-34-414161-4
Fax: 66-34-414165
E-mail: maketing@anusorn.co.th
Web site: www.anusorn.co.th

APITOON ENTERPRISE INDUSTRY CO., LTD. – 17th Floor, Thai Wah Tower, 21 South
Sathorn Road, BANGKOK 10120 THAILAND
Tel.: 66-2-2850052
Fax: 66-2-2850359, 2850369
E-mail: apitoon@apitoon.com
Web site: www.apitoon.com

CHAICHAROEN MARINE (2002) CO., LTD. – 364 Moo 8, T. Bana, A. Muang
PATTANI 94000 THAILAND
Tel.: 66-73-311142-3
Fax: 66-73-311121
E-mail: sale@cmr2002.com
Web site: www.cmr2002.com

CHINA SIAM SEAFOODS CO., LTD. – 69 Moo 5, T. Khaothan, A. Tachang,
SURATTHANI 84150 THAILAND
Tel.: 66-77-260601-4
Fax: 66-77-260605
E-mail: css_foods@yahoo.com

HAITAI SEAFOOD CO., LTD. – 64/2 Moo, Chana-Pattani Road, T. Banna, A. Chana
SONGKHLA 90130 THAILAND
Tel.: 66-74-378391-7
Fax: 66-74-378398-9
E-mail: ht-mn@sanook.com

KANTANG SEAFOOD CO., LTD. – 59 Kittikhun Road, Kantang, TRANG 92110
THAILAND
Tel.: 66-75-251450
Lucky Foods (Thai) Co., Ltd. – 63/2 Moo 6, Thonburi-Paktho Road, T. Bangkrachao, A. Muang, Samutsakorn 74000 Thailand
Tel.: 66-34-839483-5, 839863-5
Fax: 66-34-839482
E-mail: luckyppl@ji-.net.com
Web site: www.luckyfoods.thailand.com

Pacific Marine Food Products Co., Ltd. – 75/12 Moo 5, T. Kokkham, Okkham, A. Muang, Samutsakorn 74000 Thailand
Tel.: 66-34-833696-704
Fax: 66-34-423620, 426743
E-mail: surimithailand@asia.com
Web site: www.surimithailand.com

Sea Royal Marine Food Product Co., Ltd. – 80 Moo 1, Thamkunakorn Road, T. Bangyapark, A. Muang, Samutsakorn 74000 Thailand
Tel.: 66-34-423961-4
Fax: 66-34-422829, 841220
E-mail: sea_royal@yahoo.com
Web site: www.srm.thailand.com

Starfish Co., Ltd. – 79/8 Moo 1, T. Bangtorud, A. Muang Samutsakorn 74000 Thailand
Tel.: 66-34-839935-40
Fax: 66-34-839739
E-mail: marketing@starfish.co.th

Trang Sure Co., Ltd. – 43 Tanasarn Bldg., Chiang Mai Road, Klongsan, Bangkok 10600 Thailand
Tel.: 66-2-8633288
Fax: 66-2-8631390
E-mail: export@trangsure.com
Web site: www.trangsure.com

Surimi Products

A&N Foods Co., Ltd. – 17th Floor, Thai Wah Tower, 21 South Sathorn Road, Bangkok 10120 Thailand
Tel.: 66-2-2850372-6
Fax: 66-2-2850371

A.P. Frozen Foods Co., Ltd. – 17th Floor, Thai Wah Tower, 21 South Sathorn Road, Bangkok 10120 Thailand
Tel.: 66-2-2850051
Fax: 66-2-2850359, 2850369
E-mail: apfrozen@apfrozen.com
Web site: www.apfrozen.com

BS Manufacturing Co., Ltd. – 964/14 Moo 12, Bangna-Trad Road, Bangna Bangkok 10260 Thailand
Tel.: 66-2-399340-4
Fax: 66-2-3993405

Surimi Products
E-mail: bsmnuf@ksc.th.com

- **KIBUN (THAILAND) CO., LTD.** – 31/10 Moo 2, Rama II Road, Bangkrachao, A. Muang, SAMUTSAKORN 74000 THAILAND
  Tel.: 66-34-822824-6
  Fax: 66-34-822186
  E-mail: prasert@kibunthai.co.th
  suthipongkibun@yahoo.com

- **LUCKY SURIMI PRODUCTS CO., LTD.** – 289 Soi 6, Rachadapisek Road, Bukkhalo Thonburri, BANGKOK 10600 THAILAND
  Tel.: 66-2-4760674-82
  Fax: 66-2-4760658
  E-mail: isp@luckysurimi.com
  Web site: www.luckysurimi.com

- **LUCKY UNION FOODS CO., LTD.** – 1168/48 Lumpini Tower, 18th Floor, Rama IV Road, Tungmahamek, Sathorn, BANGKOK 10120 THAILAND
  Tel.: 66-34-490009-12
  Fax: 66-34-490008
  E-mail: lufinfo@cscoms.com
  Web site: www.luf.co.th

- **MAN A FROZEN FOODS CO., LTD.** – 9/4 SOI 17, Taiban Road, T. Paknam, A. Muang SAMUTPRAKAN 10270 THAILAND
  Tel.: 66-2-7016960, 3882280
  Fax: 66-2-7016961
  E-mail: manabkk@asiaaccess.net.th
  Web site: www.manafish.com

- **PACIFIC FISH PROCESSING CO., LTD.** – 27/4 Moo 7, Kaoseng-Jana Road, A. Muang, SONGKHLA 90000 THAILAND
  Tel.: 66-74-330611-6, 435283-90
  Fax: 66-74-337104
  E-mail: thawee@pfp-pacific.com
  Web site: www.pfp-pacific.com

- **SIAMCHAI INTERNATIONAL FOOD CO., LTD.** – 73/3 Moo 2, Petkasem Road, Bangrin, A. Muang, RANONG 85000 THAILAND
  Tel.: 66-77-833861, 811889
  Fax: 66-77-821413, 824989
  E-mail: sifco@sifcogroup.com
  Web site: www.sifcogroup.com

- **SMILE HEART FOODS CO., LTD.** – 19/8 Moo 8, T. Bangkrachaw, A. Muang, SAMUTSAKORN 74000 THAILAND
  Tel.: 66-34-418042-3
  Fax: 66-34-845397
  E-mail: smilejai@ji-net.com
  Web site: www.aroymark.com

- **STARFOODS INDUSTRIES CO., LTD.** – 79/30 Moo 1, T. Bangtorud, A. Muang SAMUTSAKORN 74000 THAILAND
  Tel.: 66-34-839935-40
  Fax: 66-34-839739
- THAVEEVONG INDUSTRY CO., LTD. – 22 Soi Onnuch 62, Suanluang, BANGKOK 10250 THAILAND
  Tel.: 66-2-3226814-6
  Fax: 66-2-3202439
  E-mail: tavevong@tvico.th
  Web site: www.tvico.th

- WORLD MARINE FOODS CO., LTD. – 19/15 Moo 8, T. Bangrachaw, A. Muang, SAMUTSAKORN 74000 THAILAND
  Tel.: 66-34-462505-6
  Fax: 66-34-462507
  E-mail: jktlfth@cscoms.com

A8.3 : REPUBLIC OF KOREA

- BLUE-IS INC. – Room 12, 30F Technomart, 546-4 Kuui-Dong, Kwangjn-Gu, SEOUL, REPUBLIC OF KOREA
  Tel.: 82-2-419-755 (ref.)
  Fax: 82-2-419-9736
  E-mail: korea@blue-is.com
  Web site: www.blue-is.com

- HANSUNG ENTREPRISE CO., LTD. – 71, l Ga, Daegyo-Dong, Yeongdo-u, BUSAN, REPUBLIC OF KOREA
  Tel: 82-51-410-7064
  Fax: 82-51-410-7103-4
  E-mail: roadv@han-sung.co.kr
  Web site: www.han-sung.co.kr

- LG INTERNATIONAL CORP. – 20 Yoido-Dong, Youngdungpo-gu, SEOUL 150-721 REPUBLIC OF KOREA
  Tel.: 82-2-3773-1114
  Web site: www.lgicorp.com

- ORIENTAL PACIFIC SEAFOOD CORPORATION – Room 302, Keangnam Bldg. 163-16, Seongnae-Dong, Kangdong-Gu, SEOUL, REPUBLIC OF KOREA
  Tel.: 82-2-479-1880
  Fax: 82-2-479-0823
  E-mail: r-kang@opscorp.co.kr
  Web site: www.opscorp.co.kr

A8.4 : PEOPLE’S REPUBLIC OF CHINA

- DALIAN SHENGHUA SEAFOOD CO., LTD. – 2 Shuangxing Road, Jinzhou District, 116100 Dalian, LIAONING Province, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-411-87662783
  Fax: 86-411-87662762
  E-mail: lapuca72@yahoo.com.cn
  Web site: www.sh-seafood.com
- DALIAN YONMING FOOD CO., LTD. – Room 1602, Tianxing Roosevelt International Center, n°46 Ruyi Street, Sha Hekou District, 116021 Dalian, LIAONING Province, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-411-83898517
  Fax: 86-411-83898585
  E-mail: liming@yonming-food.com
  Web site: www.yonming-food.com

- DALIAN YOULIAN SEAFOOD CO., LTD. – n°678 Youyi Street, Jinzhou District, 116100 Dalian, LIAONING Province, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-411-87801471
  Fax: 86-411-87800333
  E-mail: jzyl@dlptt.ln.cn
  Web site: www.dl-youlian.com

- EAST CHINA SEAS CO., LTD. – Mega Hall, Bldg. n°5, 905 Xiang He Yuan Lu n°1, Dong Zhi Men Wai, 100028 Dong Cheng, BEIJING, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-1084407678
  Fax: 86-1084407705
  E-mail: zongbei@eastchinaseas.com
  Web site: www.eastchinaseas.com

- G & Q OCEAN FOOD COMPANY – QINGDAO, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-532-5936009
  Fax: 86-532-5936559
  E-mail: oceanfood@sohu.com

- JINJIANG FUHONG AQUATIC CO., LTD. – Fishery Quay of Shenhu Town, 352246 JINJIANG, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-595-88293788
  Fax: 86-595-88290566
  E-mail: ccs@fuhong.cn
  Web site: www.fuhong.cn

- LANGTAO_SHA INTERNATIONAL ENTERPRISE HOLDINGS CO., LTD. – HONG KONG, PEOPLE’S REPUBLIC OF CHINA
  E-mail: seafood@langtao.sha.com
  Web site: www.langtao.sha.com

- PARAGON SEAFOOD CO., LTD. – QINGDAO, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-532-5777147
  Fax: 86-532-5777148
  E-mail: rayliu@163169.net

- QINGDAO HAIFENG GROUP CO., LTD. – QINGDAO, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-532-2623585
  Fax: 86-532-2624821
  E-mail: jishan@haifengseafood.com
  Web site: www.haifengseafood.com

- QINGDAO KANGDA FOREIGN TRADE GROUP – QINGDAO, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-532-575 0980
  Fax: 86-532-576 5658
E-mail: qdzhangrenzhi@163.com
Web site: www.kangdagroup.com

- QINGDAO NEW CENTURY TRADING CO., LTD. – QINGDAO, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-532-2688833
  Fax: 86-532-2686842
  E-mail: samwyx@yahoo.com

- QINGDAO YILUFA GROUP CO., LTD. – Qingda Industrial Park Cheng Yang 266111 QINGDAO, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-532-87905688
  Fax: 86-532-87905333
  E-mail: yilufa@yilufa.com.cn
  Web: www.yilufa.com.cn

- SEAWAY SEAFOOD CO., LTD. – 14K Shuangniu Building, 281 Jianguo North Road 310003 Hangzhou, ZHEJIANG, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-571-87296183
  Fax: 86-571-87296173
  E-mail: shrimps@mail.hz.zj.cn

- SEOKWANG SEAFOOD TRADE COMPANY – DALIAN, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-411-761 6242
  Fax: 86-411-762 8152
  E-mail: seokwangcn@yahoo.com.cn
  Web site: seokwang.ta.st

- SHANDONG FENGHUA FOOD CO., LTD. – RIZHAO, PEOPLE’S REPUBLIC OF CHINA
  Tel: 86-633-2623788
  Fax: 86-633-2889668
  E-mail: fhfood@public.sd.cninfo.net
  Web site: www.fhfood.com

- XIAMEN SUNSHINE IMPORT & EXPORT CO., LTD. – XIAMEN, PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-592-6023768 (812)
  Fax: 86-592-6023217
  E-mail: syd@luzhongtai.com

- ZOUSHAN INDUSTRIAL CO., LTD. – Dagan Putuo Zoushan ZHEJIANG 316101 PEOPLE’S REPUBLIC OF CHINA
  Tel.: 86-580-3696849
  Fax: 86-580-3694048
  E-mail: xysz@mail.zaptt.zj.cn
  Web site: www.xingye-seafood.com.cn

A8.5 : INDIA

- AMAR COLD STORAGE – Jawar Naka, PORBANDAR 360575 INDIA
  Tel.: 2242502
  Fax: 2255519
**GADRE MARINE EXPORT** – 3298-A Mirkarwada 415612 Ratnagiri MAHARASHTRA, INDIA
Tel.: 91-2352232570
Fax: 91-2352232121
Web site: [www.gadremarine.com](http://www.gadremarine.com)

**HINDUSTAN LEVER LTD.** – Hindustan Lever House Industrial Estate 688534 AROOR, INDIA
Tel.: 91-478872049
Fax: 91-478873302
Web site: [www.hll.com](http://www.hll.com)

**HIRAVATI INTERNATIONAL P. LTD.** – APM, Mafco Yard, Sector 18, Navi MUMBAI 400705 INDIA

**NAIK FROZEN FOODS PVT. LTD.** – 408 INDIA, EMCA House, 289, SBS Road, 400038 Fort Mumbai, MAHARASHTRA, INDIA
Tel.: 91-022-22653052
Fax: 91-022-22631174
E-mail: naik9@vsnl.com

**A8.6 : VIET NAM**

**D&N FOOD PROCESSING CO., LTD.** – DANANG, VIET NAM
Tel.: 84-511-848 170
Fax: 84-511-848 230
E-mail: ngyanhuong@vnn.vn

**DIEP LE CO., LTD.** – 57/D6 Quoc Lo 13 Ward 26, Binh Thanh District, HO CHI MINH, VIET NAM
Tel.: 84-8-294 8895
Fax: 84-8-294 8894
E-mail: info@dieple.com
Web site: [www.diepleseafood.com](http://www.diepleseafood.com)

**HX INTERNATIONAL COMPANY** – 405/2 Xo Viet nghe Tinh, Ward24, Binhthanh District, HO CHI MINH, VIETNAM
Tel.: 84-8-5117828
Fax: 84-8-5117829
E-mail: hxinterseafood@gmail.com
Web site: [www.hxinterseafood.4t.com](http://www.hxinterseafood.4t.com)

**A8.7 : REPUBLIC OF CHINA**

**CHEN HSIANG FOODS INDUSTRIAL CO., LTD.** – 1-3 Chutsun Li, Pohtzu Chen, Chiayi Hsien, REPUBLIC OF CHINA
Tel.: (05) 3692211
Fax: (05) 3692692

**CHINCHI SHUN INDUSTRIAL CO., LTD.** – 236 Fengjen Road, fengshan City, Kaohsiung Hsien, REPUBLIC OF CHINA
Tel.: (07) 7420110
Fax: (07) 7425796

- **FORTUNE LIFE ENTERPRISE CO., LTD.** – 28 Huachung Road, Taliao Hsiang, Kaohsiung Hsien, REPUBLIC OF CHINA
  Tel.: (07) 7872736
  Fax: (07) 7872841

- **FUCHO FOODS CO., LTD.** – 6 Heshun Road, Chiatai Industrial Park, Taibao City, Chiayi, Hsien, REPUBLIC OF CHINA
  Tel.: (05) 2379366
  Fax: (05) 2379377

- **GOLD COINS ENTREPRISE CO., LTD.** – 651 Mintsu First Road, Kaohsiung, REPUBLIC OF CHINA
  Tel: (07) 3416301-5
  Fax: (07) 3416333-5

- **JINGLIHW A FOODS CO., LTD.** – 5 Shinta Road, Chienchen District, Kaohsiung, REPUBLIC OF CHINA

- **KASEI FROZEN FOODS WORKS CO., LTD.** – 135 Tingping Road, Juifang Town, Taipei Hsien, REPUBLIC OF CHINA
  Tel.: 886-2-2497-4151
  Fax: 886-2-2496-8308
  E-mail: arthus@kasei.com.tw

- **LAUREL ENTERPRISES CORP.** – 329, Section 2 Chungshan Road, Chungho City, Taipei Hsien, REPUBLIC OF CHINA
  Tel.: (02) 22401488
  Fax: (02) 22402364

- **SHIN HO SING OCEAN ENTERPRISE CO., LTD.** – 31 Fishing Harbour South 1st Road, Chien Chen District 806 Kaohsiung, REPUBLIC OF CHINA
  Tel.: 886-78316101
  Fax: 886-78114695
  E-mail: shs@shs.com.tw
  Web site: www.shs.com.tw

- **WANYANG FOOD CO., LTD.** – 186 Shinshiau Road, Tainan, REPUBLIC OF CHINA

---

**A8.8 : MALAYSIA**

- **QL FOODS SDN BHD.** – Lot 147, Jalan Tepi Sungai, 36400 Hutan Melintang, PERAK DARUL RIDZUAN, MALAYSIA
  Tel.: 605-641-4292/641 5805
  Fax: 605-641-2257
  E-mail: ql@tm.net.my
  Web site: http://qlfoods.asiaep.com/qlfood.htm

- **SEAPACK FOOD SDN BHD** – Plot 575, Prai FTZ, 13600 Prai, PENANG, MALAYSIA
  Tel.: 604-399-7306
  Fax: 604-399-7304
  E-mail: spkbiz@pd.jaring.my
  Web site: www.seapackfood.com
**A8.9 : CHILE**

- **PESQUERA EL GOLFO S.A.** – Colon 2400, 1-D Talcahuano, VIII Region, CHILE  
  Tel.: 41-269421  
  Fax: 41-58 8863  
  E-mail: sales@elgolfo.cl

- **PESQUERA SAN JOSE S.A.** – Av. El Bosque Norte 0440, Piso 10, 134 Correo 35, Las Condes, Santiago, Region Metropolita, CHILE  
  Tel.: 2-371 2600  
  Fax: 2-203 5001

**A8.10 : PERU**

- **ARCOPA** – Av. A n° 4041, MZA-F1 Zona Industrial, PAITA, PERU  
  Tel.: 51-73.61.14.00  
  Fax: 51-73.61.16.64  
  E-mail: arcopa2@mail.udep.edu.pe  
  Web site: www.adrien.fr

- **COINREFRI** – Av. La Marina 244, Pueblo Libre, LIMA 21 PERU  
  Tel.: 51-1-460-0405  
  Fax: 51-1-463-1375  
  E-mail: coinrefri@coinrefri.com  
  Web site: www.coinrefri.com

- **FREEKO PERU S.A.** – Carretera Paita Sullana Km. 3, Paita Paita PIURA PERU  
  Tel.: 74611853  
  Fax: 74611839

**A8.11 : UNITED STATES OF AMERICA**

**SURIMI**

- **AMERICAN SEAFOODS GROUP LLC** – Marketplace Tower, 2025 First Avenue, Suite 900 Seattle, WA 98121 USA  
  Tel.: 1-206-374 1515  
  Fax: 1-206-374 1516  
  Web site: www.americanseafoods.com

**SURIMI PRODUCTS**

- **HARBOR SEAFOOD** – 969 Lakeville Road, New Hyde Park, NY 11040 USA  
  Tel.: 1-800-645 2211  
  Web site: www.harborseafood.com

- **JANA BRANDS** – 17 Mercer Road, Natick, MA 01760 USA  
  Tel.: 1-508-620 0001  
  Fax: 1-508-651 3001  
  Web site: www.janabrands.com

- **PACIFIC GIANT INC.** – 732 S. Alameda Street, Los Angeles, CA 90021 USA  
  Tel.: 1-213-689 4000

113
NATIONAL FISH & SEAFOOD INC. – 11-15 Parker Street, Gloucester, MA 01930 USA
Tel.: 1-978-282 7880
Fax: 1-978-282 7882
E-mail: manager@nationalfish.com
Web site: www.nationalfish.com

NIPPON SUISAN USA – 15400 N.E. 90th Street, P.O. Box 97019, Redmond, WA 98073-9719 USA
Tel.: 1-425-869 1703
Web site: www.nissui.co.jp

OCEAN TO OCEAN SEAFOOD, LLC – 5714 Curlew Drive, Norfolk, VA 23502 USA
Tel.: 1-757-893 9200
Fax: 1-757-893 9227
Web site: www.oceantoocean.com

PACIFIC SEAFOOD GROUP
Tel.: 1-425-347 7994
E-mail: malony@pacseafood.com
Web site: www.pacseafood.com

SHINING OCEAN – 1515 Pluyallup Street, Sumner, WA 98390 USA
Tel.: 1-800-935 6464
Web site: www.kanimi.com

SUGIYO USA INC. – 3200 T Avenue, P.O. Box 468, Anacortes, WA 98221-0468 USA
Tel.: 1-360-293 0180
Fax: 1-360-293 6964
E-mail: sugusa@sugiyo.com
Web site: www.sugiyo.com

TRANS OCEAN PRODUCTS INC. – 350 West Orchard Drive, Bellingham, WA 98225 USA
Tel.: 1-800-290 2722
Fax: 1-360-671 0354
E-mail: lou@trans-ocean.com
Web site: www.trans-ocean.com

TRIDENT SEAFOODS CORPORATION – 5303 Shilshole Avenue N.W., Seattle, WA 98107 USA
Tel.: 1-206-783 3818
Fax: 1-206-782 7195
Web site: www.louiskemp.com
www.tridentseafood.com

ZALOOM MARKETING CORP. – 31 Schreiffer Street, So. Hackensack, NJ 07606 USA
Tel.: 1-201-488 3535
Fax: 1-201-488 8056
Web site: www.zaloommarketing.com

A8.12 : FAEROE ISLANDS
- P/F NAERABERG COMPANY – P.O. Box 179, Faktorsvegur 4 700 Klaksvick, FAEROE ISLANDS

A8.13 : NORWAY

- AKER SEAFOODS ASA – Fjordalleen 16, P.O. Box 1301, Vika 0112, OSLO, NORWAY
  Tel.: 47-24-13-01-60
  Fax: 47-24-13-01-61
  Web site: www.akerseafoods.com

A8.14 : FRANCE

IMPORTERS

- ABALONE SARL – Rue Henri Becquerel, BP 525 77295 Mitry Mory Cedex FRANCE
  Tel.: 01 64 67 22 99
  Fax: 01 64 67 18 41
  Web site: www.activ.fr

- ATKA – 18 Rue Charles de Gaulle, 91400 Orsay, FRANCE
  Tel.: 01 69 86 96 97
  Fax: 01 69 86 90 66
  E-mail : jean.atka.seafood@wanadoo.fr

- ATLANTIC SEAFOOD INGREDIENTS – 10 Av. Ferdinand Menard, BP 106, 44502 La Baule Cedex FRANCE
  Tel.: 02 52 75 13 13
  Fax: 02 51 75 13 14
  E-mail: atlantic@atlantic-seafood.fr

- CONIC – 3 Rue Faubourg St. Honore, 75008 Paris FRANCE
  Tel.: 01 44 51 16 06
  Fax: 01 44 51 16 09
  E-mail: conic4@wanadoo.fr

- CS FRANCE – 17 Rue Albert Lavocat, 62200 Boulogne sur Mer, FRANCE
  Tel.: 03 21 10 32 70
  Fax: 03 21 80 46 10
  E-mail: ilw@csfrance.fr

- FJORD IMPORT – Residence la Clarite, 88/100 Route de Paris 62222 Saint Martin Boulogne, FRANCE
  Tel.: 03 21 99 15 99
  Fax: 03 21 83 59 24
  E-mail: c.mazurier@fjordimport.fr

- FUTUR SEAFOOD EUROPE – 11 bis Rue de Moscou, 75008 Paris, FRANCE
  Tel.: 01 42 40 38 33
  Fax: 01 72 72 95 72
  E-mail: future-seafood@wanadoo.fr

- INTERPRAL SA – 336 Rue St. Honore, 75001 Paris, FRANCE
SURIMI AND SURIMI PRODUCTS

- **CAPITAINE COOK SA** – Keranna, 29360 Clohars Carnoet, FRANCE
  Tel.: 02 98 71 68 00
  Fax: 02 98 71 68 30

- **CHARLES AMAND SA** – ZI de la Crochère, Route de Banvou, 61100 Flers, FRANCE
  Tel.: 02 33 62 45 00
  Fax: 02 33 62 45 19
  E-mail: slegrand@charles-amand.com

- **CUISIMER** – Route de Blactot, 50500 Carentan, FRANCE
  Tel.: 02 33 42 73 00
  Fax: 02 33 42 29 81
  E-mail: cuisimer@wanadoo.fr
  Web site: www.coraya.com

- **COMPAGNIE DES PECHEUSES DE SAINT MALO** – 40, Quai Duguay Trouin, 35406 Saint Malo Cedex, FRANCE
  Tel.: 02 99 20 51 48
  Fax: 02 99 56 21 92
  E-mail: commercial@cie-peches-saintmalo.com

- **FLEURY MICHON TRATEUR** – Route de la Gare, BP 1, 85700 Pouzauges, FRANCE
  Tel.: 02 51 66 32 32
  Fax: 02 51 65 82 33
  Web site: www.fleurymichon.fr

- **GROUPE ADRIEN** – Aeropole, Im. 1, Rue Charles Lindbergh, 44346 Bouguenais Cedex, FRANCE
  Tel.: 02 40 05 25 01
  Fax: 02 40 05 18 82
  E-mail: communication@adrien.fr
  Web site: www.adrien.fr

- **MERALLIANCE** – 55 Avenue de Keradennec, 29556 Quimper Cedex 9, FRANCE
  Tel.: 02 98 64 72 72
  Fax: 02 98 64 72 20
  E-mail: contact@armoric.com
  Web site: www.armoric.com

- **PROTIMER** – Avenue de Verdun, BP 23, 17230 Marans, FRANCE
  Tel.: 05 46 35 10 01
  Fax: 05 46 35 10 42
  Web site: www.protimer.fr
A8.14 : SPAIN

- **ANGULAS AGUINAGA SA** – Laskibar 5, E-20271, Irubia-Guipuzcoa, SPAIN
  Tel.: 34-902 495 000
  Fax: 34-943 693 112
  E-mail: exporta@angulas-aguinaga.es
  Web site: www.angulas-aguinaga.es

- **ANGULAS MAYOZ** – Cl Toki-Berri s/n, 20170 Aguinaga Guipuzcoa, SPAIN
  Tel.: 34-943 361 594

- **EL ANGULERO DE AGUINAGA** – Casa Irurak-Bat, 20170 Aguinaga Guipúzcoa, SPAIN
  Tel: 34-943 366 345
  Fax: 34-943 366 698
  Web site: www.angulero.com

- **GEDESCO SA** – Avda de la Ferreiria 59-71, Pol. Ind. La Ferreiria, 08110 Montcada Reixac, SPAIN
  Tel.: 34-935 753 032
  Fax: 34-935 753 469
  E-mail: export@maheso.com

- **IBERICA DE CONGELADOS SA (IBERCONSA)** – Muelle Comercial de Bouzas, 36208 Vigo, SPAIN
  Tel.: 34-986 213 300
  Fax: 34-986 204 669
  E-mail: iberconsa@iberconsa.es
  Web site: www.iberconsa.es

- **INTERALIMENT SA** – ZI Del Congost, Cani de Can Pla, 7, 08170 Montornes Del Valles, SPAIN
  Tel.: 34-938 642 900
  Fax: 34-938 642 901
  E-mail: info@interaliment.com
  Web site: www.interaliment.com

- **KRUSTAGROUP S.A.U.** – Fundidores, 47, Polígono Ind. Los Angeles, 28906 Getafe Madrid, SPAIN
  Tel.: 34-916 831 920
  Fax: 34-916 818 113
  E-mail: informa@krustagroup.com
  Web site: www.krustagroup.com

- **MULTI PROSUR SA** – Manzana 3, Mercasantander, B San Martin s/n, 39011 Santander, SPAIN
  Tel.: 34-942 35 46 60
  Fax: 34-942 34 45 66
  E-mail: surimi@multi-prosur.com
  Web site: www.multiprosur.com

- **PESCANOVA SA** – Rua Jose Fernandez Lopez s/n, E-36320 Chapela-Redondella, SPAIN
  Tel.: 34-986 818 168
  Fax: 34-986 818 301
  E-mail: impex@pescanova.es
  Web site: www.pescanova.es
A8.15 : ITALY

SURIMI PROCESSORS

- **FIDECO SPA** – Loc. Bonifica del Salinillo, I-64018 Tortoreto, TERAMO, ITALY
  Tel.: 39-2726 0541
  Fax: 39-2869 96351
  E-mail: abenatoff@fidescopa.com

SURIMI PRODUCTS IMPORTERS

- **DINON SRL** – 110 Via del Celso, I-45014 Porto Viro, ROVIGO, ITALY
  Tel.: 39-42 663 18 20
  Fax: 39-42 663 12 32
  E-mail: dinon@dinon.com
  Web site: www.dinon.com

- **ESCA SRL** – Via Piane Tronto, I-64010 CONTROGUERRA, ITALY
  Tel.: 39-861 809 921
  Fax: 39-861 709 946

- **FJORD SPA** – Via per Cassano Magnago 120, I-21052 BUSTO ARSIZIO, ITALY
  Tel.: 39-331 681 155
  Fax: 39-331 686 353
  E-mail: apellin@salmoncompany.com
  Web site: www.saloncompany.com

- **ICA INDUSTRIA CONSERVAZIONI ALIMENTARI** – Via dei Materassai, I-57121 LIVORNO, ITALY
  Tel.: 39-586 400 141
  Fax: 39-586 428 031

- **MEDUSA** – Cesare Regnoli & Figlio SRL – Piazza San Francesco 10, I-40122 BOLOGNA, ITALY
  Tel.: 39-51 222 483
  Fax: 39-51 269 938
  E-mail: info@regnoli.it
  Web: www.medusa.info

A8.16 : LITHUANIA

- **VICIUNAI GROUP** – V. Kreves pr. 97 LT-50369 Kaunas, LITHUANIA
  Tel.: 370-3731 4484
  Fax: 370-3731 083
  E-mail: vici@vici.lt
  Web site: www.vici.lt

A8.17 : UNITED KINGDOM

- **JOHN KOCH LTD** – N°1 Billingsgate Market, Trafalgar Way, London E145TG, UK
  Tel.: 0207 531 5920
  Fax: 0207 531 5925
  Web site: www.ocean-catch.co.uk
- **LYONS SEAFOODS** – P.O. Box 2455, Warminster, Wiltshire, BA 12 9XZ, UK
  Tel.: 44 (0) 1985 224 300
  E-mail: sales@lyons-seafoods.com
  Web site: www.lyons-seafoods.com

- **MACRAE HULL** – Walcott Street, Hull East Yorkshire HU3 4AZ, UK
  Tel.: 44 (0) 1482 227 463
  Fax: 44 (0) 1482 218 0921
  E-mail: info@macrae.co.uk
  Web site: www.macrae.co.uk

- **SCO-FRO FOODS LTD.** – 229 St. Vincent Street, Glasgow G25QY SCOTLAND, UK
  Tel: 44 (0) 141 223 7711
  Fax: 44 (0) 141 221 7524
  E-mail: seafood@scofro.com
  Web site: www.scofro.com

- **SEA PRODUCTS INTERNATIONAL LTD.** – Ocean House, Wholesale Markets Precinct, Pershore Street, Birmingham B56UU, UK
  Tel.: 44 (0) 121 622 5111
  Fax: 44 (0) 121 622 6123
  E-mail: info@seaproductsint.com
  Web site: www.seaproductsint.com

**A8.18 : BELGIUM**

- **HOTTLET FROZEN FOODS** – Heiveldekens 4, B-2550 Kontich, BELGIUM
  Tel.: 32-3 451 31 31
  Fax: 32-3 451 31 30
  E-mail: info@hottlet.be
  Web site: www.hottlet.com

- **SEAFOOD INTERNATIONAL TRADERS SA** – Kattestraat 35, 3272 Testelt, BELGIUM
  Tel: 32 (0) 13 77 10 78
  Fax: 32 (0) 13 77 76 46
  E-mail: sit@fanticrab.be
  Web site: www.fanticrab.be

- **VICIUNAI EUROPE** – Krakeleweg 39 8000 Brugge, BELGIUM
  Tel.: 32-50 397 848
  Fax: 32-50 397 825
  E-mail: info@viciunai.be

**A8.19 : LATVIA**

- **MARLEX LTD** – Mans Bakanovskis Surimi, Mucenieki, LV 2106 Ropazu Village Riga Region, LATVIA
  Tel.: 371-7113746
  Fax: 371-7113685
  E-mail: marlex@marlex.lv
  Web site: www.marlex.lv
Vol. 65  Effect of World Trade Organization’s Regulation on World Fish Trade (87p.) Mar 2000 30
Vol. 66  European Union Standards for Fishery Products (including EU duties) (248p.) June 2000 30
Vol. 67  The Ornamental Fish Market (91p.) Oct 2000 30
Vol. 68  The World Market for Frog Legs (44p.) June 2001 30
Vol. 69  Fishery Industry Profile – Thailand (76p.) Nov 2001 30
Vol. 70  The Fishery Industry in Greece (59p.) Nov 2001 30
Vol. 71  The German Market for Fish and Seafood (116p.) Jan 2002 30
Vol. 72  Fish Roe in Europe: Supply and Demand Conditions (47p.) Nov 2002 30
Vol. 73  Salmon – A Study of Global Supply and Demand (151p.) July 2003 30
Vol. 74  World Tuna markets (135p.) May 2004 30
Vol. 75  Fishery Industry Profile – Viet Nam (57p.) July 2004 30
Vol. 76  Fishery Industry in China (74p.) Sept 2004 30
Vol. 78  Seafood Price Indices (44p.) Apr 2005 30
Vol. 79  World Market of Tilapia (28p.) Apr 2005 20
Vol. 80  Fishery Industry Profile – Russia (70p.) June 2005 30
Vol. 81  Trends in European Groundfish Markets (153p.) Nov 2005 50
Vol. 82  Freshwater Species on the European Market (119p.) Dec 2005 30
Vol. 83  Fish Supply and Demand in the Near East Region (67p.) Jan 2006 30
Vol. 84  The Market for Nile Perch (94p.) Apr 2006 30
Vol. 85  Supermarkets and the Artisanal Fisheries Sector in Latin America (79p.) Apr 2006 30
Vol. 87  Lobster Markets (92p.) Oct 2006 30
Vol. 88  Republic of Korea – Fishery Industry Profile (Post Harvest Sector) (72p.) Nov 2006 30
Vol. 89  World Surimi Market (125p.) Apr 2007 30

1) Prices include air mail delivery

ORDER FORM

COPYES ARE AVAILABLE FROM:

FAO GLOBEFISH - Fish Utilization and Marketing Service, Fishery Industries Division
Viale delle Terme di Caracalla, 00100 Rome, Italy
Tel.: (39-06)570 55074 - Fax: (39-06) 570 55188 - E-mail: GLOBEFISH@fao.org – http://www.globefish.org

20% DISCOUNT IS OFFERED ON ORDERS FOR MORE THAN TWO COPIES

I would like to order _____ copy(ies) of those volume number(s) as indicated above for a total of € _______

☐ By bank cheque/draft in €___________ payable to GLOBEFISH (see address above)

☐ By credit card:
Card No.: _____________________________  ☐ Diners/Visa  ☐ Euro/Master Card  ☐ American Express
Expiry date: _____________________________  Signature: _____________________________


Name: _____________________________  Company: _____________________________

Street Address: __________________________________________________________________________________________

City and Postcode: _____________________________  Country: _____________________________

Tel: _____________________________  Fax: _____________________________  E-mail: _____________________________
Trends in European Groundfish Markets