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World Surimi Market

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by

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WORLD SURIMI MARKET

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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 is 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?"

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TABLE OF CONTENT

1.	INTRODUCTION	1
2.	THE PRODUCTION OF SURIMI.....	1
2.1.	Surimi world production: general overview	1
2.1.1.	<i>Technology: principal aspects</i>	1
2.1.2.	<i>Raw materials: main species and new ones</i>	2
2.1.3.	<i>Surimi grade system</i>	3
2.1.4.	<i>World surimi production</i>	4
2.1.5.	<i>Surimi trade</i>	7
2.2.	Japan.....	10
2.2.1.	<i>Characteristics of production</i>	10
2.2.2.	<i>Raw material</i>	10
2.2.3.	<i>Surimi trade</i>	10
2.2.4.	<i>Frozen surimi market prices</i>	13
2.2.5.	<i>Main actors</i>	17
2.2.6.	<i>Current and future developments</i>	17
2.3.	United States of America	17
2.3.1.	<i>Characteristics of production</i>	17
2.3.2.	<i>Raw material</i>	18
2.3.3.	<i>Surimi trade</i>	19
2.3.4.	<i>Main actors</i>	20
2.3.5.	<i>Current and future developments</i>	21
2.4.	Thailand.....	21
2.4.1.	<i>Main characteristics of production</i>	21
2.4.2.	<i>Raw materials</i>	21
2.4.3.	<i>Surimi trade</i>	22
2.4.4.	<i>Main actors</i>	25
2.4.5.	<i>Current and future developments</i>	25
2.5.	People's Republic of China.....	25
2.5.1.	<i>Main characteristics of production</i>	25
2.5.2.	<i>Raw materials</i>	26
2.5.3.	<i>Surimi trade</i>	26
2.5.4.	<i>Main actors</i>	27
2.5.5.	<i>Current and future developments</i>	27
2.6.	Viet Nam	27
2.6.1.	<i>Main characteristics of production</i>	27
2.6.2.	<i>Raw materials</i>	28
2.6.3.	<i>Surimi trade</i>	28
2.6.4.	<i>Main actors</i>	28
2.6.5.	<i>Current and future developments</i>	28
2.7.	India.....	28
2.7.1.	<i>Main characteristics of production</i>	28
2.7.2.	<i>Raw materials</i>	28
2.7.3.	<i>Surimi trade</i>	28
2.7.4.	<i>Main actors</i>	29
2.7.5.	<i>Current and future developments</i>	29
2.8.	Chile	29
2.8.1.	<i>Main characteristics of production</i>	29
2.8.2.	<i>Raw materials</i>	29

2.8.3.	<i>Surimi trade</i>	30
2.8.4.	<i>Main actors</i>	30
2.8.5.	<i>Current and future developments</i>	30
2.9.	Argentina.....	30
2.9.1.	<i>Main characteristics of production</i>	30
2.9.2.	<i>Raw materials</i>	31
2.9.3.	<i>Surimi trade</i>	31
2.9.4.	<i>Main actors</i>	31
2.9.5.	<i>Current and future developments</i>	31
2.10.	Faeroe Islands.....	31
2.10.1.	<i>Main characteristics of production</i>	31
2.10.2.	<i>Raw materials</i>	32
2.10.3.	<i>Surimi trade</i>	32
2.10.4.	<i>Main actors</i>	32
2.10.5.	<i>Current and future developments</i>	32
2.11.	European Union	32
2.11.1.	<i>Main characteristics</i>	32
2.11.2.	<i>France</i>	36
2.12.	Other surimi producers.....	37
2.12.1.	<i>Peru</i>	37
2.12.2.	<i>Republic of Korea</i>	38
2.12.3.	<i>Malaysia</i>	40
2.12.4.	<i>Indonesia</i>	40
3.	SURIMI-BASED PRODUCTS: PRODUCTION AND MARKETS	41
3.1.	World: general outlines	41
3.1.1.	<i>Production of surimi-based products</i>	41
3.1.2.	<i>Main producing countries</i>	41
3.1.3.	<i>Main markets</i>	41
3.1.4.	<i>Surimi products trade</i>	42
3.1.5.	<i>European Union trade barriers</i>	42
3.2.	Japan.....	42
3.2.1.	<i>National production</i>	42
3.2.2.	<i>Surimi products trade</i>	43
3.2.3.	<i>Consumption trends</i>	43
3.2.4.	<i>Main actors</i>	46
3.2.5.	<i>Current and future developments</i>	46
3.3.	Republic of Korea	47
3.3.1.	<i>National production</i>	47
3.3.2.	<i>Surimi products trade</i>	48
3.3.3.	<i>Consumption trends</i>	49
3.3.4.	<i>Main actors</i>	49
3.3.5.	<i>Current and future development</i>	50
3.4.	Thailand.....	50
3.4.1.	<i>National production</i>	50
3.4.2.	<i>Surimi products trade</i>	50
3.4.3.	<i>Consumption trends</i>	51
3.4.4.	<i>Main actors</i>	51
3.4.5.	<i>Current and future development</i>	52
3.5.	People's Republic of China.....	52
3.5.1.	<i>National production</i>	52
3.5.2.	<i>Surimi products trade</i>	52

3.5.3.	<i>Consumption trends</i>	52
3.5.4.	<i>Main actors</i>	53
3.5.5.	<i>Current and future development</i>	53
3.6.	Other Asian countries.....	53
3.6.1.	<i>Malaysia</i>	53
3.6.2.	<i>Republic of China</i>	53
3.6.3.	<i>India</i>	53
3.7.	European Union overall	54
3.8.	France.....	58
3.8.1.	<i>National production</i>	58
3.8.2.	<i>Surimi products trade</i>	58
3.8.3.	<i>Consumption trends</i>	60
3.8.4.	<i>Main actors</i>	63
3.8.5.	<i>Current and future developments</i>	64
3.9.	Spain.....	64
3.9.1.	<i>National production</i>	64
3.9.2.	<i>Surimi products trade</i>	66
3.9.3.	<i>Consumption trends</i>	67
3.9.4.	<i>Main actors</i>	68
3.9.5.	<i>Current and future developments</i>	69
3.10.	Lithuania	69
3.10.1.	<i>National production</i>	69
3.10.2.	<i>Surimi products trade</i>	70
3.10.3.	<i>Main actors</i>	72
3.10.4.	<i>Current and future developments</i>	73
3.11.	Italy	73
3.11.1.	<i>National production</i>	73
3.11.2.	<i>Surimi products trade</i>	74
3.11.3.	<i>Consumption trends</i>	75
3.11.4.	<i>Main actors</i>	75
3.11.5.	<i>Current and future developments</i>	76
3.12.	United Kingdom.....	76
3.12.1.	<i>National production</i>	76
3.12.2.	<i>Surimi products trade</i>	76
3.12.3.	<i>Consumption trends</i>	77
3.12.4.	<i>Main actors</i>	78
3.12.5.	<i>Current and future developments</i>	78
3.13.	Other European countries.....	78
3.14.	United States of America	79
3.14.1.	<i>National production</i>	79
3.14.2.	<i>Surimi products trade</i>	79
3.14.3.	<i>Consumption trends</i>	80
3.14.4.	<i>Main actors</i>	80
3.14.5.	<i>Current and future developments</i>	81
3.15.	South America countries	82
3.15.1.	<i>Uruguay</i>	82
3.15.2.	<i>Mexico</i>	82
3.15.3.	<i>Brazil</i>	82

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
A8.14 : SPAIN	117
A8.15 : ITALY.....	119
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.

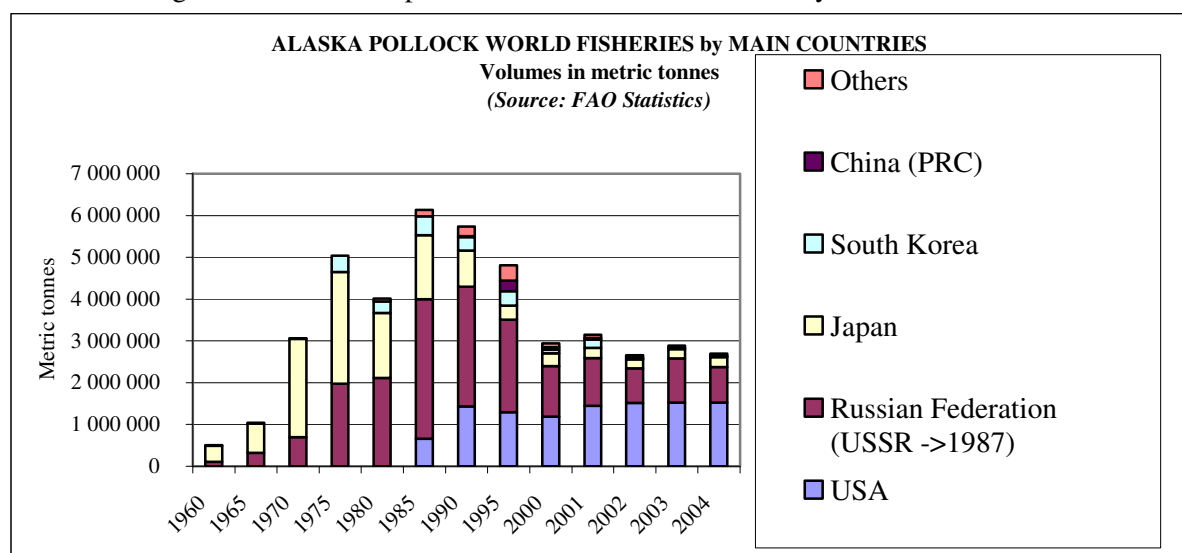
2.1.2. Raw materials: main species and new ones

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

ALASKA POLLOCK WORLD FISHERIES BY MAIN COUNTRIES											
Volumes in metric tonnes											
(Source: FAO Statistics)											
Country	1960	1965	1970	1975	1980	1985	1990	1995	2000	2001	2002
USA					1 409	656 446	1432 190	1293 939	1182 438	1442 170	1515 515
Russian Federation (USSR ->1987)	109 200	324 700	697 000	1975 000	2111 000	3343 034	2863 937	2208 410	1215 065	1145 016	826 707
Japan	379 800	690 900	2346 700	2677 360	1552 429	1533 179	871 408	338 507	300 001	241 881	213 254
South Korea	16 500	26 700	13 400	387 801	286 158	451 305	321 496	354 888	86 143	197 396	24 772
China (PRC)							20 000	249 459	60 338	39 665	11 000
Others					69 004	148 036	226 969	363 797	94 015	77 872	62 752
TOTAL	505 500	1042 300	3057 100	5040 161	4020 000	6132 000	5736 000	4809 000	2938 000	3144 000	2654 000

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 melanostichus*),
- northern blue whiting (*Micromesistius poutassou*),
- southern blue whiting (*Micromesistius australis*),
- Peruvian anchovy, white anchovy, American grondin (*Prionotus stephanoprys*), bereche (*Larimus pacificus*), chiri (*Peprius medius*), barracuda, sea eel and sole.

Even non-fish species such as giant squid (*Dosidicus gigas*) are now used. Producers are now beginning to examine 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.

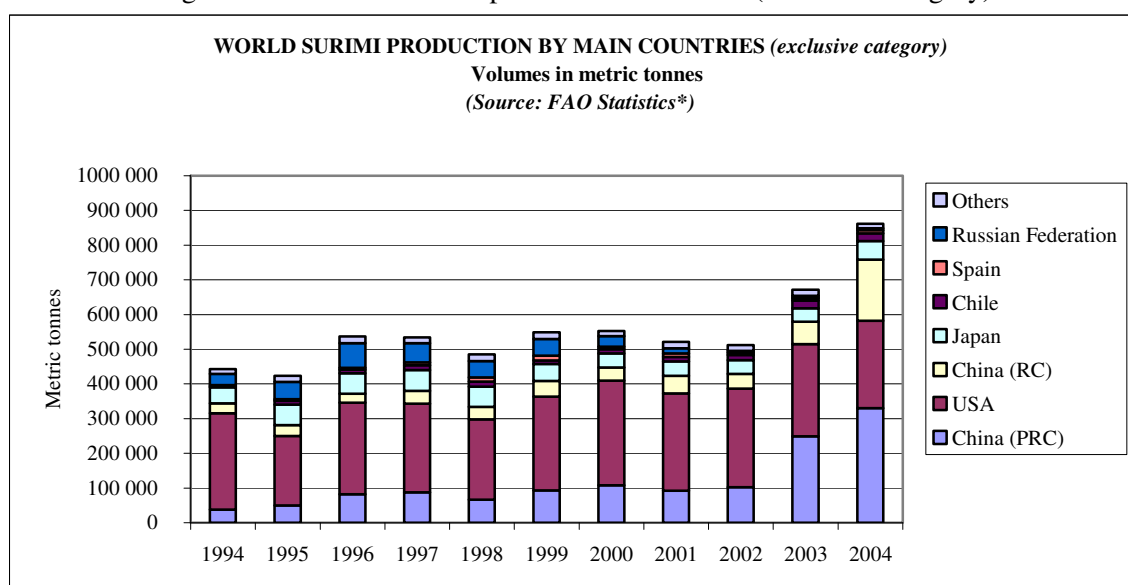
According to FAO statistics, surimi has a single, exclusive category: 'fish minced (= surimi), frozen' (Table 2.1-2 and Figure 2.1-2). This category includes all American surimi production but excludes, for instance, production from Thailand, France and other countries.

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

WORLD SURIMI PRODUCTION BY MAIN COUNTRIES (exclusive category)											Volumes in metric tonnes
(Source: FAO Statistics*)											
Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
China (PRC)	37 652	49 813	82 364	87 496	66 403	93 189	107 720	92 236	102 426	248 856	329 808
USA	278 233	200 006	263 790	255 824	231 669	269 824	302 323	280 150	284 157	265 552	252 479
China (RC)	28 535	31 500	25 259	36 417	36 071	45 972	36 928	50 959	42 106	64 877	176 202
Japan	45 968	59 316	59 533	60 471	57 620	48 523	40 654	41 153	39 987	38 491	53 231
Chile	2 811	11 218	10 072	13 913	15 190	10 590	12 470	13 282	14 673	22 504	21 778
Spain	3 479	4 321	5 263	7 820	12 146	13 432	7 220	9 821	6 113	7 377	9 593
Russian Federation	32 250	49 720	71 070	55 570	46 899	48 380	30 444	15 090	6 281	6 403	5 451
Others	14 270	17 155	19 367	16 174	19 689	18 753	15 006	18 281	16 354	17 086	12 819
TOTAL	443 198	423 049	536 718	533 685	485 687	548 663	552 765	520 972	512 097	671 146	861 361

(* Include only 'fish minced (= surimi) frozen' category.)

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



(* Include only 'fish minced (= surimi) frozen' category.)

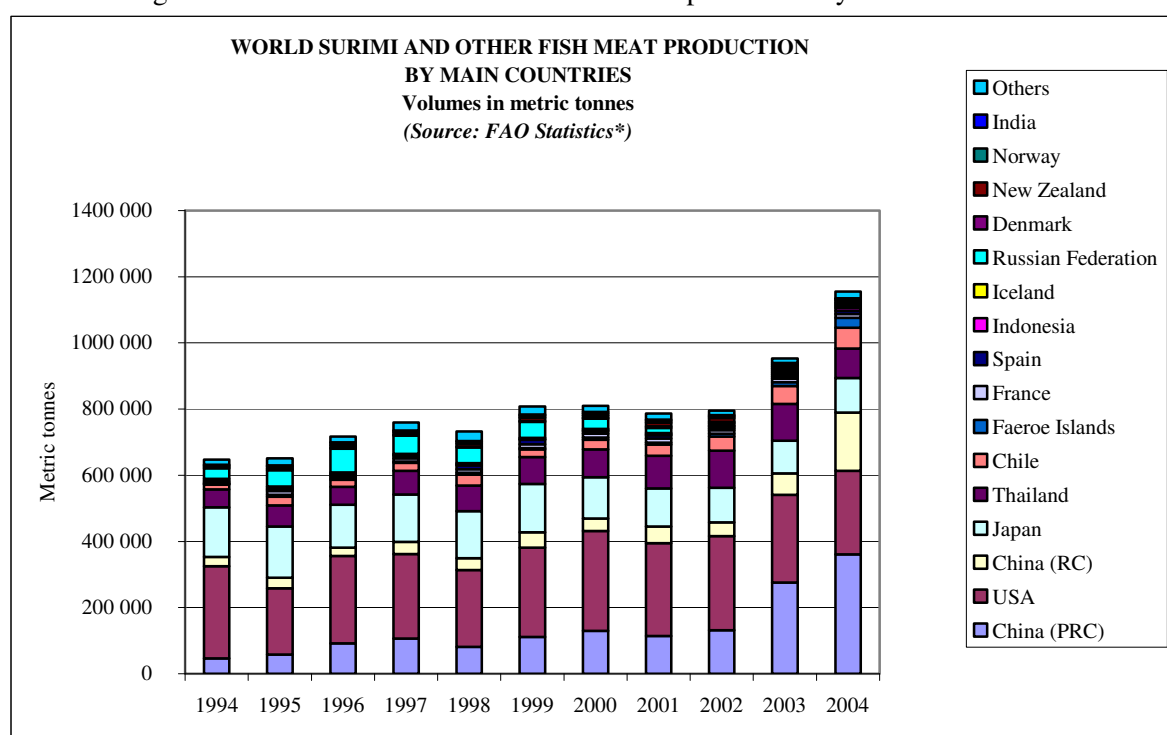
To 'capture' the total production for the countries, it is necessary also to include other categories of frozen fish meat: 'hake minced, frozen', 'saithe (= pollock) minced, frozen', 'cod minced, frozen', 'fish meat, whether or not minced, frozen, nei', 'fish meat, whether or not minced, fresh, chilled, 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

WORLD SURIMI AND OTHER FISH MEAT PRODUCTION BY MAIN COUNTRIES											
(Source: FAO Statistics*)											
Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
China (PRC)	46 810	58 526	92 366	106 003	81 601	111 603	129 650	114 422	131 722	275 381	361 242
USA	278 233	200 006	263 790	255 824	231 669	269 824	302 323	280 150	284 157	265 552	252 479
China (RC)	28 535	31 500	25 259	36 417	36 071	45 972	36 928	50 959	42 106	64 877	176 202
Japan	149 304	154 554	129 086	143 623	141 816	145 936	125 162	114 412	104 435	98 712	103 918
Thailand	54 000	64 000	55 000	72 000	77 500	82 000	84 062	98 695	112 344	110 683	89 501
Chile	14 756	26 377	20 958	24 193	33 220	22 902	28 654	34 003	41 829	54 813	62 873
Faeroe Islands	2 329	5 430	3 908	3 567	5 630	3 936	6 987	6 266	8 655	11 318	30 000
France	607	11 808	6 066	9 685	10 341	11 349	12 000	11 981	10 559	10 242	10 943
Spain	3 479	4 321	5 263	7 820	12 146	13 432	7 220	9 821	6 113	7 377	9 593
Indonesia	4 355	4 450	3 166	2 170	2 781	2 173	2 910	3 073	5 054	5 426	9 563
Iceland	6 775	4 599	4 055	3 434	4 138	4 196	4 573	4 180	4 288	4 940	5 621
Russian Federation	32 250	49 720	71 070	55 570	46 899	48 380	30 444	15 090	6 281	6 403	5 451
Denmark	3 297	4 078	3 486	2 405	3 219	2 876	2 666	5 024	4 313	6 616	5 363
New Zealand	4 236	6 674	7 028	6 884	8 722	9 878	7 565	10 935	10 906	6 054	5 138
Norway	2 900	3 774	8 280	4 992	5 890	5 040	5 900	5 110	5 021	5 000	5 000
India	222	342	738	629	2 092	3 901	4 197	3 816	3 642	5 830	2 100
Others	14 905	21 421	17 498	24 137	28 327	24 663	18 427	18 818	13 878	13 519	20 431
TOTAL	646 993	651 580	717 017	759 353	732 062	808 061	809 668	786 755	795 303	952 743	1155 418

(* 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 2.1-3: World surimi and other fish meat production by main 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'.)

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

COMPARISON OF PRODUCTION ESTIMATES OF BOTH SINGLE CATEGORY AND MULTIPLE CATEGORY SURIMI IN 2004		
Country	FAO 2004 statistics for exclusive category 'fish minced, frozen' in metric tonnes	FAO 2004 statistics for multiple categories in metric tonnes
USA	252 479	252 479
Thailand	–	89 501
Japan	53 231	103 918
China (PRC)	329 808	361 242
Viet Nam	–	–
India	–	2 100
Chile	21 778	62 873
Argentina	–	–
Faeroe Islands	–	30 000
France	400	10 943
Peru	–	–
Malaysia	950	–
Indonesia	–	9 563
Myanmar	–	–
China (RC)	176 202	176 202
South Korea	50	850
Spain	9 593	9 593
Russian Federation	5 451	6 403
Others	11 419	39 751
TOTAL	861 361	1 155 418

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

STUDY PROPOSED ESTIMATE OF SURIMI PRODUCTION		
Country	Production estimate (in metric tonnes)	Information source
USA	250 000	USA and FAO statistics
Thailand	140 000	Surimi School estimate
Japan	100 000	Japan and FAO statistics
China (PRC)	80 000	Surimi School estimate
Viet Nam	50 000	Surimi School estimate
India	35 000	Surimi School estimate
Argentina	30 000	Surimi School estimate
Chile	18 000	Surimi School and Chilean statistics
Faeroe Islands	15 000	Shipowner's announcement
France	5 000	Producer
Malaysia	8 000	Surimi School estimate
Peru	5 000	Estimate based on producer capacity
Indonesia	4 000	Surimi School estimate
Myanmar	3 000	Surimi School estimate
Others	7 000	To take into account miscellaneous countries
TOTAL	750 000	

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.

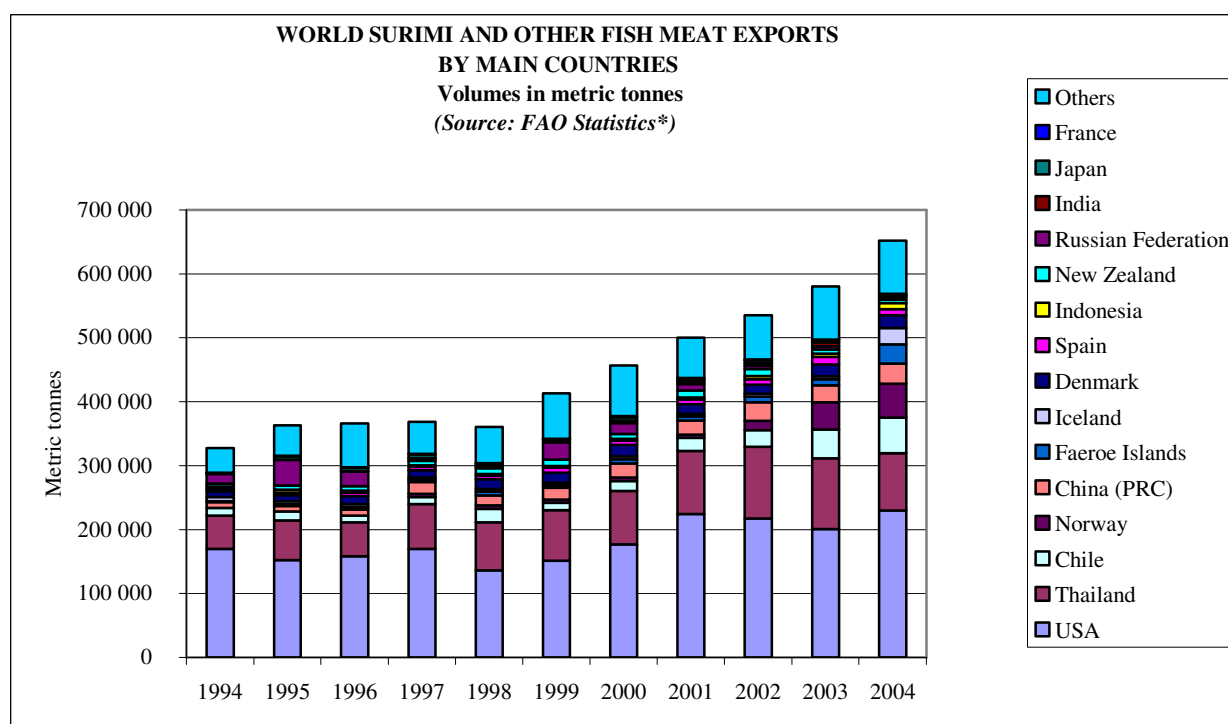
In summary, the needs of various European countries are growing at a remarkable rate.

Table 2.1-6: surimi exporting countries

Table 2.1.6. Surimi exporting countries											
WORLD SURIMI AND OTHER FISH MEAT EXPORTS BY MAIN COUNTRIES							Volumes in metric tonnes				
(Source: FAO Statistics*)											
Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
USA	169 937	152 037	158 277	169 801	136 154	151 329	176 548	224 343	217 283	200 982	229 987
Thailand	51 886	62 161	52 829	70 028	75 238	79 187	84 062	98 695	112 325	110 629	89 492
Chile	12 034	14 112	10 534	11 135	20 757	11 271	15 085	20 429	26 000	45 091	55 672
Norway				4 992	5 886	5 038	5 896	5 104	14 325	42 350	53 044
China (PRC)	9 158	8 713	9 732	18 507	15 198	18 414	21 930	22 186	29 296	26 525	31 434
Faeroe Islands	1 176	2 764	3 895	3 676	5 930	4 099	6 476	6 266	8 655	9 300	29 955
Iceland	6 775	4 599	4 542	3 434	4 138	4 196	4 573	4 180	4 645	4 941	25 728
Denmark	8 462	9 342	12 766	11 586	15 814	15 620	17 853	15 024	13 899	18 425	19 940
Spain	3 839	4 097	5 223	5 293	5 065	8 003	6 723	7 450	8 868	11 734	9 685
Indonesia	4 355	4 450	3 166	2 170	2 781	2 173	2 910	3 073	5 054	5 426	9 563
New Zealand	4 236	6 674	7 028	6 690	8 722	9 878	7 578	10 979	10 973	6 119	5 138
Russian Federation	15 043	39 988	22 915	3 975	3 482	27 147	16 948	9 920	4 950	5 252	3 501
India	222	342	738	629	2 092	3 901	4 197	3 816	3 642	5 822	2 100
Japan	1 324	5 067	4 648	5 415	1 724	888	4 552	3 749	4 966	3 420	1 839
France	648	1 145	906	883	1 152	707	2 397	2 138	1 493	1 121	1 694
Others	38 212	47 656	68 864	50 374	56 537	71 173	78 861	63 032	69 139	83 185	83 123
TOTAL	327 307	363 147	366 063	368 588	360 670	413 024	456 589	500 384	535 513	580 322	651 895

(* 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



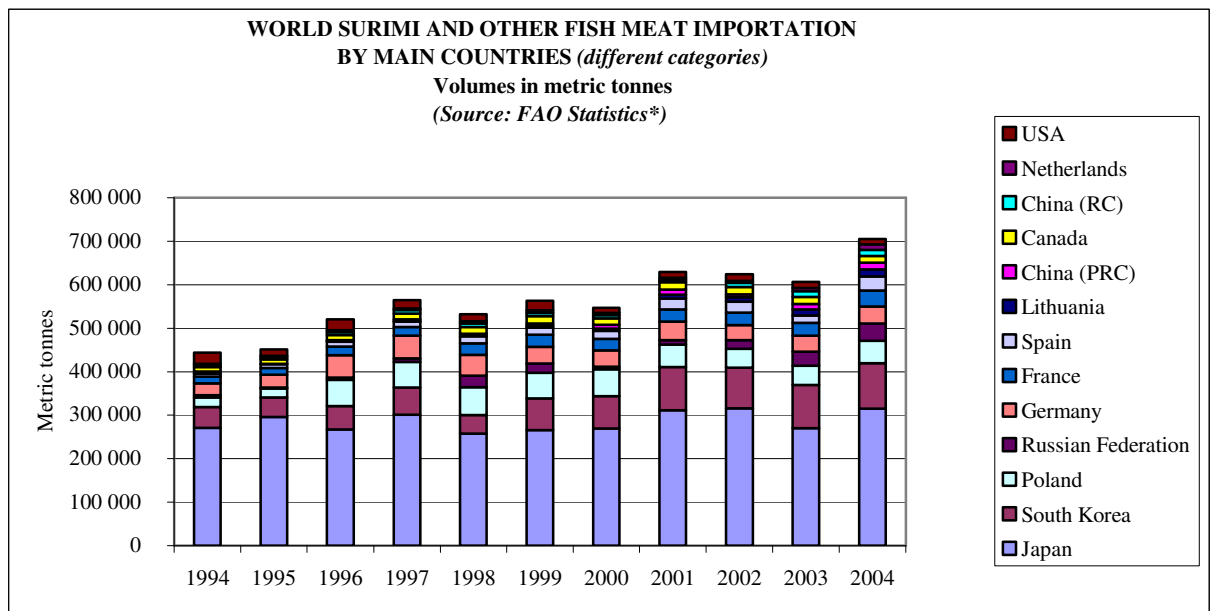
(* Including 'fish minced (= surimi) frozen' plus other categories of fish meat frozen which could be mainly surimi, 'hake minced frozen', 'saithe (= pollock) minced, frozen', 'cod minced frozen', 'fish meat, whether or not minced, frozen, nei', 'fish meat, whether or not minced, fresh, chilled, frozen,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

Table 2.1-7: surimi importing countries

WORLD SURIMI AND OTHER FISH MEAT IMPORTATION BY MAIN COUNTRIES							Volumes in metric tonnes				
(Source: FAO Statistics*)											
Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Japan	271 139	296 090	267 387	300 850	257 428	265 657	269 586	311 454	315 994	269 983	314 674
South Korea	47 758	44 328	53 828	62 697	43 139	72 611	74 414	99 443	93 202	99 478	104 477
Poland	21 973	20 761	60 092	59 006	63 975	59 237	61 515	51 383	43 252	44 220	51 611
Russian Federation	4 950	2 379	5 082	7 624	26 283	21 103	5 909	10 559	20 323	32 049	40 020
Germany	27 197	29 117	51 769	52 528	47 796	38 636	37 202	42 106	34 305	37 068	39 146
France	15 240	15 765	19 529	19 705	26 494	28 107	26 679	27 924	28 681	29 542	36 915
Spain	6 694	8 503	11 453	13 027	16 473	15 616	18 459	24 948	25 007	16 572	31 812
Lithuania	384	375	894	346		4 618	5 349	9 110	10 654	14 563	16 324
China (PRC)	4 774	1 017	2 216	4 579	5 823	5 254	9 063	11 679	6 542	12 419	15 944
Canada	10 446	10 120	12 181	13 481	15 265	17 127	14 477	17 100	16 976	16 147	15 108
China (RC)	6 263	4 926	6 374	7 520	8 156	6 878	7 139	5 213	9 485	13 341	13 866
Netherlands	1 080	2 809	4 821	4 336	5 347	5 800	4 979	4 872	4 043	6 843	12 938
USA	26 156	14 595	24 875	18 642	15 840	22 356	11 974	13 269	15 599	13 984	12 582
Others	62 003	65 495	96 172	126 322	78 703	76 526	77 998	91 021	130 506	121 590	103 897
TOTAL	506 057	516 280	616 673	690 663	610 722	639 526	624 743	720 081	754 569	727 799	809 314

(* 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 2.1-5: surimi importing 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'.)

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 2.2-1: Japan surimi imports by main species

JAPAN: SURIMI IMPORTS BY MAIN SPECIES							Volumes in metric tonnes			
(Source: NOAA's National Marine Fisheries Service and FAO for 2002 and 2003)										
Species	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Pollock surimi	126 800	125 010	108 222	103 740	106 505	142 213	128 570	101 448	132 178	118 220
Threadfin bream surimi	28 510	37 320	36 365	45 098	49 741	59 131	69 023	63 922	54 602	62 503
Cod surimi	17 807	26 372	17 698	20 121	17 577	6 034	5 251	3 207		
Others	92 872	113 328	91 758	96 635	95 425	101 934	113 150	101 406	111 857	122 650
TOTAL	265 989	302 030	254 043	265 594	269 248	309 312	315 994	269 983	298 637	303 373

Figure 2.2-1: Japan surimi imports by main species

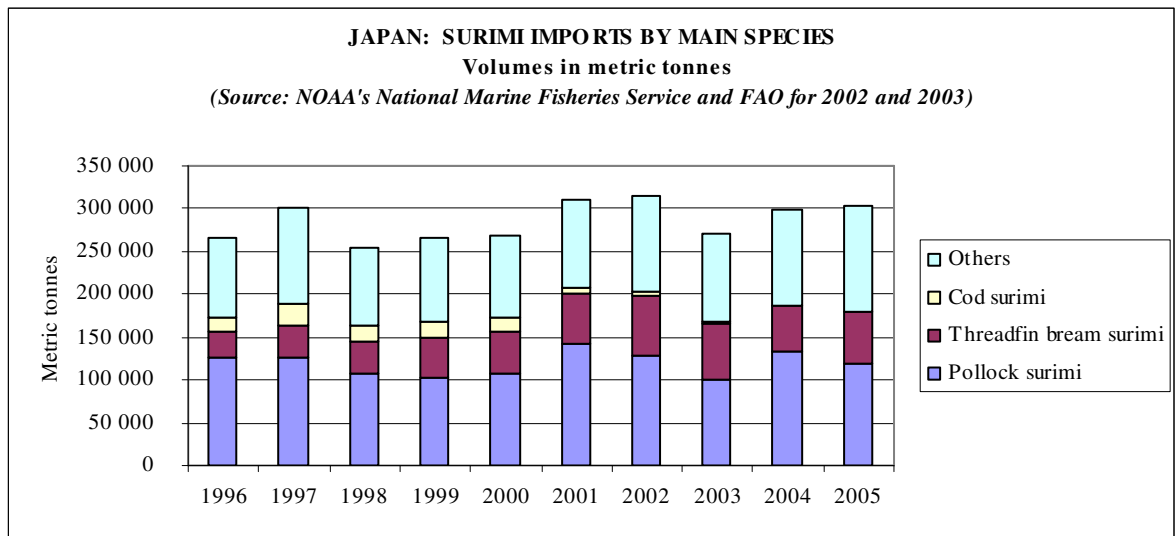


Table 2.2-2: Japan surimi imports by main countries/species

JAPAN: SURIMI IMPORTS BY MAIN COUNTRIES/SPECIES IN 2001 (Source: Japan Fish Traders Association)						
Country	Pollock surimi	Cod and Pacific whiting surimi	Threadfin bream surimi	Croaker surimi	Others	TOTAL
USA	137 193	5918	79		1 528	144 718
Thailand			40 909	4 543	40 798	86 250
Argentina	18				16 654	16 672
India			14 835	613	1 019	16 467
China (PRC)	48		18	1 509	9 706	11 281
Chile		95			9 887	9 982
Russian Federation	4 676					4 676
Indonesia			2 707	72	535	3 314
Panama					3 286	3 286
South Korea	278				2 171	2 449
Peru					1 931	1 931
Others	0	21	583	628	7 054	8 286
TOTAL	142 213	6 034	59 131	7 365	94 569	309 312

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

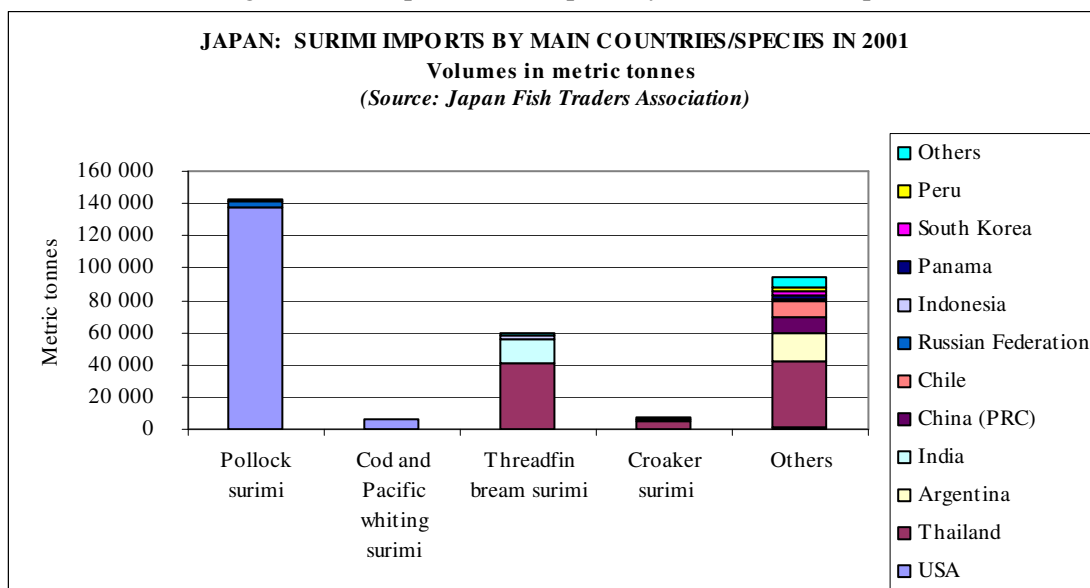
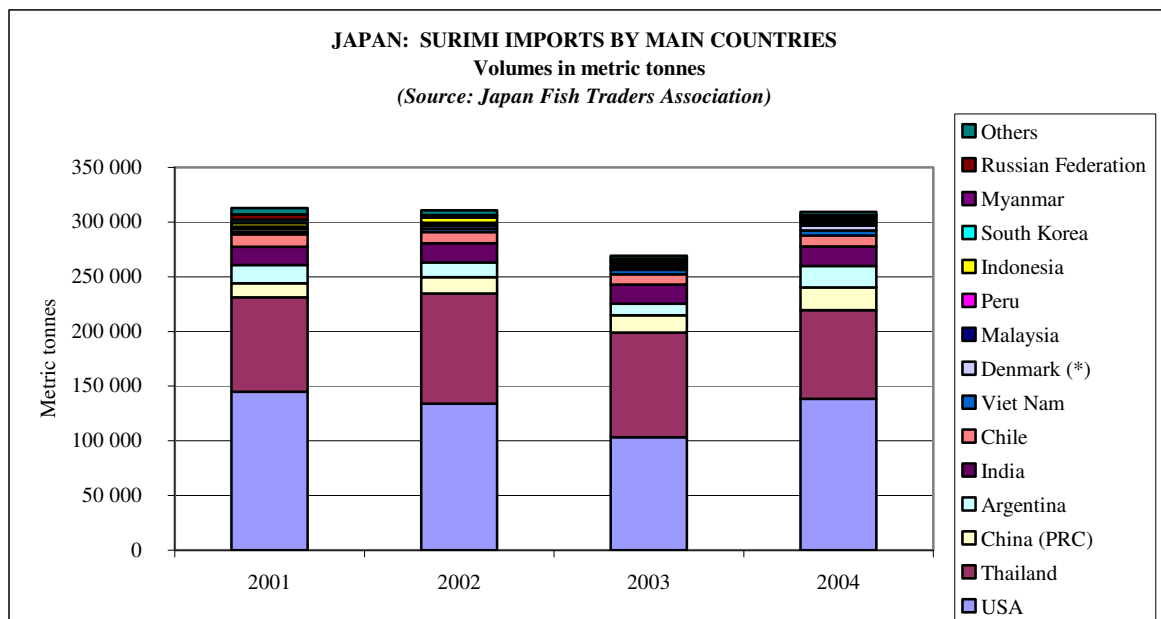


Table 2.2-3: Japan surimi imports by main countries

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

(* Mainly Faeroese production re-export.)

Figure 2.2-3: Japan surimi imports by main countries



(* 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

JAPAN: ANNUAL SURIMI PRICE EVOLUTION BY MAIN SPECIES							
in Yen/kg							
(Source: NOAA's National Marine Fisheries Service)							
Species	1999	2000	2001	2002	2003	2004	2005
Pollock surimi	282	210	198	251	205	185	258
Threadfin bream surimi	211	187	176	207	187	173	219

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

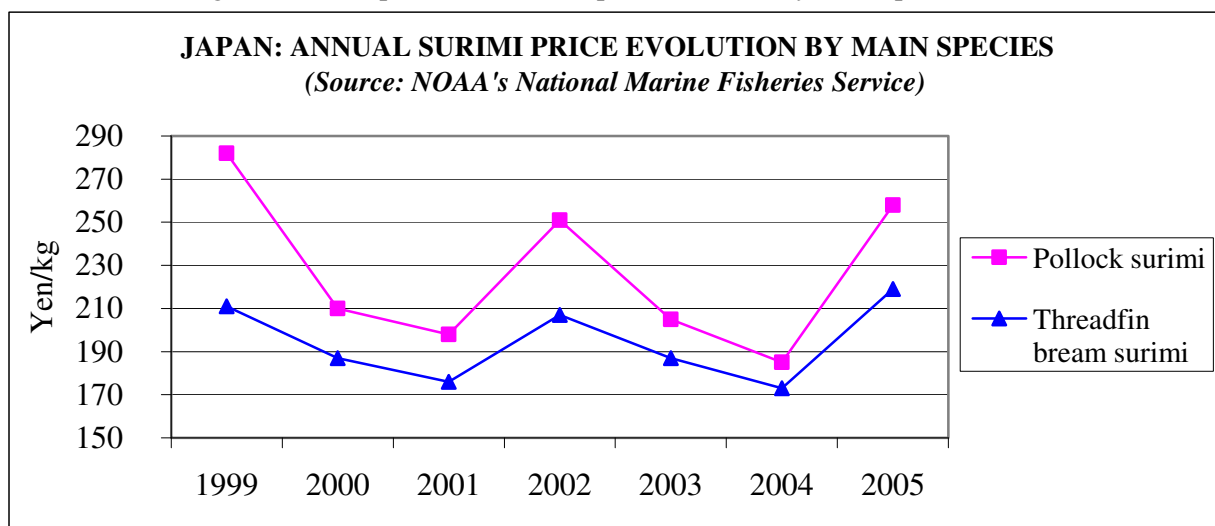
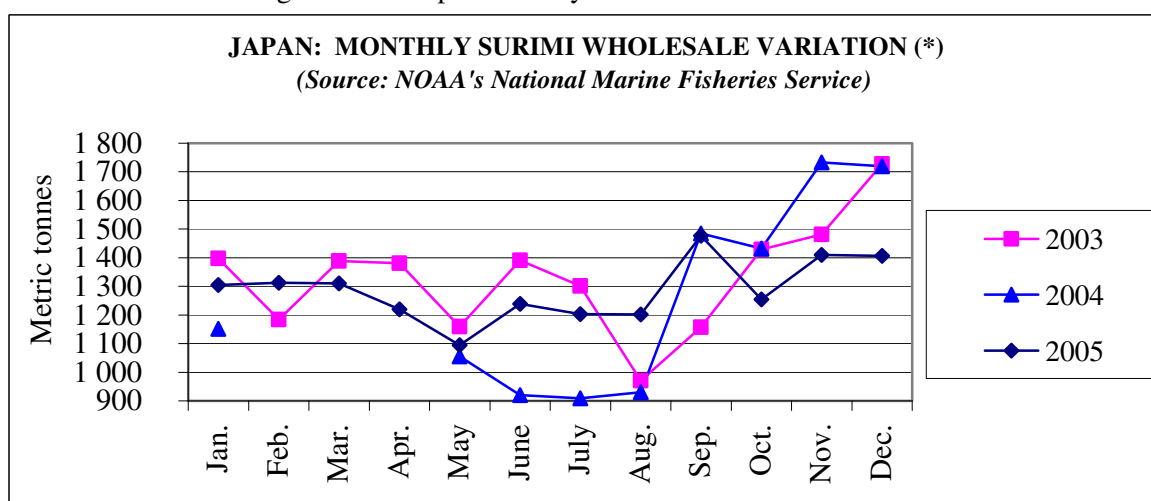


Table 2.2-5: Japan monthly surimi wholesale variation

JAPAN: MONTHLY SURIMI WHOLESALE VARIATION (*)												
in metric tonnes												
(Source: NOAA's National Marine Fisheries Service)												
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
2003	1 398	1 184	1 389	1 381	1 159	1 391	1 301	970	1 157	1 429	1 481	1 727
2004	1 152				1 055	920	909	930	1 485	1 432	1 733	1 719
2005	1 305	1 312	1 310	1 220	1 095	1 239	1 203	1 202	1 477	1 254	1 410	1 407

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

Figure 2.2-5: Japan monthly surimi wholesale variation



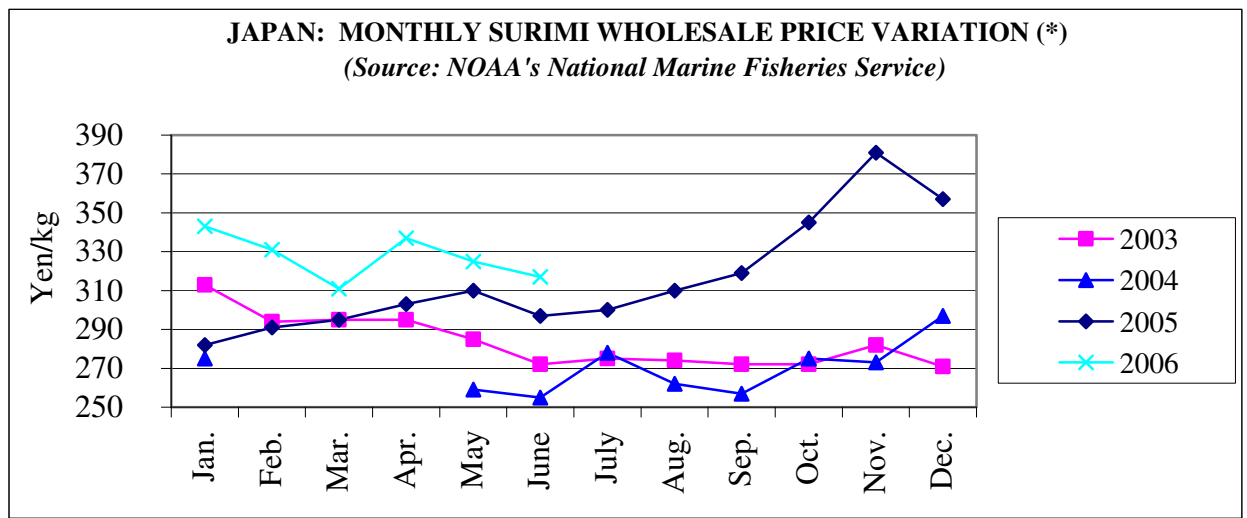
(* At 10 major central wholesale markets in Japan.)

Table 2.2-6: Japan monthly surimi wholesale price variation

JAPAN: MONTHLY SURIMI WHOLESALE PRICE VARIATION (*) in Yen/kg (Source: NOAA's National Marine Fisheries Service)												
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
2003	313	294	295	295	285	272	275	274	272	272	282	271
2004	275				259	255	278	262	257	275	273	297
2005	282	291	295	303	310	297	300	310	319	345	381	357
2006	343	331	311	337	325	317						

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

Figure 2.2-6: Japan monthly surimi wholesale price variation



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

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:

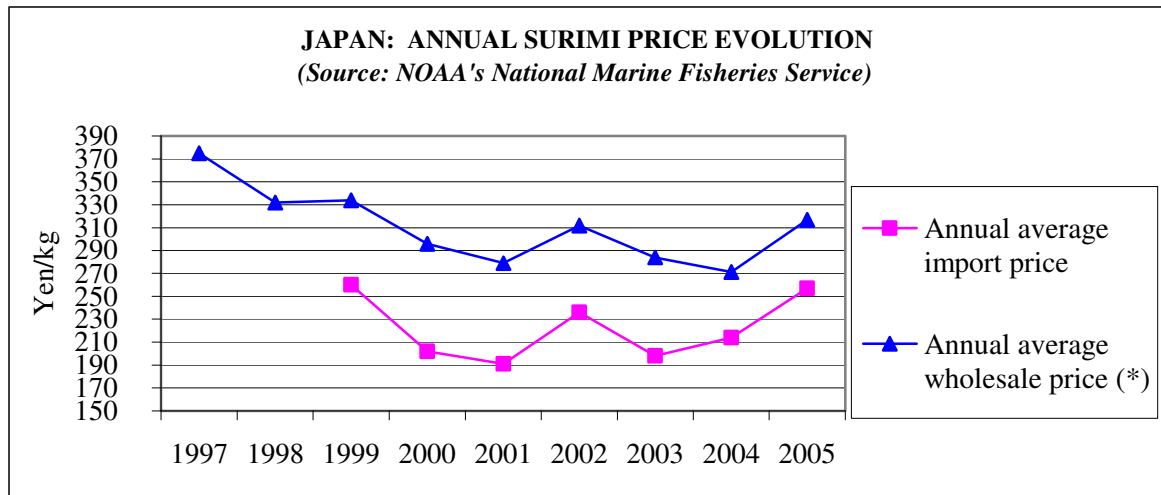
- import price variance from 191 to 236 Yen/kg in 2001/2002 => +24 percent
- wholesale price variance from 271 to 317 Yen/kg in 2004/2005 => +17 percent

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

JAPAN: ANNUAL SURIMI PRICE EVOLUTION in Yen/kg (Source: NOAA's National Marine Fisheries Service)									
Price	1997	1998	1999	2000	2001	2002	2003	2004	2005
Annual average import price			260	202	191	236	198	214	257
Annual average wholesale price (*)	375	332	334	296	279	312	284	271	317

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

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



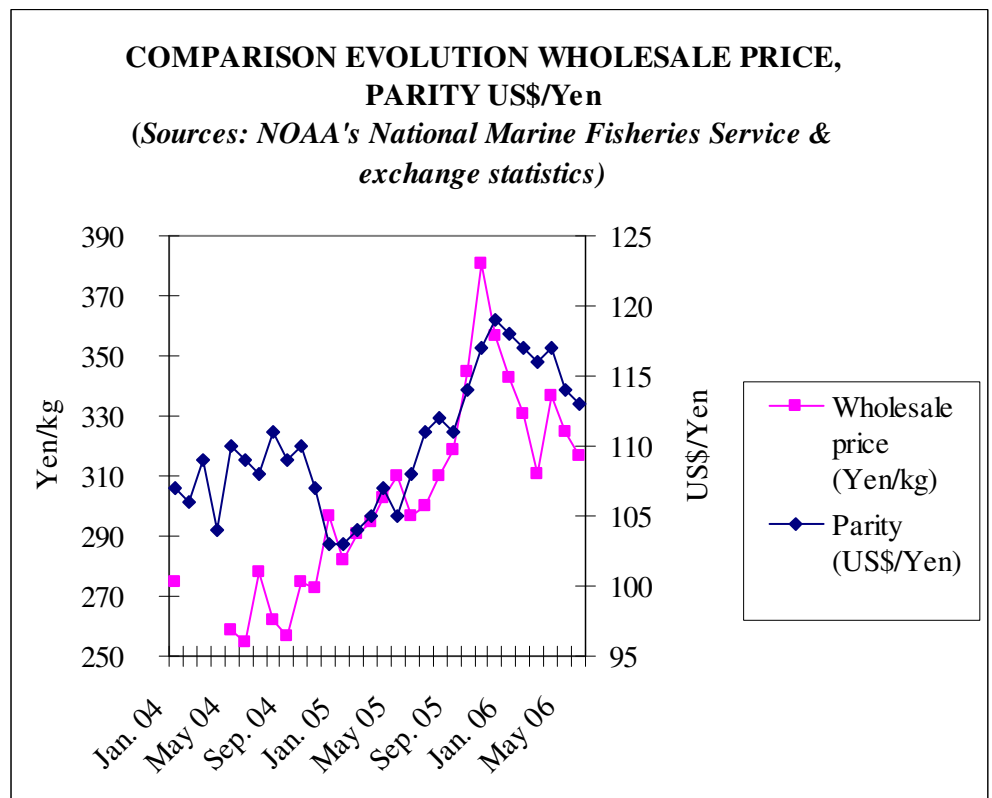
(* At 10 major central wholesale markets in Japan.)

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

COMPARISON WHOLESALE PRICE VARIATION, PARITY US\$/YEN		
(Sources: NOAA's National Marine Fisheries Service & exchange statistics)	Wholesale price (Yen/kg)	Parity (US\$/Yen)
Jan. 04	275	107
Feb. 04		106
Mar. 04		109
Apr. 04		104
May 04	259	110
June 04	255	109
July 04	278	108
Aug. 04	262	111
Sep. 04	257	109
Oct. 04	275	110
Nov. 04	273	107
Dec. 04	297	103
Jan. 05	282	103
Feb. 05	291	104
Mar. 05	295	105
Apr. 05	303	107
May 05	310	105
June 05	297	108
July 05	300	111
Aug. 05	310	112
Sep. 05	319	111
Oct. 05	345	114
Nov. 05	381	117
Dec. 05	357	119
Jan. 06	343	118
Feb. 06	331	117
Mar. 06	311	116
Apr. 06	337	117
May 06	325	114
June 06	317	113



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

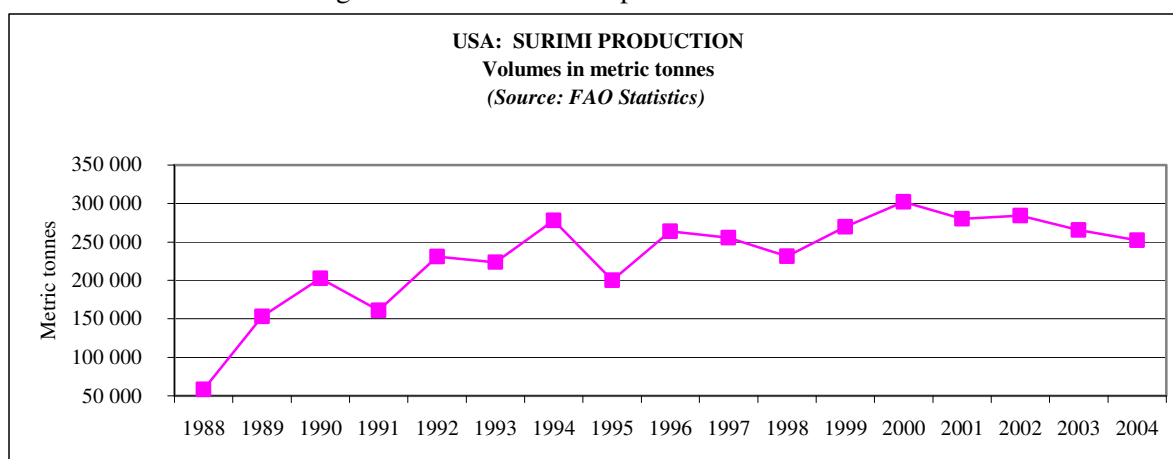
United States surimi annual production increased to around 300 000 metric tonnes in 2000 (Table 2.3-1 and Figure 2.3-1). It decreased to around 250 000 metric tonnes in 2004. Even though previous years have shown that annual production may vary greatly, this overall reduction appears to be structural. 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 2.3-1: USA surimi production

USA: SURIMI PRODUCTION																		
Volumes in metric tonnes																		
(Source: FAO Statistics)																		
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Production	58 200	152 991	202 434	161 147	231 070	223 541	278 233	200 006	263 790	255 824	231 669	269 824	302 323	280 150	284 157	265 552	252 479	

Figure 2.3-1: USA surimi production



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 A 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.

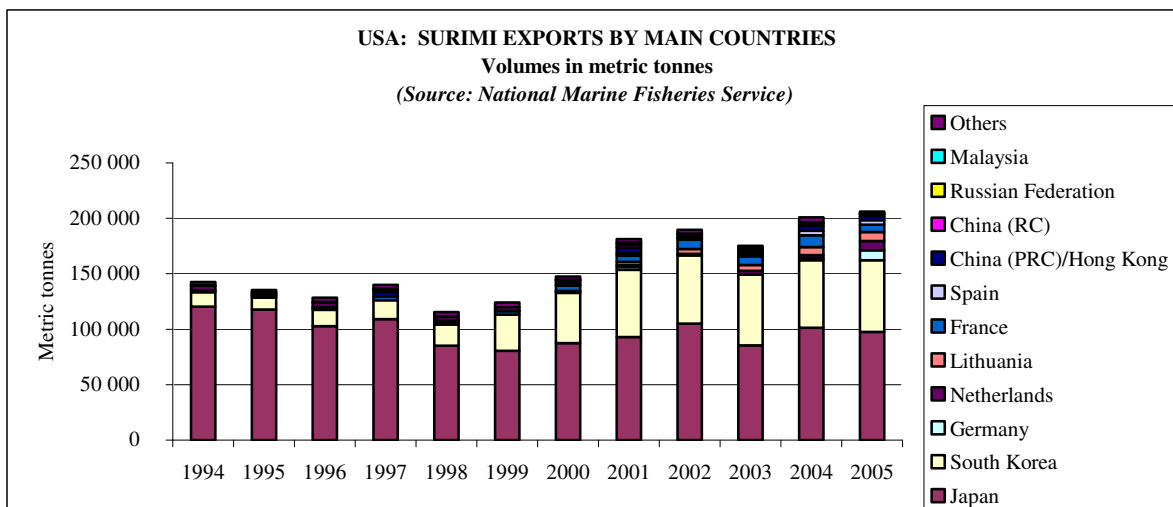
The Republic of Korea has become the second-ranking destination for American surimi, with 31 percent of total United States exports.

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

USA: SURIMI EXPORTS BY MAIN COUNTRIES							Volumes in metric tonnes					
(Source: National Marine Fisheries Service)												
Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Japan	120 506	117 762	102 694	109 195	85 078	80 532	87 484	92 856	105 199	85 471	101 205	97 478
South Korea	12 909	10 753	14 734	16 948	19 158	32 710	45 428	60 633	61 301	63 744	61 026	64 831
Germany							951	2 608	847	307	1 990	8 819
Netherlands							225	1 802	783	3 208	2 555	8 487
Lithuania							528	2 957	4 230	5 207	7 156	8 007
France	1 328	1 261	2 002	3 118	2 374	3 062	4 748	5 523	8 307	7 670	10 885	6 645
Spain				407	528	420	588	2 196	1 901	2 345	4 078	4 111
China (PRC)/Hong Kong	1 017	978	1 016	3 990	1 326	285	2 430	5 197	518	2 340	4 308	3 027
China (RC)	3 014	1 520	3 023	2 311	2 802	2 808	1 443	2 707	2 631	2 331	2 375	2 026
Russian Federation							489	1 620	182		931	520
Malaysia	1 026	672	1 175	541	415	96	187	114	305	208	127	223
Others	2 699	2 433	3 826	3 633	3 695	4 274	3 017	3 066	3 524	2 307	4 329	1 845
TOTAL	142 499	135 379	128 470	140 143	115 376	124 187	147 518	181 279	189 728	175 138	200 965	206 019

Figure 2.3-2: USA surimi exports by main countries



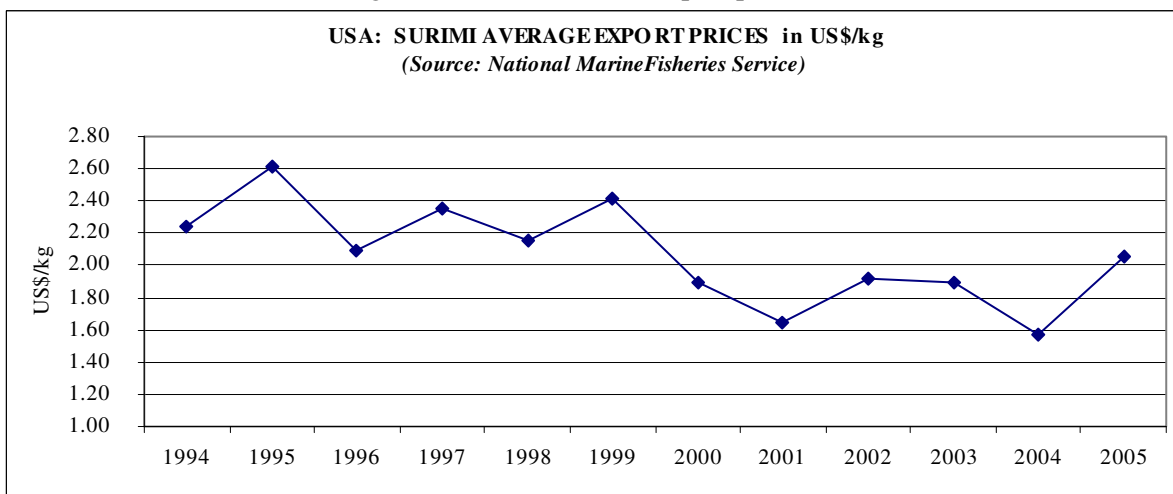
During the last ten years, surimi export prices decreased steadily. This price decrease is the result of an increase in the world surimi supply, given the use of new species and the development of new producer countries, despite an increase in world demand for surimi products (Table 2.3-3 and Figure 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

USA: SURIMI AVERAGE EXPORT PRICES								Prices in US\$/kg				
(Source: National Marine Fisheries Service)												
Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Average annual price	2.24	2.61	2.09	2.35	2.15	2.41	1.90	1.64	1.92	1.89	1.57	2.06

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.

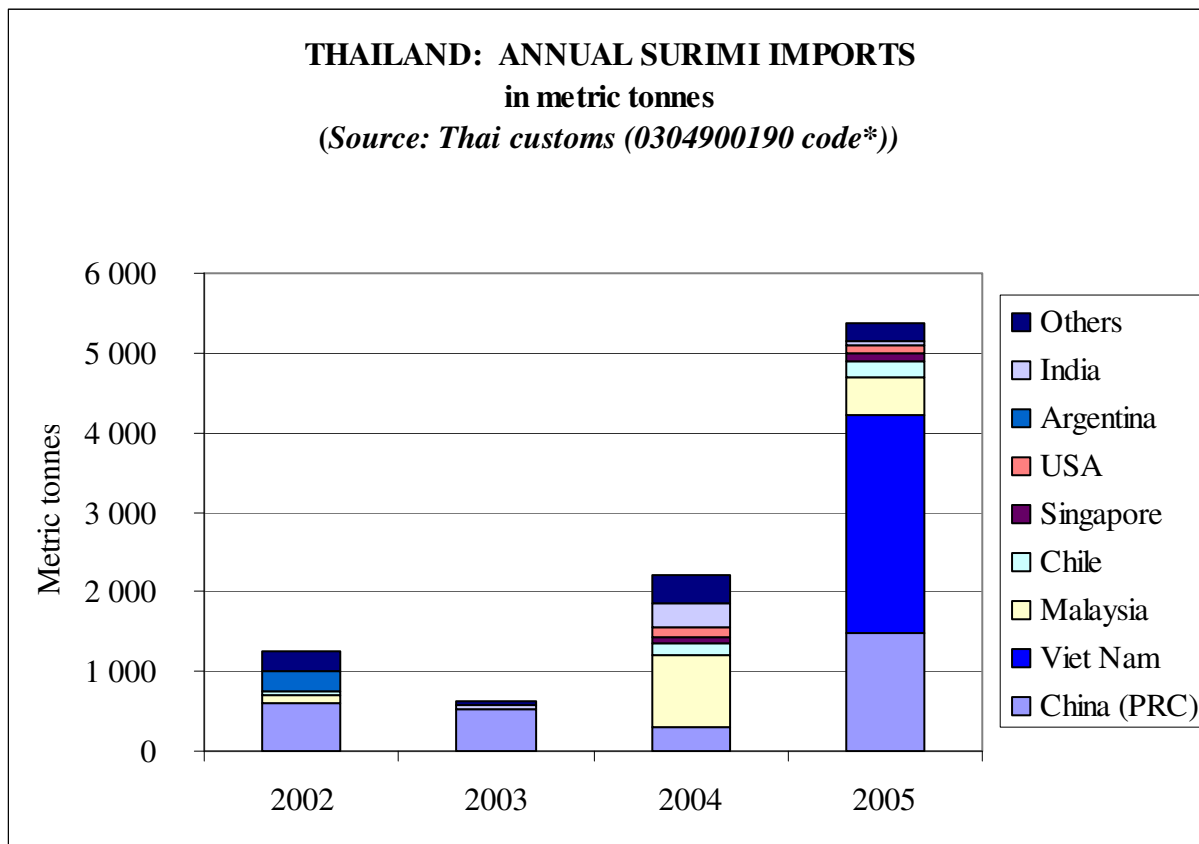
Export prices, which fluctuated around Baht60/kg (almost US\$1.64) during the years 2002, 2003, and 2004, increased dramatically in 2005 (+24 percent), thanks especially to high Japanese prices (Table 2.4-3 and Figure 2.4-3).

Table 2.4-1: Thailand surimi import

THAILAND: ANNUAL SURIMI IMPORTS				
in metric tonnes				
<i>(Source: Thai customs (0304900190 code*))</i>				
Country	2002	2003	2004	2005
China (PRC)	593	532	293	1 483
Viet Nam				2 744
Malaysia	114		902	480
Chile	46		169	178
Singapore			62	121
USA			132	83
Argentina	240			
India		42	303	48
Others	270	49	338	239
TOTAL	1 263	623	2 199	5 376

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

Figure 2.4-1: Thailand surimi import



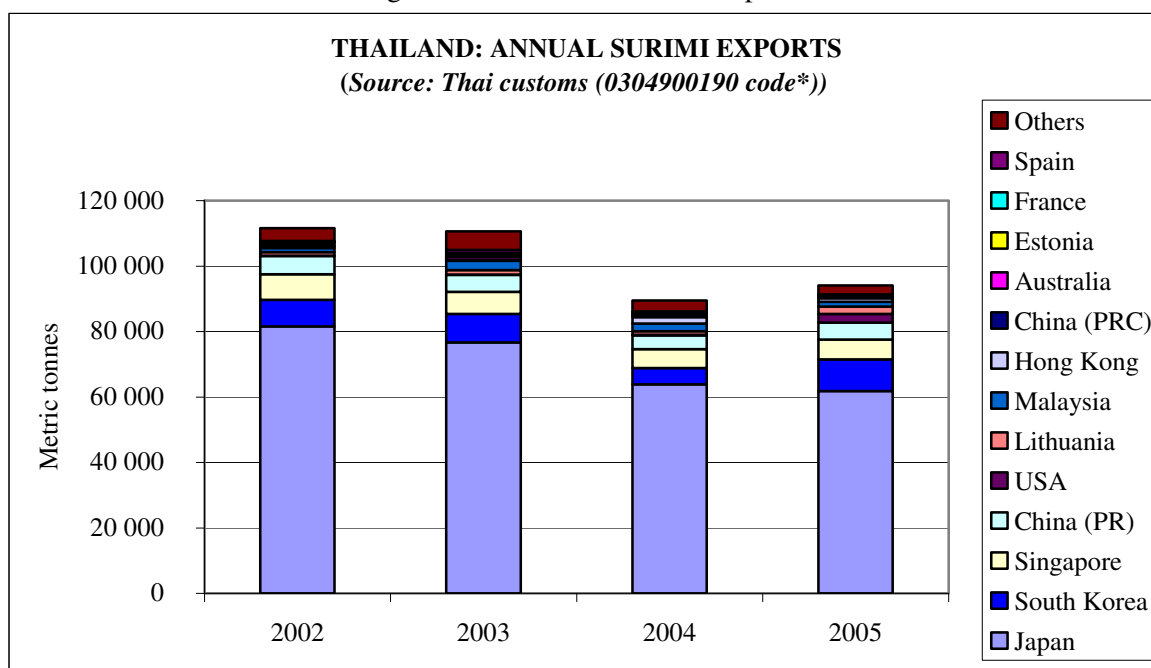
(* This code is announced as surimi code by Thailand Frozen Foods Association.)

Table 2.4-2: Thailand surimi export

THAILAND: ANNUAL SURIMI EXPORTS in metric tonnes (Source: Thai customs (0304900190 code*))				
Country	2002	2003	2004	2005
Japan	81 536	76 664	63 908	61 845
South Korea	8 158	8 724	4 918	9 654
Singapore	7 835	6 734	5 807	6 008
China (PR)	5 567	5 221	4 187	5 233
USA	127	70	177	2 681
Lithuania	1 078	1 343	1 125	2 191
Malaysia	1 193	2 820	2 361	1 517
Hong Kong	482	191	1 900	1 045
China (PRC)	275	259	284	617
Australia	734	866	385	239
Estonia	298	629	293	125
France	260	451	407	221
Spain	132	1 001	378	
Others	3 932	5 674	3 361	2 731
TOTAL	111 607	110 647	89 491	94 107

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

Figure 2.4-2: Thailand surimi export

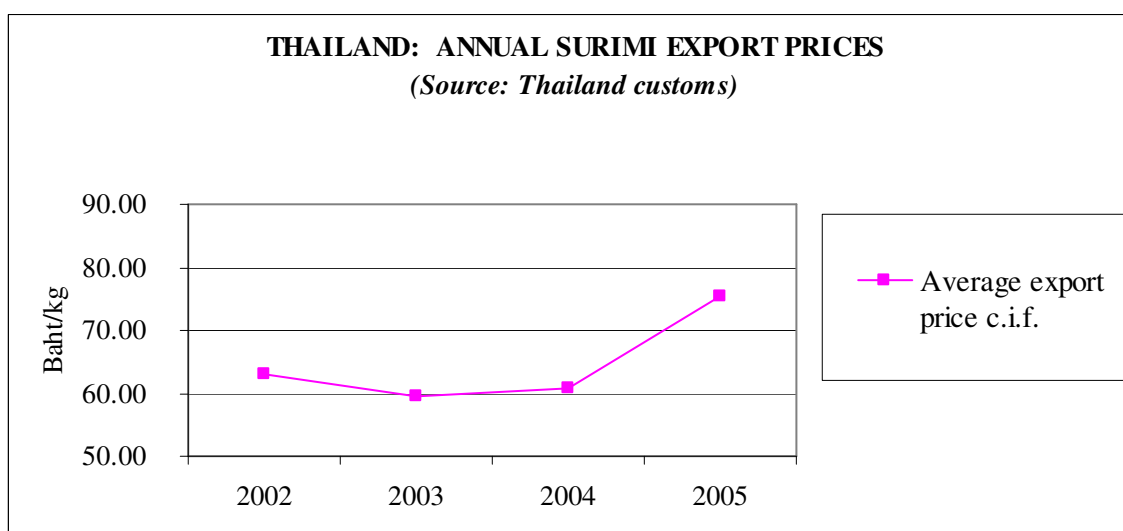


(* This code is announced as surimi code by Thailand Frozen Foods Association.)

Table 2.4-3: Thailand surimi export price

THAILAND: ANNUAL SURIMI EXPORT PRICES				in Baht/kg
(Source: Thailand customs)				
	2002	2003	2004	2005
Average export price c.i.f.	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

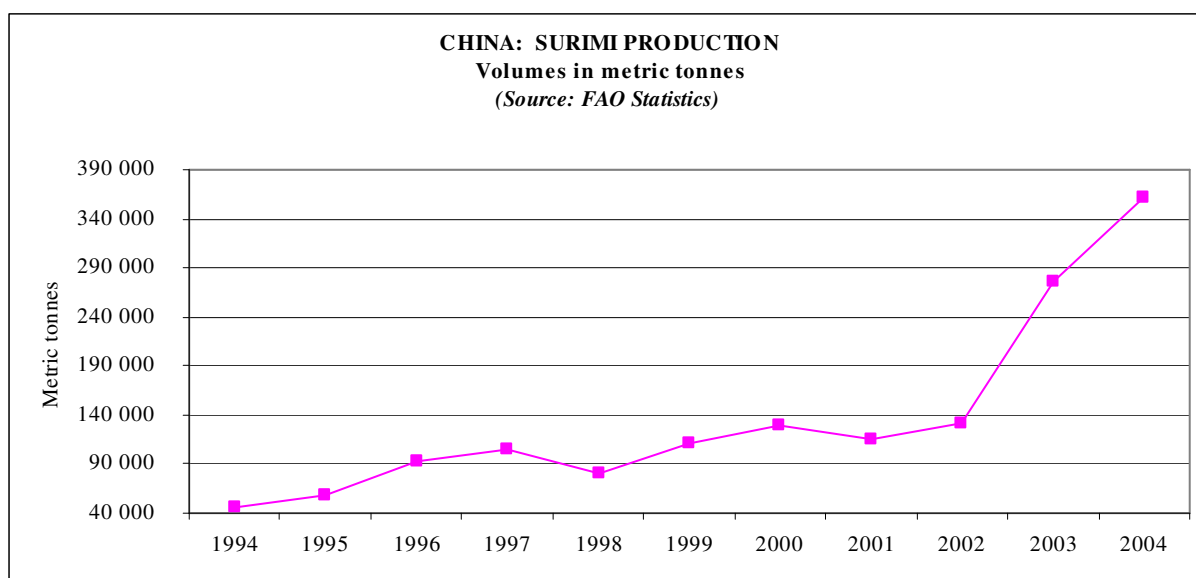
In the 1980s, China imported two surimi production lines from Japan and since then has carried on its own industrial production of surimi.

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 2.5-1: China surimi production

CHINA: SURIMI PRODUCTION							Volumes in metric tonnes				
<i>(Source: FAO Statistics)</i>											
Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Production	46 810	58 526	92 096	106 003	81 601	111 603	129 650	114 422	131 722	275 381	361 242

Figure 2.5-1: China surimi production



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):

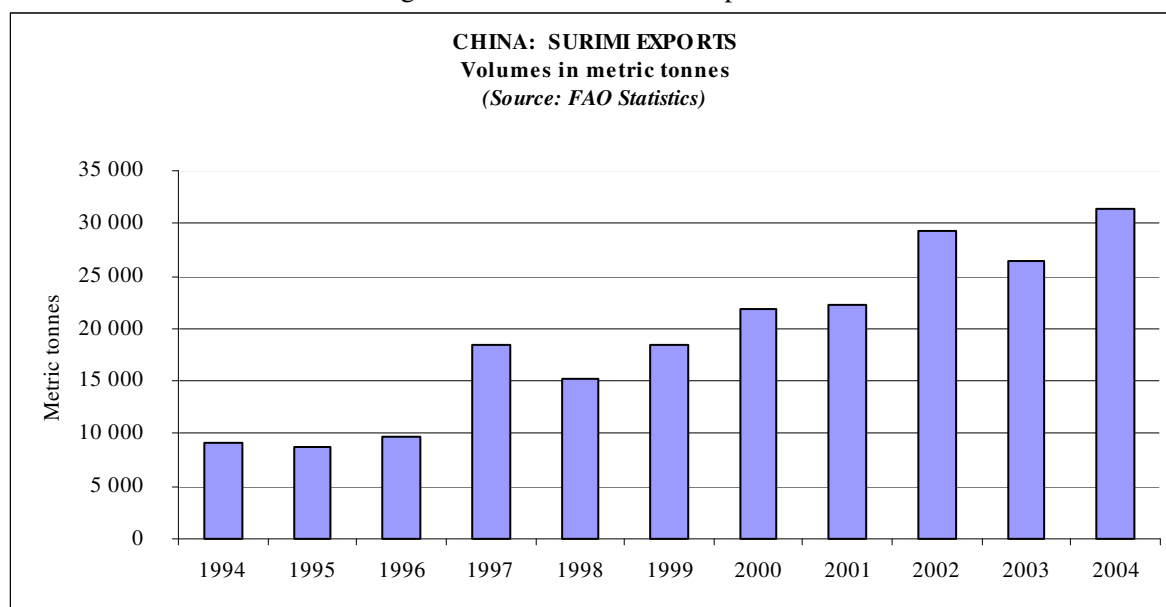
- 16 000 metric tonnes imported by the Republic of Korea in 2003 and 23 000 metric tonnes in 2004,
- 11 000 metric tonnes imported by Japan in 2001 and 21 000 metric tonnes in 2004,
- 600 metric tonnes imported by Thailand in 2002 and 1 500 metric tonnes in 2005, and
- 100 metric tonnes imported by the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

Table 2.5-2: China surimi exports

CHINA: SURIMI EXPORTS											
Volumes in metric tonnes											
(Source: FAO Statistics)											
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
TOTAL	9 158	8 713	9 732	18 507	15 198	18 414	21 930	22 186	29 296	26 525	31 434

Figure 2.5-2: China surimi exports



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.

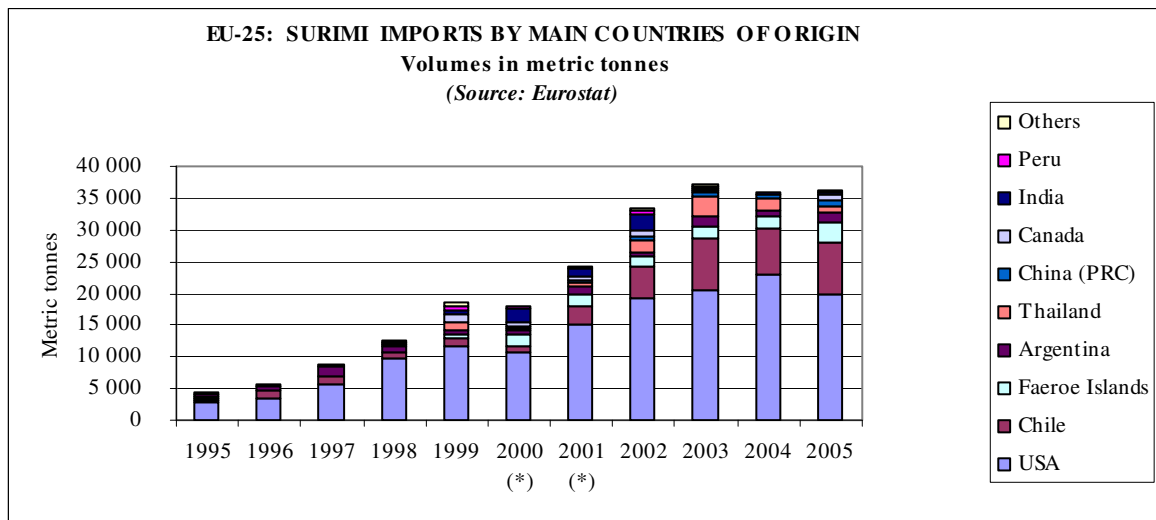
The EU demand for surimi is covered for the most part by imports from the United States of America (55 percent) and Chile (22 percent). Recently, the Faeroe Islands have rapidly become an important supplier, providing almost 10 percent of total EU imports (Table 2.11-1 and Figure 2.11-1).

Table 2.11-1: EU-25 surimi import

EU-25: SURIMI IMPORTS BY MAIN COUNTRIES OF ORIGIN											
(Source: Eurostat)											
Country	1995	1996	1997	1998	1999	2000 (*)	2001 (*)	2002	2003	2004	2005
USA	2 844	3 464	5 617	9 774	11 621	10 707	15 151	19 210	20 560	22 877	19 948
Chile	413	1 240	1 194	842	1 264	936	2 855	5 059	8 185	7 381	8 085
Faeroe Islands					526	1 927	1 987	1 487	1 933	1 960	3 298
Argentina	262	797	1 750	1 063	864	603	1 175	679	1 340	917	1 272
Thailand	408	25	36	374	1 031	333	448	1 878	3 295	1 918	1 219
China (PRC)					100	446	415	637	746	591	916
Canada			75	90	1 248	549	651	1 011	36	25	751
India					710	2 044	1 301	2 355	552	130	295
Peru	44				528	546	390	625	283		25
Others	438	183	209	323	823	0	0	329	257	174	267
TOTAL EUROPE-25	4 409	5 709	8 881	12 466	18 715	17 357	22 497	33 270	37 187	35 973	36 076

(* There is a statistical error resulting in no import quantities for 'Others' category.)

Figure 2.11-1: EU-25 surimi import



(* There is a statistical error resulting in no import quantities for 'Others' category.)

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).

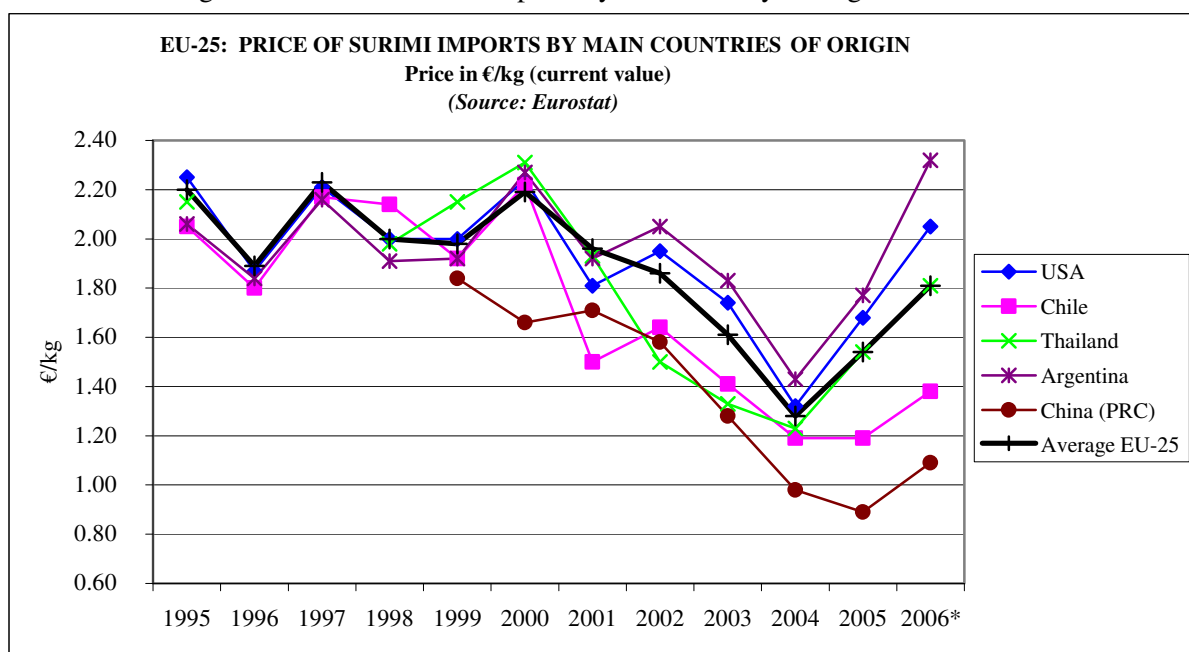
Import prices of surimi from Argentina or the United States of American can be double those of surimi from China.

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

EU-25: PRICE OF SURIMI IMPORTS BY MAIN COUNTRIES OF ORIGIN										Price in €/kg (current value)		
(Source: Eurostat)												
Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006*
USA	2.25	1.87	2.21	2.00	2.00	2.24	1.81	1.95	1.74	1.32	1.68	2.05
Chile	2.05	1.80	2.17	2.14	1.92	2.22	1.50	1.64	1.41	1.19	1.19	1.38
Thailand	2.15			1.98	2.15	2.31	1.93	1.50	1.33	1.23	1.54	1.81
Argentina	2.06	1.84	2.16	1.91	1.92	2.27	1.92	2.05	1.83	1.43	1.77	2.32
China (PRC)					1.84	1.66	1.71	1.58	1.28	0.98	0.89	1.09
Average EU-25	2.20	1.89	2.23	2.00	1.98	2.19	1.96	1.86	1.61	1.28	1.54	1.81

(* 6 months in 2006.)

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



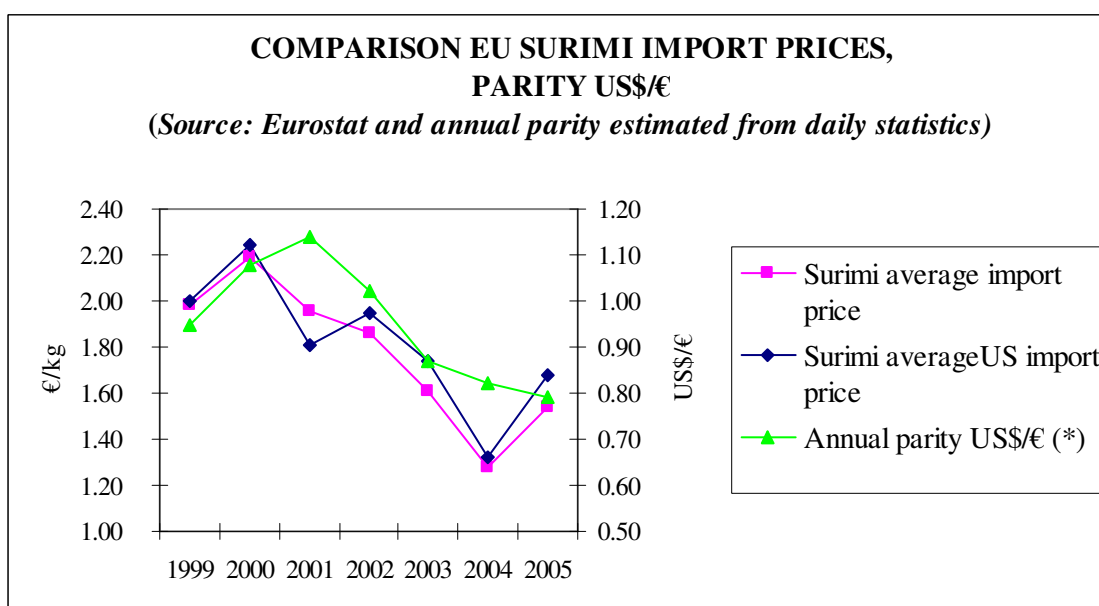
(* 6 months in 2006.)

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

COMPARISON EU SURIMI IMPORT PRICES, PARITY US\$/€							
(Source: Eurostat and annual parity estimated from daily statistics)							
	1999	2000	2001	2002	2003	2004	2005
Surimi average import price	1.98	2.19	1.96	1.86	1.61	1.28	1.54
Surimi averageUS import price	2.00	2.24	1.81	1.95	1.74	1.32	1.68
Annual parity US\$/€ (*)	0.95	1.08	1.14	1.02	0.87	0.82	0.79

(* Annual parity is estimated from daily statistics.)

Figure 2.11-3: 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):

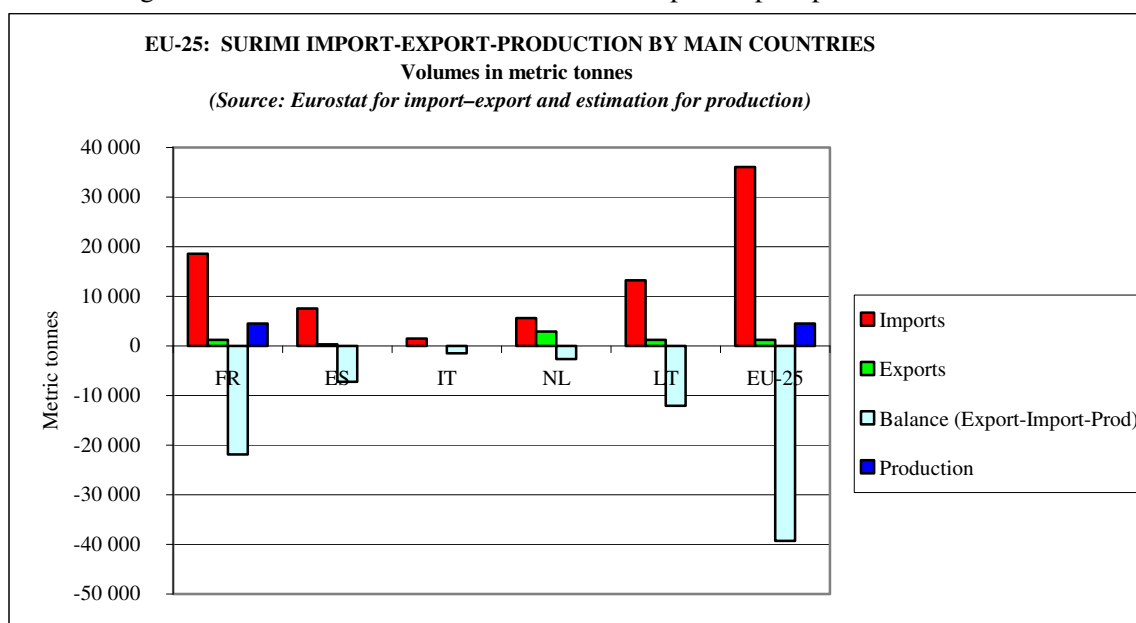
- EU-25 total demand for surimi is 39 319 metric tonnes,
- production represents only 11 percent of this demand, and
- France, Lithuania and Spain are the most important importing countries.

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

EU-25: SURIMI IMPORT-EXPORT-PRODUCTION BY MAIN COUNTRIES						(Source: <i>Eurostat for import-export and estimation for production)</i>	
Volume 2005 in metric tonnes							
	FR	ES	IT	NL	LT		EU-25
Imports	18 567	7 553	1 465	5 582	13 241	36 076	
Production	4 500					4 500	
Exports	1 209	350	5	2 921	1 198	1 257	
Balance (Export-Import-Prod)	-21 858	-7 203	-1 460	-2 661	-12 043	-39 319	

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

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



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.

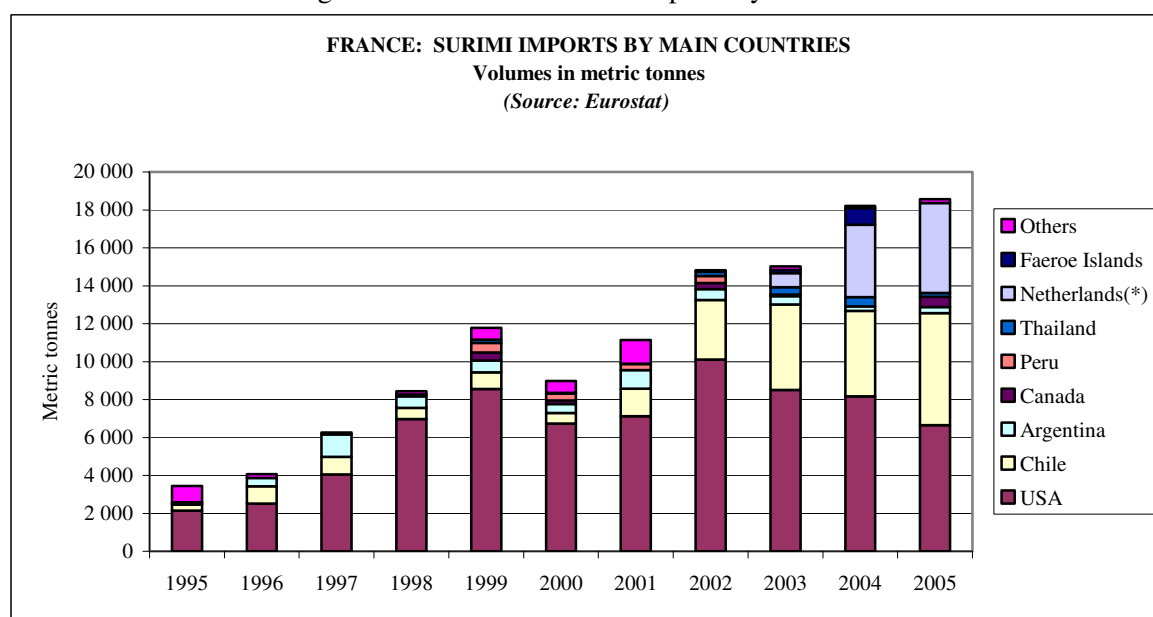
France's imports account for more than 40 percent of total EU-25 imports.

Table 2.11-5: France surimi imports by main countries

FRANCE: SURIMI IMPORTS BY MAIN COUNTRIES							Volumes in metric tonnes				
(Source: Eurostat)											
Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
USA	2 136	2 518	4 050	6 967	8 553	6 733	7 127	10 105	8 510	8 172	6 652
Chile	325	914	926	594	877	550	1 447	3 139	4 505	4 508	5 902
Argentina	72	431	1 183	615	625	475	977	586	434	227	316
Canada				89	428	186		310			551
Peru	44				508	371	326	368	84		
Thailand					159	11	18	234	398	495	207
Netherlands(*)									734	3 811	4 742
Faeroe Islands						22			173	882	
Others	869	205	109	176	626	639	1 252	82	191	110	197
TOTAL	3 446	4 068	6 268	8 441	11 776	8 987	11 147	14 824	15 029	18 205	18 567

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

Figure 2.11-5: France surimi imports by main countries



(* 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.

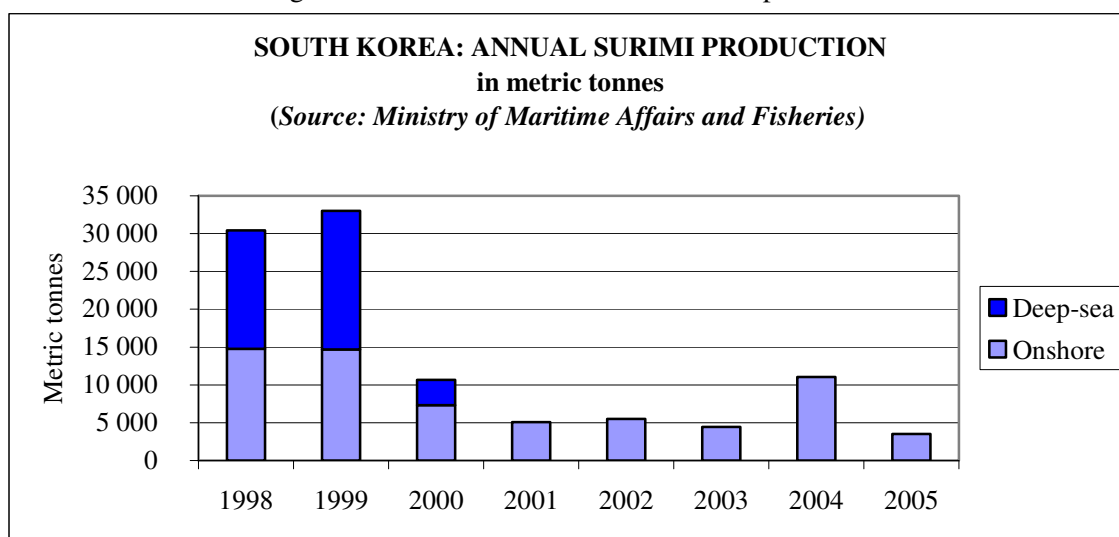
2.12.2. Republic of Korea

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						in metric tonnes		
(Source: Ministry of Maritime Affairs and Fisheries)								
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

Figure 2.12-1: South Korea annual surimi production



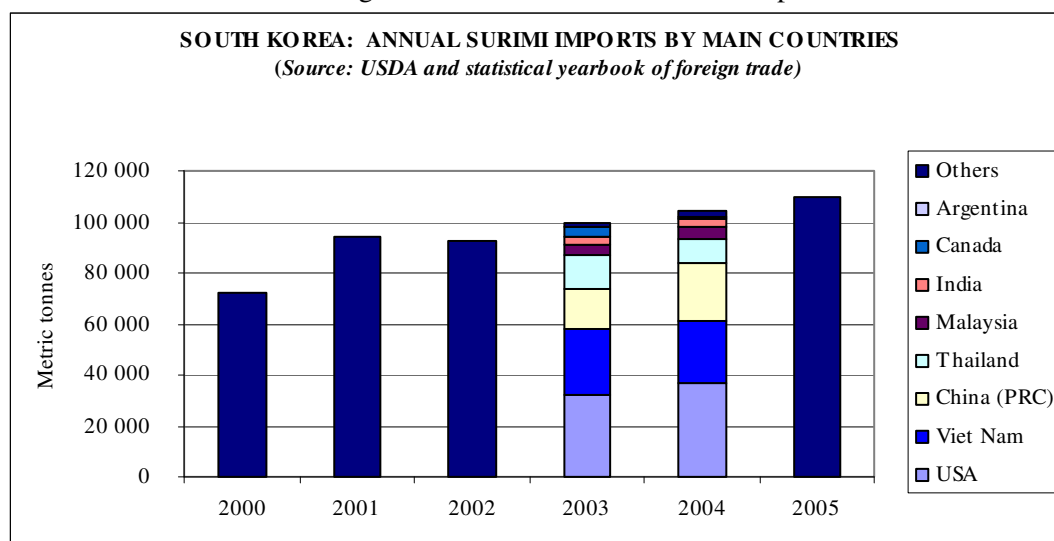
In the early 1990s, the Republic of Korea produced about half of the 90 000 metric tonnes of surimi needed annually. Presently, the country produces 3 500 metric tonnes per year, a greatly reduced amount. The remainder of the country's needs are covered thanks to 110 000 tonnes per year of imports.

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

SOUTH KOREA: ANNUAL SURIMI IMPORTS BY MAIN COUNTRIES						in metric tonnes
(Source: USDA and statistical yearbook of foreign trade)						
Country	2000	2001	2002	2003	2004	2005
USA				32 512	37 032	
Viet Nam				25 751	24 385	
China (PRC)				15 843	22 759	
Thailand				13 333	9 464	
Malaysia				3 643	4 561	
India				3 181	2 674	
Canada				3 461		
Argentina					1 327	
Others	72 384	94 108	92 236	1 625	1 987	110 000
TOTAL	72 384	94 108	92 236	99 349	104 189	110 000

Figure 2.12-2: South Korea surimi import



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

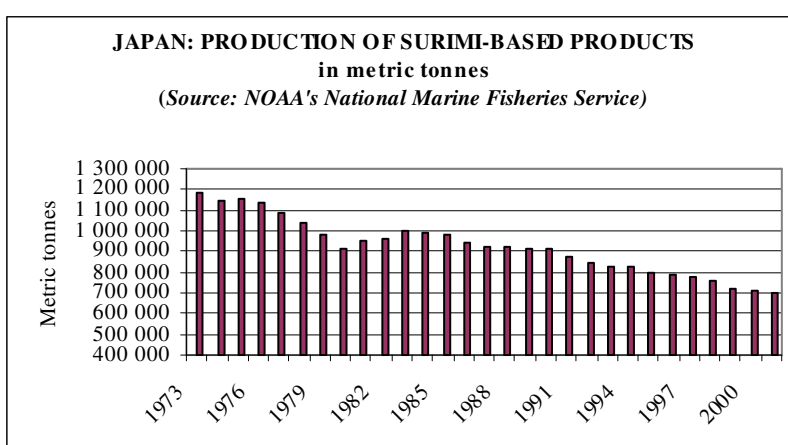
3.2.1. National production

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 3.2-1 and Figure 3.2-1 Japan surimi products production

JAPAN: PRODUCTION OF SURIMI-BASED PRODUCTS in metric tonnes (Source: NOAA's National Marine Fisheries Service)	
1973	1185 100
1974	1148 701
1975	1154 970
1976	1136 747
1977	1086 962
1978	1037 216
1979	976 191
1980	911 141
1981	948 882
1982	960 876
1983	996 171
1984	990 449
1985	983 765
1986	945 300
1987	925 933
1988	920 533
1989	915 831
1990	914 774
1991	873 707
1992	845 356
1993	829 770
1994	822 772
1995	800 916
1996	790 431
1997	772 901
1998	754 459
1999	716 718
2000	706 592
2001	702 920



3.2.2. Surimi products trade

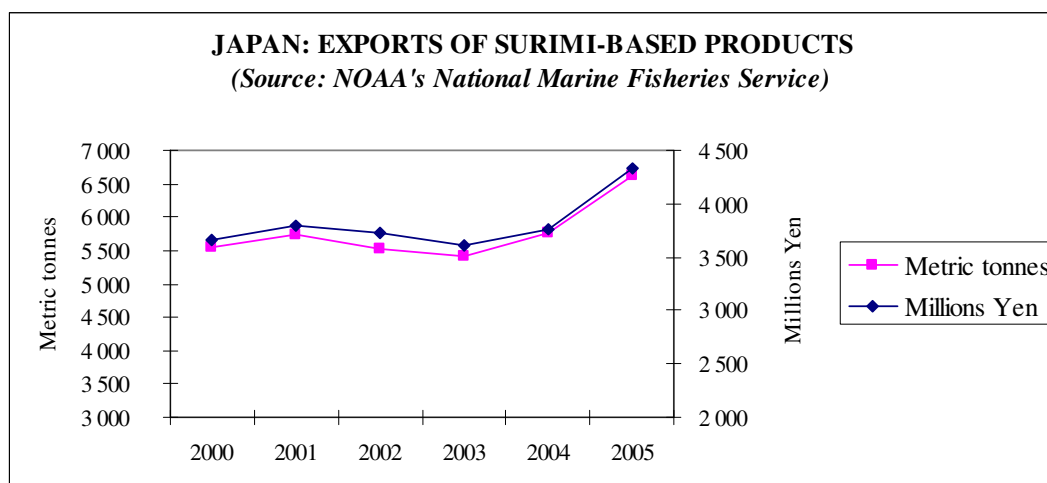
As regards imports of surimi products, it was not possible to find data on this subject.

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

JAPAN: EXPORTS OF SURIMI-BASED PRODUCTS (Source: NOAA's National Marine Fisheries Service)						
	2 000	2 001	2 002	2 003	2 004	2 005
Metric tonnes	5 560	5 738	5 531	5 421	5 752	6 623
Millions Yen	3 654	3 794	3 721	3 606	3 765	4 328

Figure 3.2-2: Japan surimi products export



3.2.3. Consumption trends

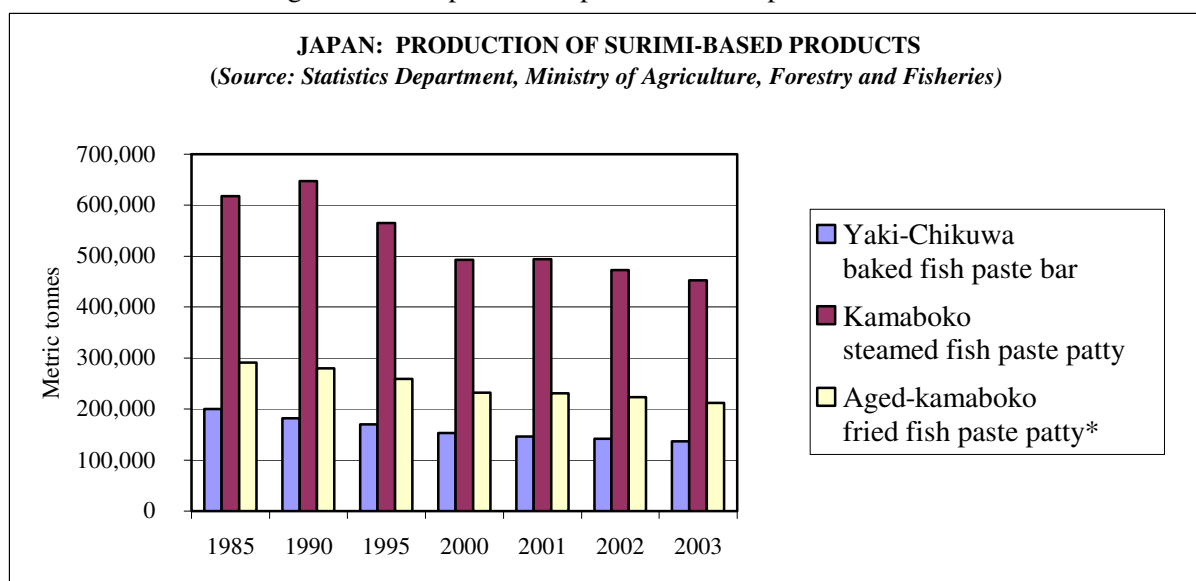
A general category of products known as 'kamaboko', which includes different types of fish patties (in casing, steamed, fried, boiled, flavored), comprise the most important part (70 percent) of the total production of surimi products in Japan. Broiled surimi products and fish ham and sausages comprise 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

JAPAN: PRODUCTION OF SURIMI-BASED PRODUCTS in metric tonnes (Source: Statistics Department, Ministry of Agriculture, Forestry and Fisheries)							
Surimi-based product	1985	1990	1995	2000	2001	2002	2003
Yaki-Chikuwa							
baked fish paste bar	200 000	182 000	170 000	153 000	146 000	142 000	137 000
Kamaboko							
steamed fish paste patty	618 000	647 000	565 000	493 000	494 000	473 000	453 000
Aged-kamaboko							
fried fish paste patty*	291 000	280 000	259 000	232 000	231 000	223 000	212 000

(* This category seems to be included in global kamaboko quantities.)

Figure 3.2-3: Japan surimi products recent production



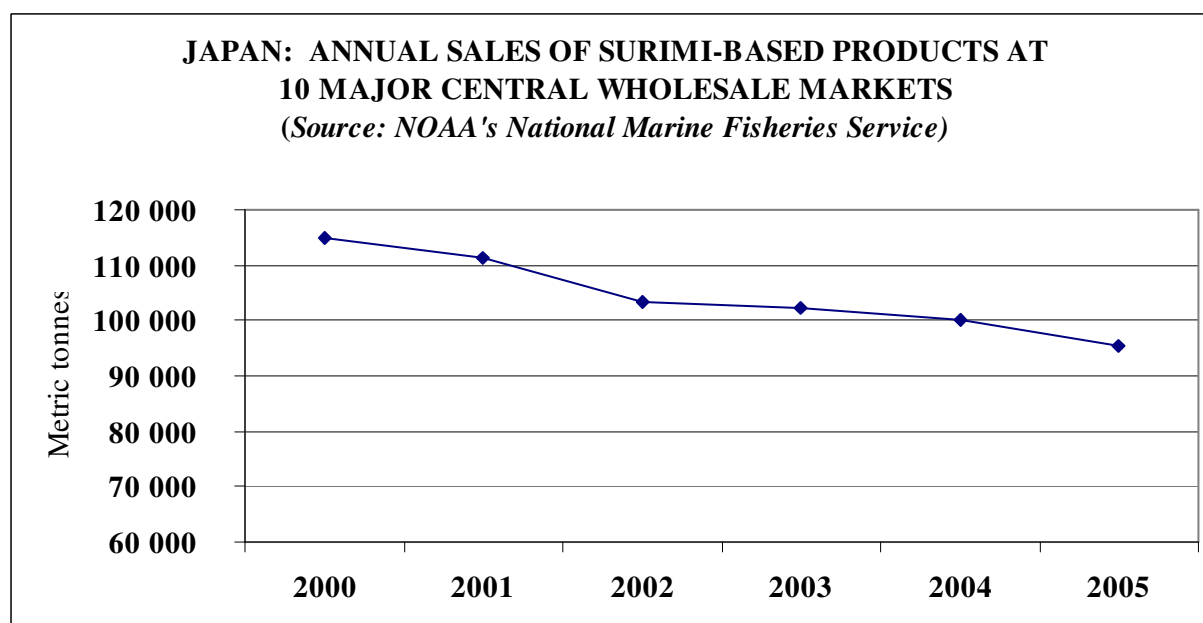
(* This category seems to be included in global kamaboko quantities.)

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

JAPAN: ANNUAL SALES OF SURIMI-BASED PRODUCTS AT 10 MAJOR CENTRAL WHOLESALE MARKETS						
(Source: NOAA's National Marine Fisheries Service)						
	2 000	2 001	2 002	2 003	2 004	2 005
Metric tonnes	115 047	111 244	103 445	102 339	100 105	95 471

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

JAPAN: MONTHLY SALES OF SURIMI-BASED PRODUCTS in metric tonnes AT 10 MAJOR CENTRAL WHOLESALE MARKETS <i>(Source: NOAA's National Marine Fisheries Service)</i>				
Month	2003	2004	2005	2006
January	8 591	8 843	8 482	8 009
February	7 849	8 200	8 087	7 350
March	8 493	8 577	7 934	7 242
April	8 051	7 940	7 576	6 811
May	7 891	7 533	7 073	7 039
June	7 319	7 417	6 784	
July	7 325	6 713	6 479	
August		6 479	6 398	
September	8 054	7 537	7 041	
October	9 956	9 351	8 430	
November	8 893	9 274	8 670	
December	13 024	12 043	12 516	

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

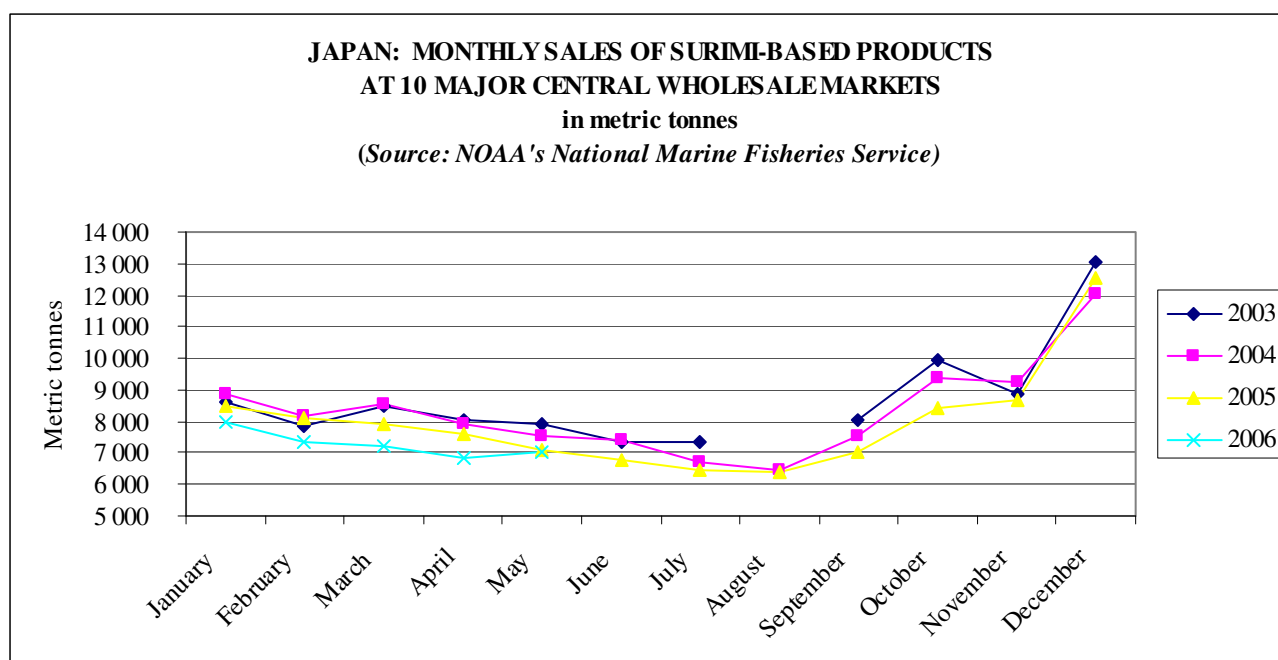
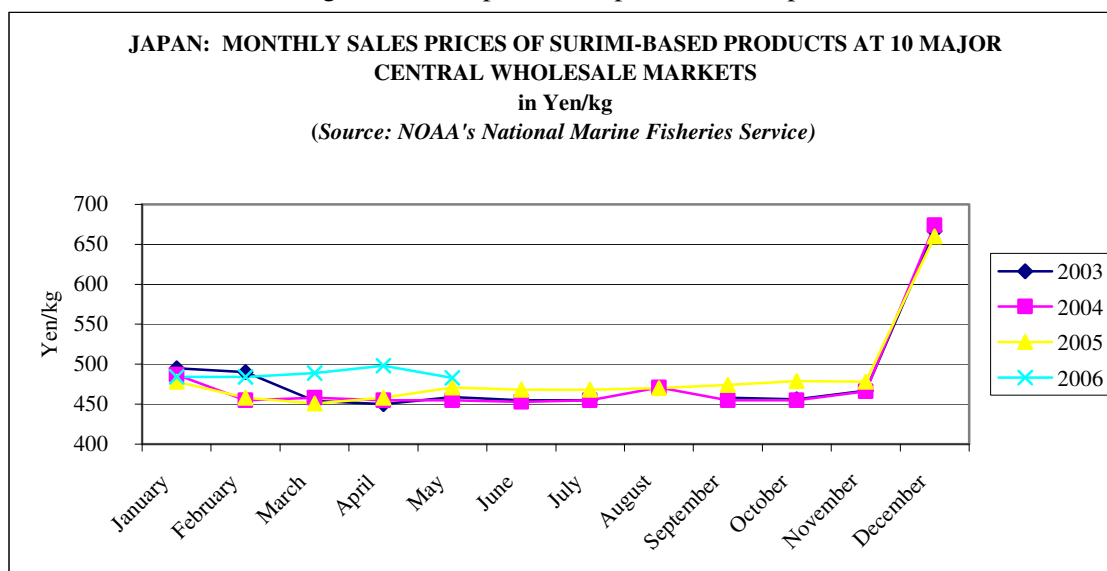


Table 3.2-6: Japan surimi products sales prices

JAPAN: MONTHLY SALES PRICES OF SURIMI-BASED PRODUCTS in Yen/kg AT 10 MAJOR CENTRAL WHOLESALE MARKETS (Source: NOAA's National Marine Fisheries Service)				
Month	2003	2004	2005	2006
January	495	487	478	484
February	490	455	458	484
March	454	458	451	489
April	450	455	458	498
May	459	455	471	483
June	455	453	468	
July	455	455	468	
August		471	470	
September	458	455	474	
October	456	455	479	
November	467	466	478	
December	667	674	660	

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

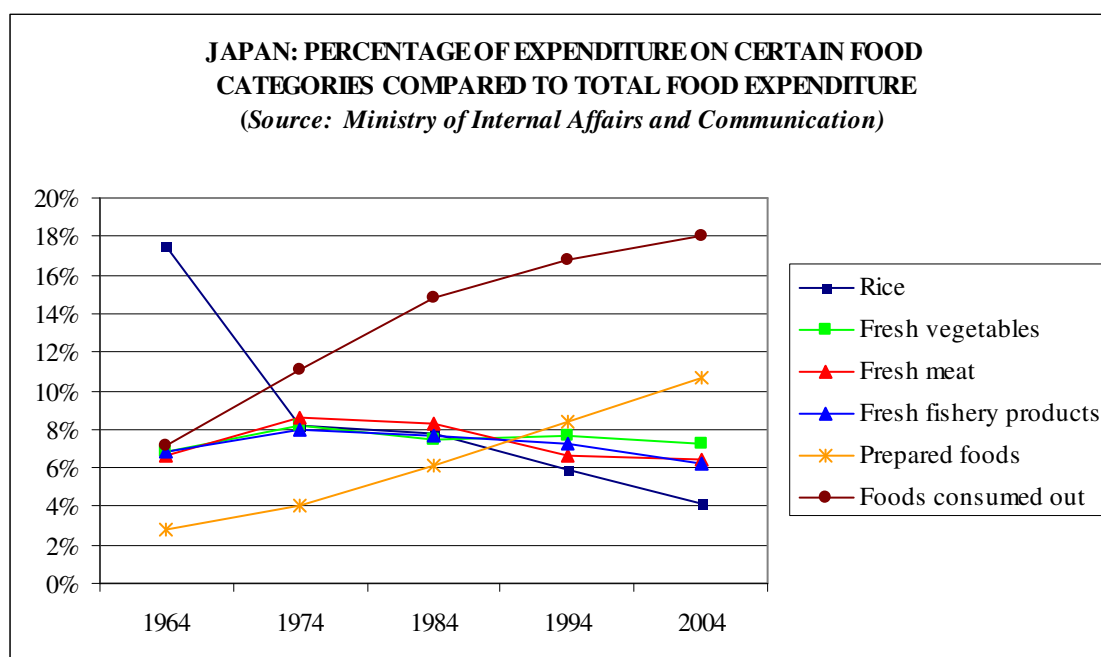
In Japan, as in other developed countries, food distribution and consumer habits follow similar trends (Table 3.2-7 and Figure 3.2-7):

- 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 3.2-7: Japan consumer habits evolution

JAPAN: PERCENTAGE OF EXPENDITURE ON CERTAIN FOOD CATEGORIES COMPARED TO TOTAL FOOD EXPENDITURE					
<i>(Source: Ministry of Internal Affairs and Communication)</i>					
Food items/eating styles	1964	1974	1984	1994	2004
Rice	18%	8%	8%	6%	4%
Fresh vegetables	7%	8%	8%	8%	7%
Fresh meat	7%	9%	8%	7%	6%
Fresh fishery products	7%	8%	8%	7%	6%
Prepared foods	3%	4%	6%	8%	11%
Foods consumed out	7%	11%	15%	17%	18%

Figure 3.2-7: Japan consumer habits evolution



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

EXAMPLE OF A SOUTH KOREAN PRODUCER'S RANGE OF SURIMI PRODUCTS (Source: <i>Blue-is Inc.</i>)			
Product	Size	Surimi %	Pack
Imitation crabmeat stick	3.5 inch, 5 inch	32,34, 38, 40, 42, 48	120 g, 250 g, 500 g
Imitation crabmeat flake	2–2.5 cm		250 g, 500g, 1 kg
Imitation crabmeat bite	1–1.5 cm		500 g, 1 kg
Imitation crabmeat shredded		48	500 g, 1 kg
Imitation breaded crab claw	33 g/piece	48, 50, 58	250 g, 330 g, 500 g, 1 kg
Imitation breaded scallop meat	25 g/piece	48	2 lb, 5 lb
Imitation lobster tail meat	85 g/piece	50, 58	250 g, 500 g
Imitation shrimp tail meat	27 g/piece	50,58	250 g, 500 g
Imitation lobster claw meat	33–35 g	58	250 g, 500 g, 1 kg
Imitation crab claw meat	13–15 g	58	250 g, 500 g, 1 kg
Imitation cocktail of snow crab claw	10–15 piece/kg ->26–30piece/kg	68	500 g, 1 kg

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)

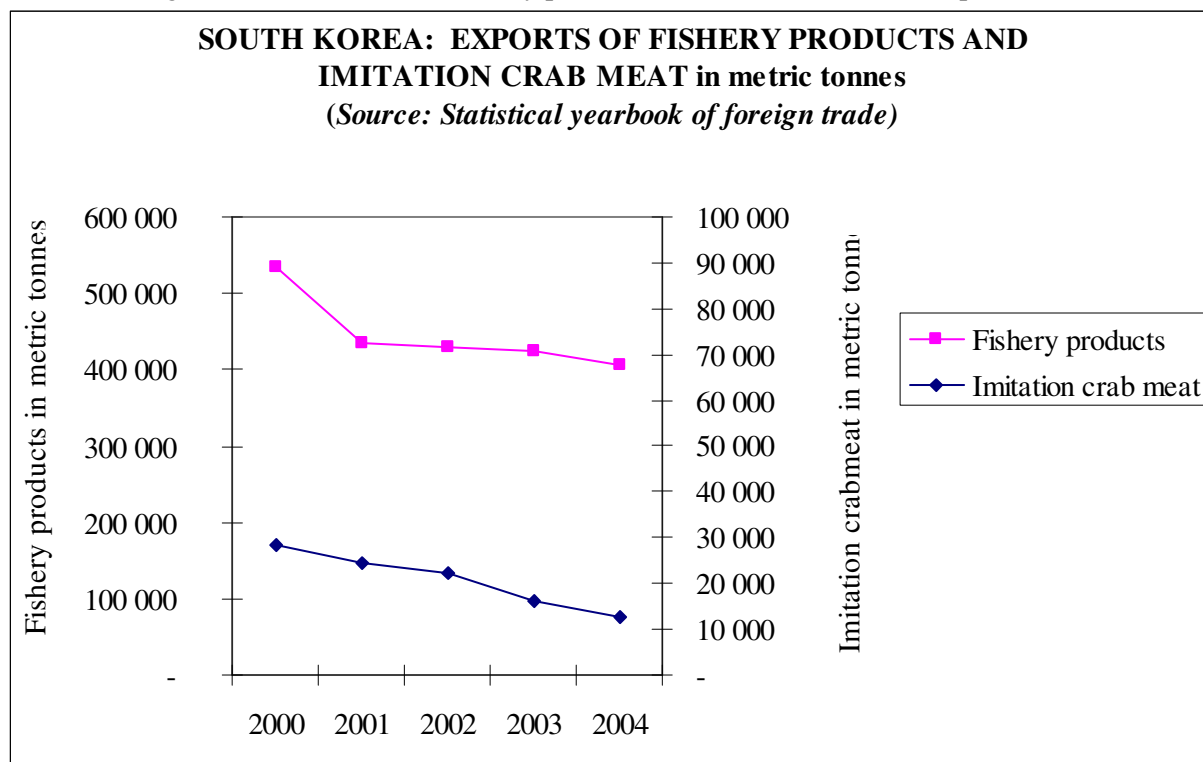
Korean export of surimi products has dramatically decreased during the last five years from 28 566 metric tonnes in 2000 to 12 599 metric tonnes in 2004. This trend is confirmed by EU

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					
<i>(Source: Statistical yearbook of foreign trade)</i>					
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

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

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

Minced products	Surimi minced crab sticks Surimi minced crab bites
Moulded products	Surimi shrimp tails Surimi breaded shrimp tails Surimi crab tails Surimi lobster balls Surimi lobster tails
New products	Japanese style artificial shark fins Breaded cheese balls Breaded surimi fritters, coin shape Surimi fish cakes Tom yun burgers Prefried cheese balls Surimi buns, curry filling Cuttlefish balls

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

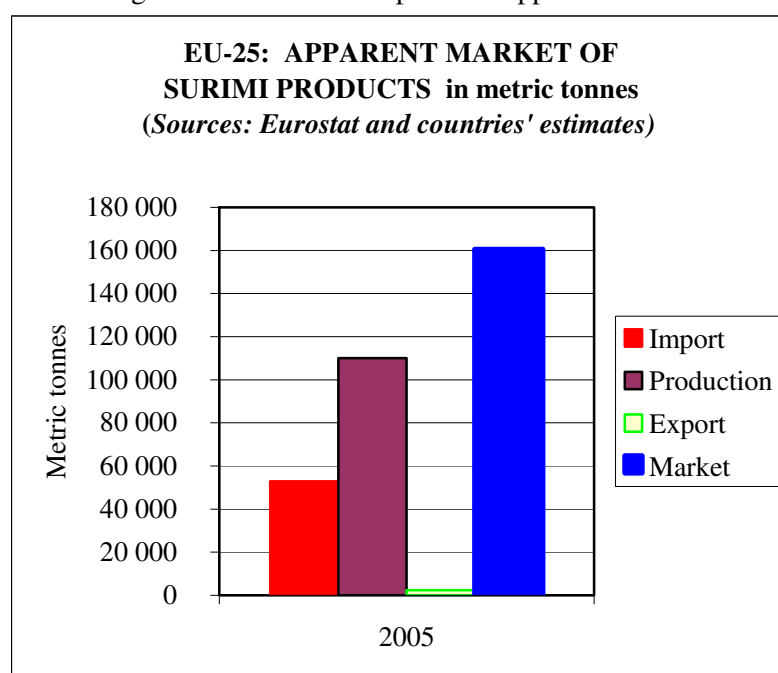
Total EU-25 production of surimi products is roughly estimated at around 100 000–110 000 metric tonnes per year.

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

EU-25: APPARENT MARKET OF SURIMI PRODUCTS in metric tonnes (Sources: Eurostat & countries' estimates)	
	2005
Import	52 907
Production	110 000
Export	2 348
Market	160 559

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:

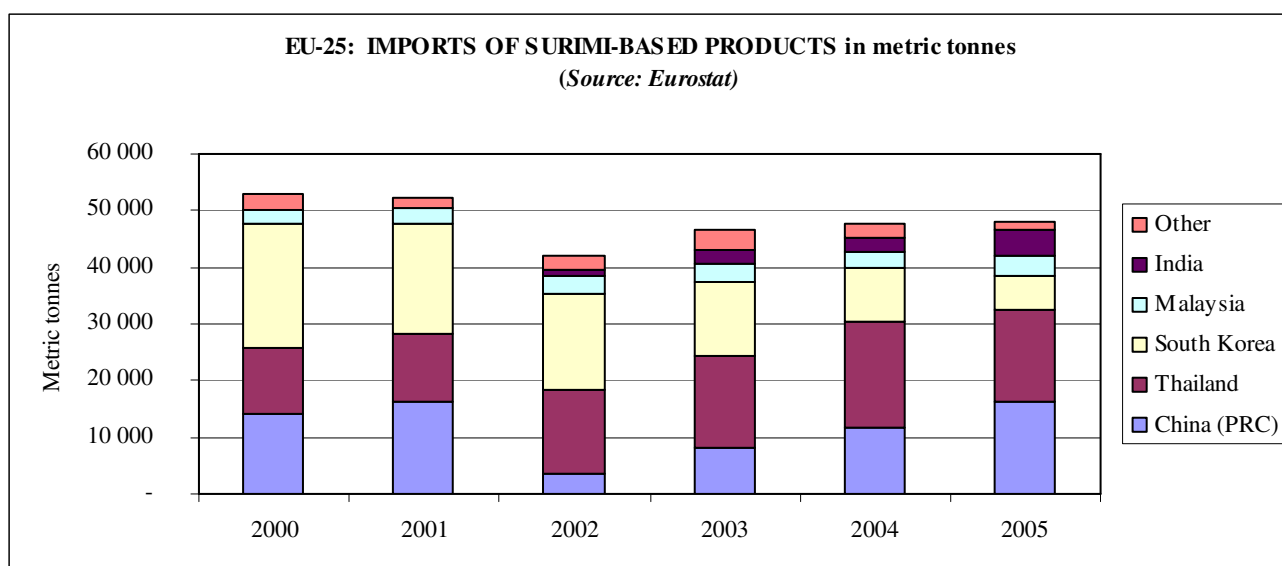
- China, which is recovering from its pre-2002 drop in exports to the EU,
- Thailand, whose exports to the EU seem to be leveling off after continuous growth,
- the Republic of Korea, which is experiencing a huge decrease in sales, and
- new countries such as Malaysia and India, which have taken market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

EU-25: IMPORTS OF SURIMI-BASED PRODUCTS in metric tonnes						
<i>(Source: Eurostat)</i>						
Country	2000	2001	2002	2003	2004	2005
China (PRC)	14 290	16 206	3 667	7 945	11 709	16 316
Thailand	11 393	12 134	14 702	16 280	18 508	16 137
South Korea	21 827	19 190	17 072	13 258	9 751	5 932
Malaysia	2 588	2 943	2 861	3 121	2 677	3 746
India			1 266	2 596	2 442	4 293
Other	2 809	1 751	2 567	3 285	2 588	1 619
TOTAL	52 907	52 224	42 135	46 485	47 675	48 043

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

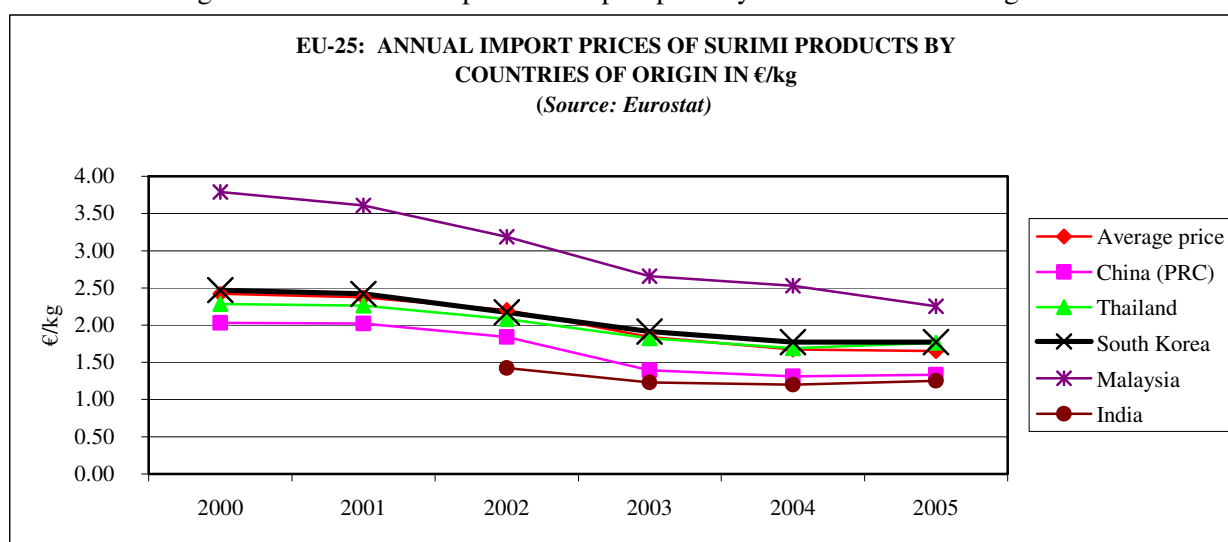


Import prices of surimi products have significantly declined since 2000. Great price differences exist among the various countries of origin. India is the cheapest country of origin with an average annual price difference of €1/kg less than Malaysia (Table 3.7-3 and Figure 3.7-3).

Table 3.7-3: EU surimi products import price by main countries of origin

EU-25: ANNUAL IMPORT PRICES OF SURIMI PRODUCTS BY COUNTRIES OF ORIGIN in €/kg						
<i>(Source: Eurostat)</i>						
	2000	2001	2002	2003	2004	2005
Average price	2.42	2.37	2.20	1.84	1.67	1.65
China (PRC)	2.03	2.02	1.84	1.39	1.31	1.33
Thailand	2.28	2.26	2.08	1.82	1.69	1.76
South Korea	2.47	2.42	2.17	1.91	1.77	1.77
Malaysia	3.79	3.61	3.19	2.66	2.53	2.25
India			1.42	1.23	1.20	1.25

Figure 3.7-3: EU surimi products import price by main countries of origin



India seems to have replaced China as the country of cheapest origin. This could explain its growing market share in the EU.

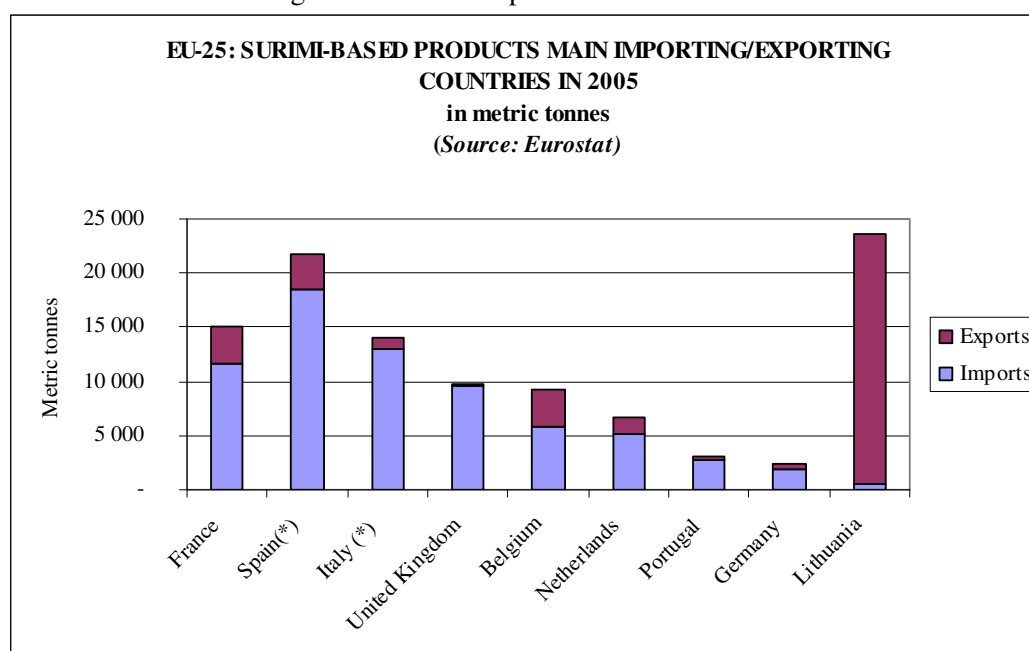
The main EU importing countries are France, Spain and Italy and, at a lower level, the United Kingdom. Belgium plays a role as a re-exporting country (Table 3.7-4 and Figure 3.7-4).

Table 3.7-4: surimi products main EU countries

EU-25: SURIMI-BASED PRODUCTS MAIN IMPORTING/EXPORTING COUNTRIES IN 2005		
<i>(Source: Eurostat) in metric tonnes</i>		
Country	Imports	Exports
France	11 723	3 388
Spain(*)	18 533	3 171
Italy (*)	13 013	947
United Kingdom	9 674	76
Belgium	5 844	3 337
Netherlands	5 169	1 516
Portugal	2 813	260
Germany	1 949	485
Lithuania	550	23 100

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

Figure 3.7-4: surimi products main EU countries



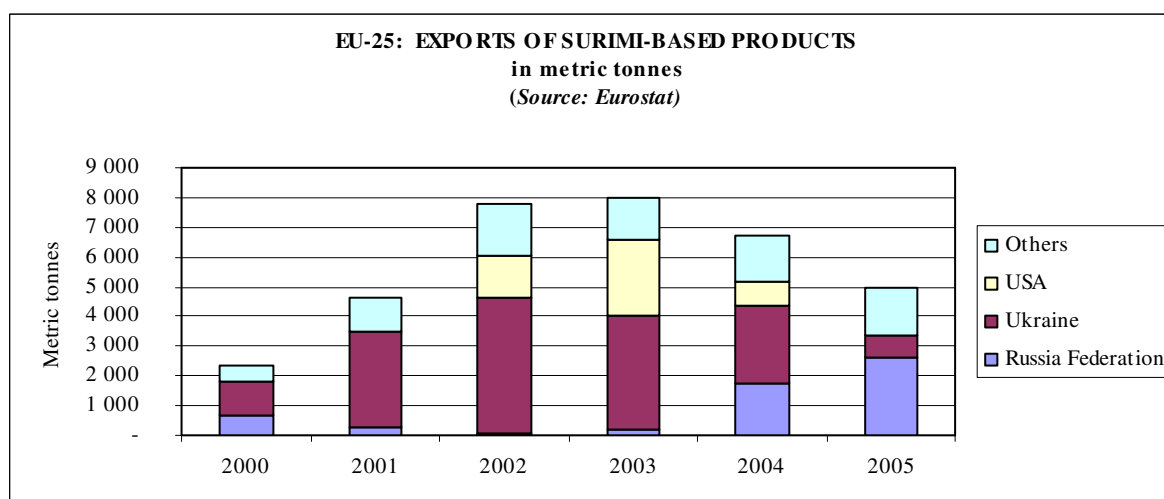
(* No imports from Lithuania are reported in Italian and Spanish import statistics. Data here are extracted from Lithuanian export statistics.)

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

EU-25: EXPORTS OF SURIMI-BASED PRODUCTS in metric tonnes						
(Source: Eurostat)						
Country	2000	2001	2002	2003	2004	2005
Russia Federation	688	262	54	186	1 722	2 641
Ukraine	1 125	3 208	4 590	3 821	2 667	698
USA			1 402	2 602	770	
Others	535	1 157	1 714	1 376	1 540	1 649
TOTAL	2 348	4 627	7 760	7 985	6 699	4 988

Figure 3.7-5: EU surimi products export



3.8. France

3.8.1. National production

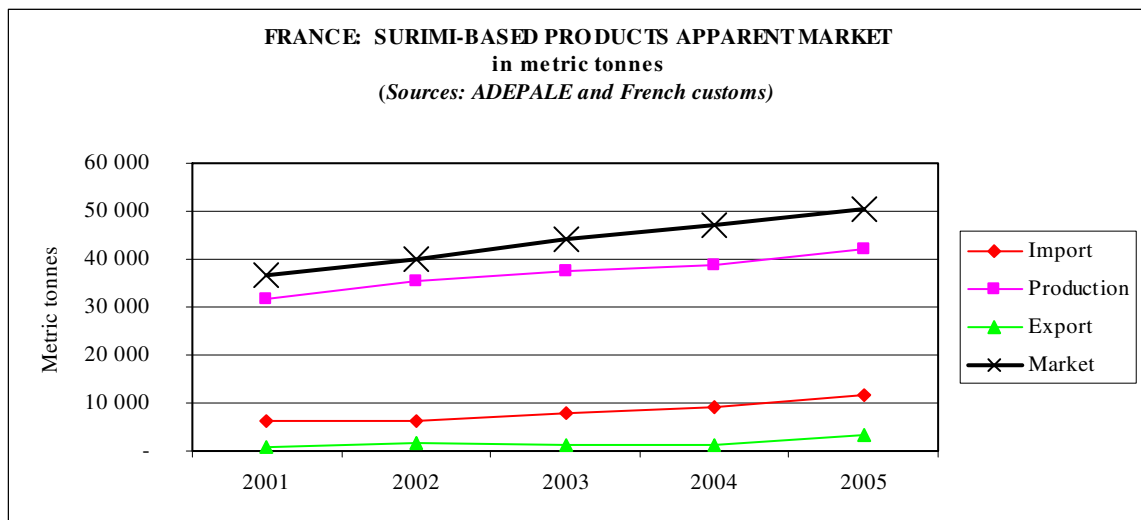
In France, part of production is based on the 10 000 metric tonnes of surimi raw material from the country's own producers. The rest comes from the processing of 18 600 metric tonnes, imported mainly from the United States of America and Chile.

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 3.8-1: French surimi products apparent market

FRANCE: SURIMI-BASED PRODUCTS APPARENT MARKET in metric tonnes					
<i>(Sources: ADEPALE and French customs)</i>					
	2001	2002	2003	2004	2005
Import	6 088	6 112	7 763	9 375	11 754
Production	31 600	35 572	37 625	38 900	42 200
Export	983	1 608	1 340	1 184	3 397
Market	36 705	40 076	44 048	47 091	50 557

Figure 3.8-1: French surimi products apparent market



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.

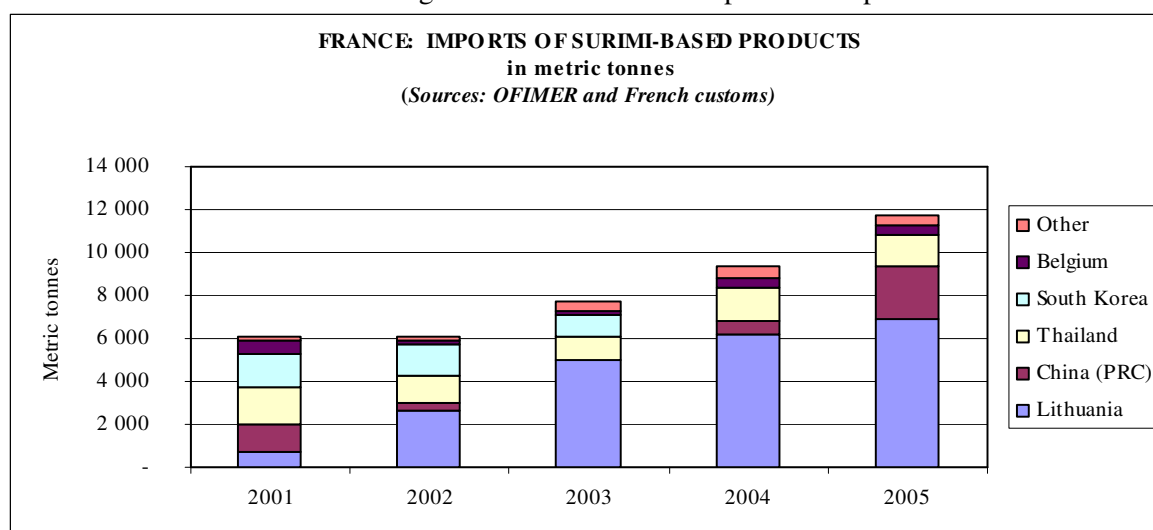
The main supplier to France continues to be Lithuania with imports of low-priced products.

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

Table 3.8-2: France surimi products import

FRANCE: IMPORTS OF SURIMI-BASED PRODUCTS in metric tonnes (Sources: OFIMER and French customs)					
Country	2001	2002	2003	2004	2005
Lithuania	765	2 594	5 001	6 153	6 913
China (PRC)	1 268	413	-	678	2 458
Thailand	1 730	1 276	1 099	1 573	1 431
South Korea	1 499	1 479	970	-	-
Belgium	629	115	214	374	466
Other	197	235	479	597	486
TOTAL	6 088	6 112	7 763	9 375	11 754

Figure 3.8-2: France surimi products import



- Exports (Table 3.8-3 and Figure 3.8-3)

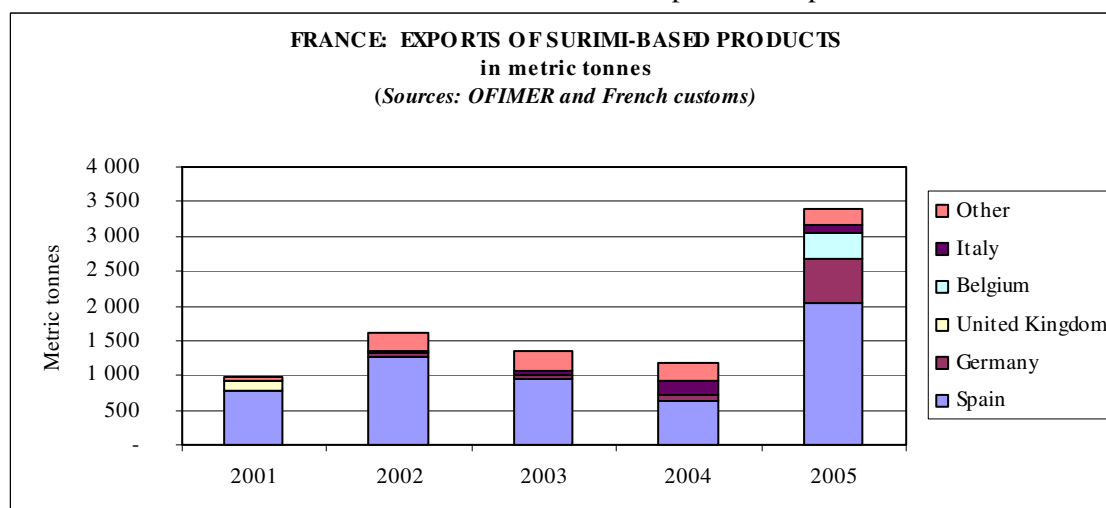
Exports of French surimi products represent only 8 percent of the country's production.

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

FRANCE: EXPORTS OF SURIMI-BASED PRODUCTS in metric tonnes (Sources: OFIMER and French customs)					
Country	2001	2002	2003	2004	2005
Spain	776	1,277	937	631	2,043
Germany	-	37	58	76	624
United Kingdom	141	-	26	-	-
Belgium	-	49	-	-	369
Italy	18	-	45	215	124
Other	48	245	274	262	237
TOTAL	983	1 608	1 340	1 184	3 397

Table 3.8-3: France surimi products export



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 3.8-4: Market share of chilled surimi products

FRANCE: MARKET SHARE OF SHILLED AND FROZEN SURIMI PRODUCTS (Source: ADISUR)						
Surimi product	1994	1996	1998	2000	2002	2003
Chilled	63%	72%	81%	85%	94%	95%
Frozen	37%	28%	19%	15%	6%	5%

Figure 3.8-4: Market share of chilled surimi products

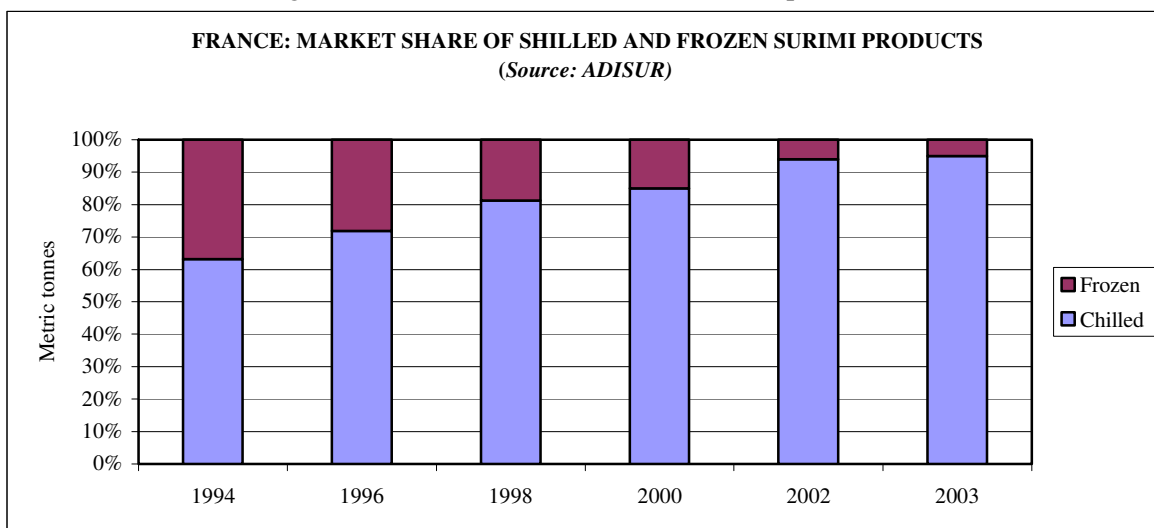
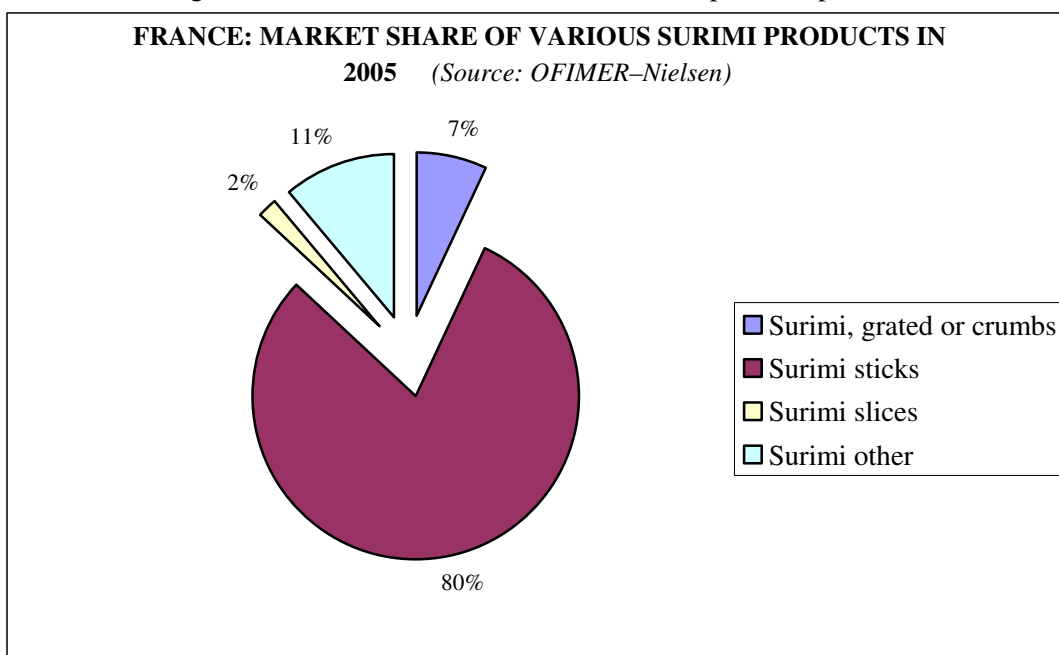


Table 3.8-5: Market share of different surimi products presentation

FRANCE: MARKET SHARE OF VARIOUS SURIMI PRODUCTS IN 2005 (Source: OFIMER–Nielsen)	
Product	Market Share
Surimi, grated or crumbs	7%
Surimi sticks	80%
Surimi slices	2%
Surimi other	11%

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



- 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

EXAMPLE OF ASSORTMENT OF SURIMI PRODUCTS IN FRENCH SUPERMARKET				
Product	Type of product/origin	Weight g	Price/unit €	Price/kg €
Chilled seafood elaborated products				
Shredded surimi	Producer brand/France	400	5.65	14.13
Shredded surimi	Producer brand/France	200	2.65	13.75
Slices ‘ham type’	Producer brand/France	200	3.50	17.50
Small sticks + sauce	Producer brand/France	230	3.25	14.13
Small sticks + sauce	Producer brand/France	460	4.95	9.17
Sticks/12 pieces	Producer brand/France	200	2.57	12.85
Sticks/28 pieces	Producer brand/France	576	4.95	8.61
High-quality sticks/18 pieces	Producer brand/France	300	4.95	16.50
Sticks/12 pieces	Retailer brand/Spain	200	1.70	8.50
Sticks/30 pieces	Retailer brand/Spain	500	3.52	7.04
Sticks/28 pieces	Low-price brand/Spain	400	1.90	4.75
Frozen products				
Sticks	Low-price brand/China	500	1.50	4.29

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

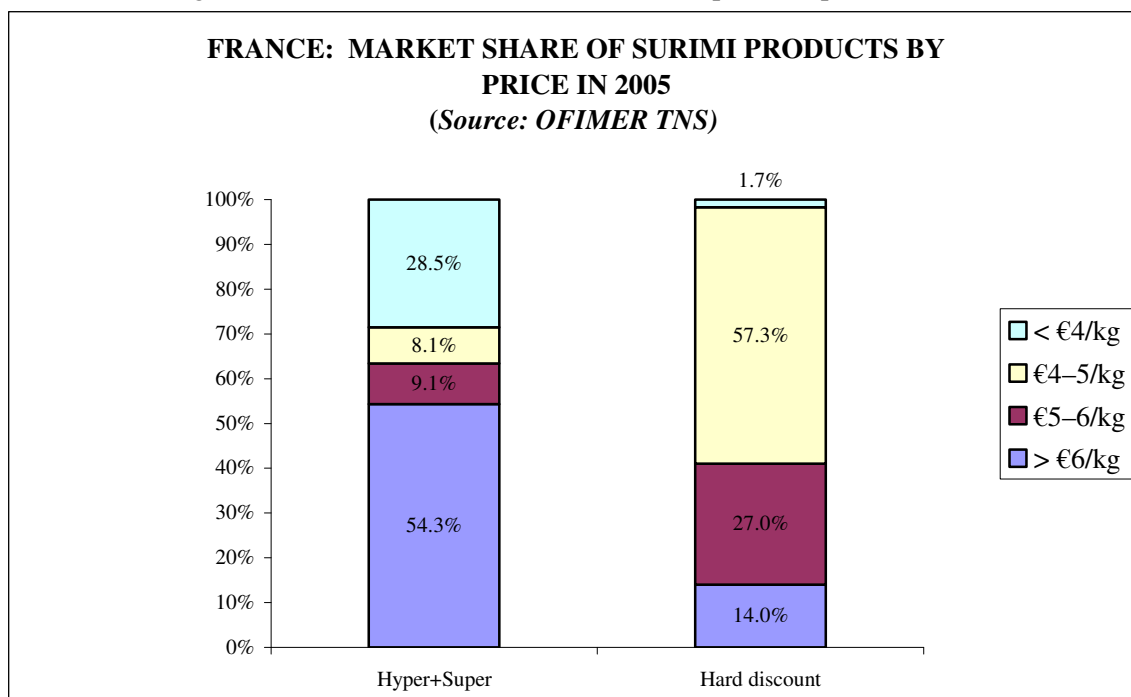
As for other food products, prices are quite different between hyper- and supermarkets and hard discounters (Table 3.8-7 and Figure 3.8-7).

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		
<i>(Source: OFIMER–TNS)</i>		
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%

Figure 3.8-6: Market share of different surimi products prices



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

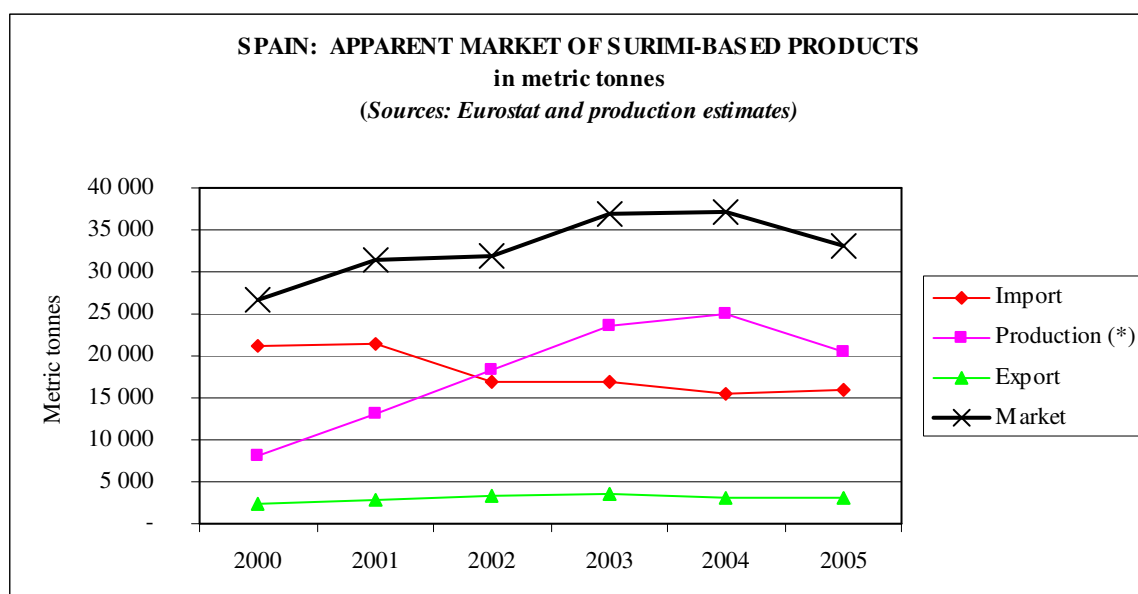
Spain’s production of surimi-based products is estimated at 20 400 metric tonnes, which amounts to more than 60 percent of the domestic market (Table 3.9-1 and Figure 3.9-1).

Table 3.9-1: Spain surimi products apparent market

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

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

Figure 3.9-1: Spain surimi products apparent market



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

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.

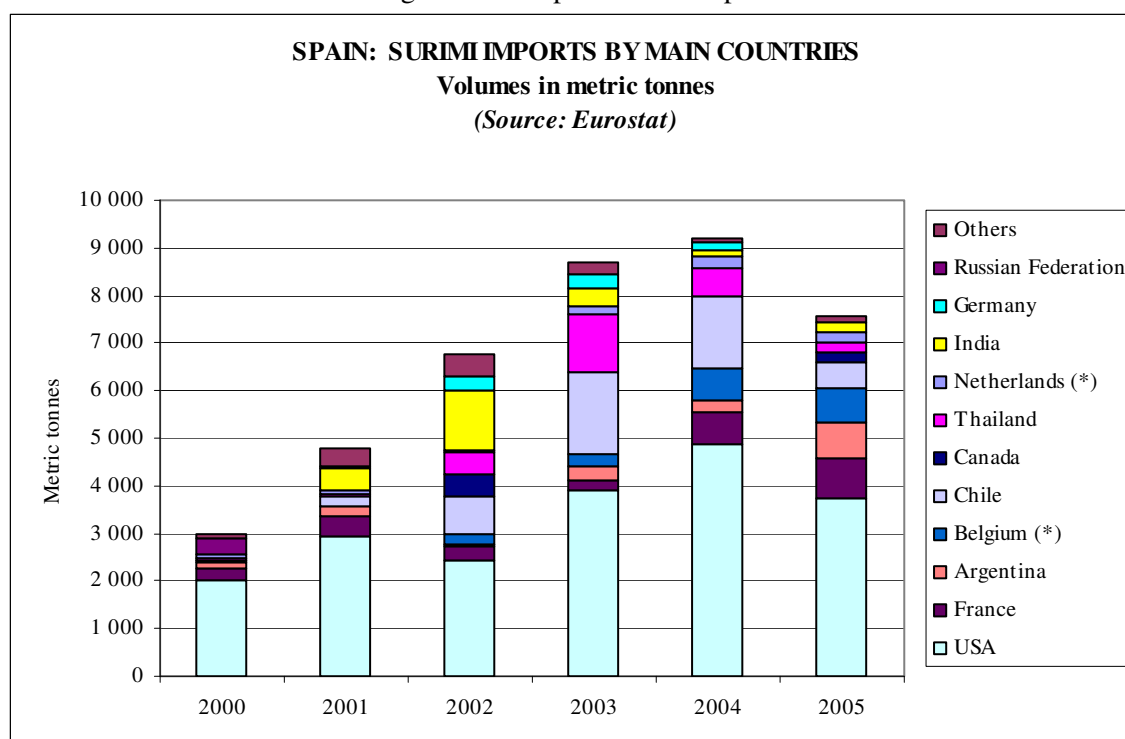
The surimi import statistics show that after having tested surimi from various countries, Spanish producers selected the United States of America, France, Argentina and Chile as their main suppliers (Table 3.9-2 and Figure 3.9-2).

Table 3.9-2: Spain surimi imports

SPAIN: SURIMI IMPORTS BY MAIN COUNTRIES Volumes in metric tonnes						
<i>(Source: Eurostat)</i>						
Country	2000	2001	2002	2003	2004	2005
USA	1 999	2 961	2 444	3 893	4 878	3 732
France	254	405	286	241	665	845
Argentina	128	198	25	261	236	753
Belgium (*)			224	285	686	714
Chile	75	219	807	1 725	1 523	548
Canada			447			200
Thailand	36	36	452	1 217	574	225
Netherlands (*)	52	79	57	171	241	226
India	24	460	1 272	355	130	188
Germany			271	308	179	
Russian Federation	320	60				
Others	113	392	492	54	104	122
TOTAL	3 001	4 810	6 777	8 710	9 216	7 553

(* 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.

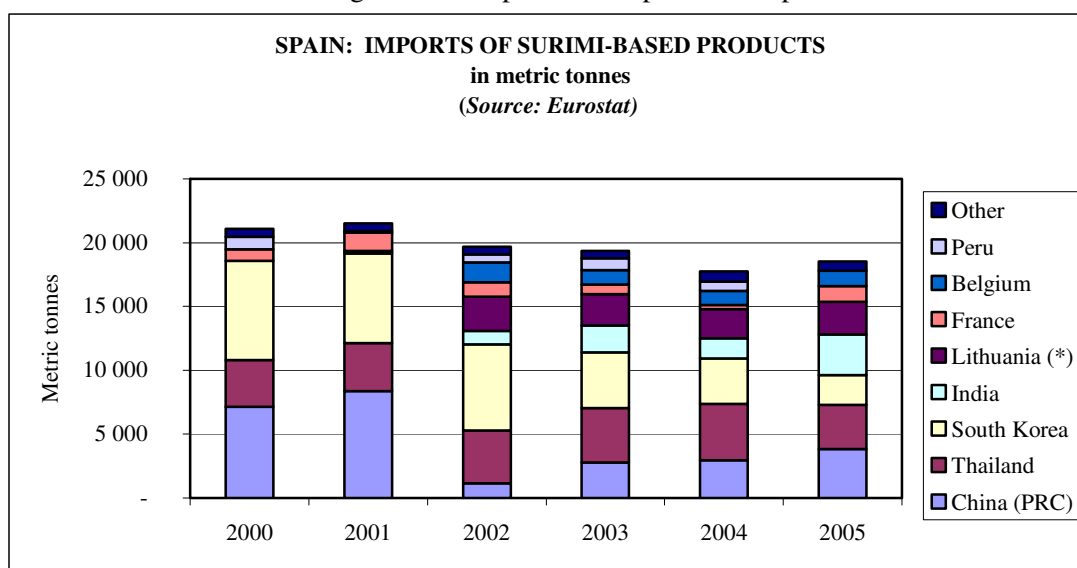
Imports from the Republic of Korea have declined steadily in Spain as well as in every other European country. Market share of Lithuanian products in Spanish is growing rapidly, either through direct imports or through imports coming indirectly via Belgium.

Table 3.9-3: Spain surimi products import

SPAIN: IMPORTS OF SURIMI-BASED PRODUCTS in metric tonnes						
<i>(Source: Eurostat)</i>						
Country	2000	2001	2002	2003	2004	2005
China (PRC)	7 149	8 357	1 145	2 775	2 967	3 823
Thailand	3 641	3 755	4 137	4 270	4 400	3 473
South Korea	7 801	7 060	6 743	4 357	3 552	2 323
India			1 051	2 091	1 583	3 176
Lithuania (*)		190	2 708	2 491	2 266	2 552
France	910	1 418	1 119	747	339	1 249
Belgium			1 551	1 139	1 125	1 212
Peru	970	129	631	921	717	
Other	621	616	602	567	818	725
TOTAL (*)	21 092	21 525	19 687	19 358	17 767	18 533

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

Figure 3.9-3: Spain surimi products import



(* 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)

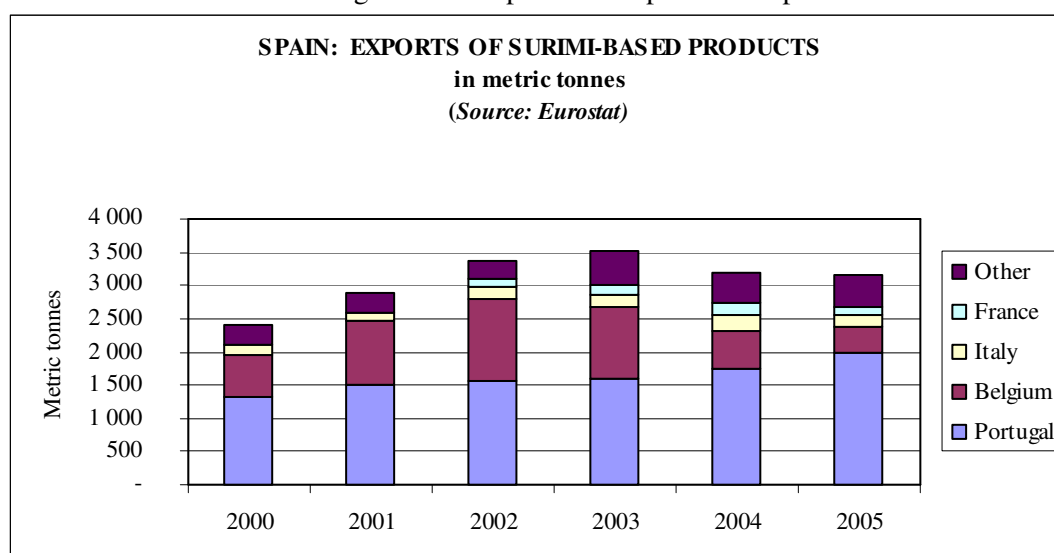
Spain is exporting more and more surimi products to Portugal (2 000 metric tonnes in 2005).

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

SPAIN: EXPORTS OF SURIMI-BASED PRODUCTS in metric tonnes						
<i>(Source: Eurostat)</i>						
Country	2 000	2 001	2 002	2 003	2 004	2 005
Portugal	1 313	1 495	1 577	1 601	1 755	1 972
Belgium	638	985	1 225	1 080	548	414
Italy	143	97	164	168	257	157
France			120	149	191	142
Other	315	318	282	518	423	486
TOTAL	2 409	2 895	3 368	3 516	3 174	3 171

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 3.9-5: penetration ratio of surimi products among Spanish households

PENETRATION RATIO OF SURIMI PRODUCTS AMONG SPANISH HOUSEHOLDS			
<i>(Source: FROM)</i>			
Consumption frequency	Purchasing households %	Commercial restaurant consumption %	Canteen and refectory consumption %
Daily	2	22	3
2–3 times/week	12	21	7
1 time/week	22	8	22
1 time/2–3 weeks	16	5	12
1 time/month	9	30	7
1 time/2–3 months	6		43
A few times or not at all/year	28		

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 Mayo, El Angulero de Aguinaga and Nakulas are smaller producers which specialize in imitation glass eel surimi.

Importers/brokers

- Interliment, 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 Costazur.

- 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*

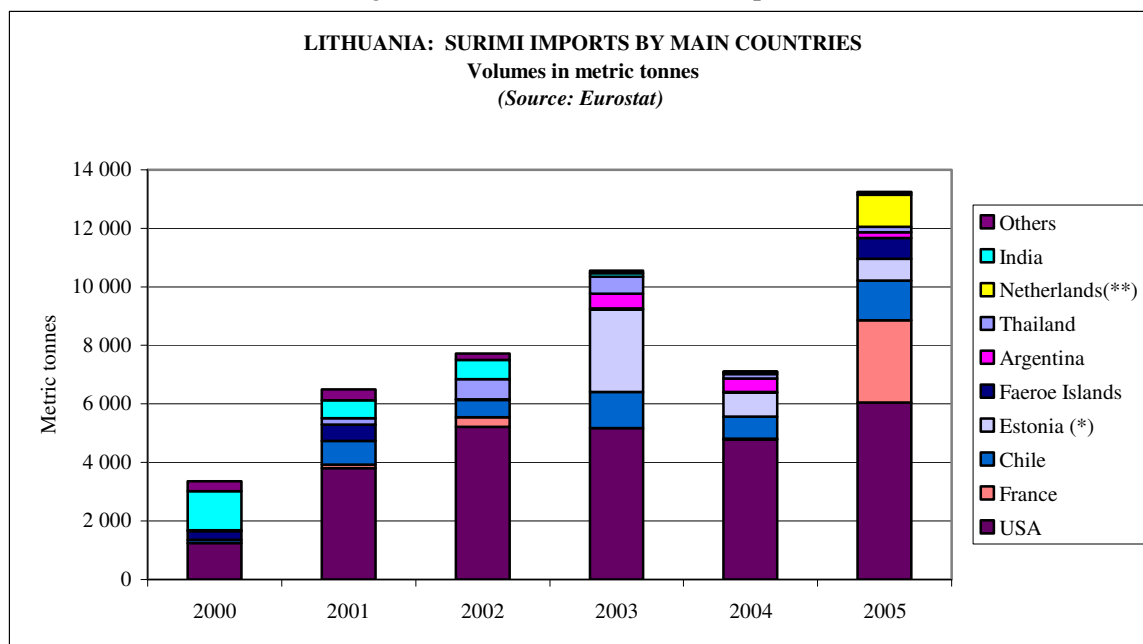
In the last five years, the European landscape of surimi products changed dramatically because of the explosive growth of Lithuanian production. Thanks to the Viciunai Group, Lithuania's production, which began almost from scratch in 2000, should reach around 35 000 metric tonnes in 2006 (estimate based 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 Netherlands'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 Pêches 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

LITHUANIA: SURIMI IMPORTS BY MAIN COUNTRIES				Volumes in metric tonnes		
(Source: Eurostat)						
Country	2000	2001	2002	2003	2004	2005
USA	1 247	3 803	5 217	5 173	4 781	6 043
France		123	320		23	2 823
Chile	113	803	590	1 235	762	1 358
Estonia (*)				2 816	819	734
Faeroe Islands	288	566		44	24	712
Argentina			25	500	453	197
Thailand	34	216	690	580	150	187
Netherlands(**)					72	1 093
India	1 337	609	652	125		75
Others	337	370	225	79	24	19
TOTAL	3 356	6 490	7 719	10 552	7 108	13 241
(* Mainly re-export from the USA and Thailand.)			(** Mainly re-export from the USA and the Faeroe Islands.)			

Figure 3.10-1: Lithuania surimi imports



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

3.10.2. Surimi products trade

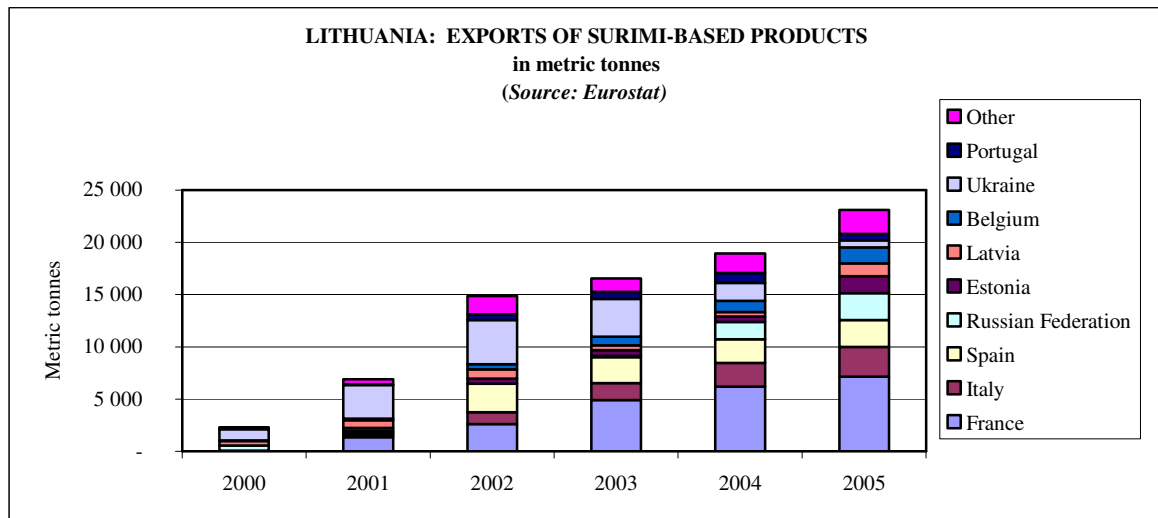
It is a well-known fact that most of Lithuanian production is exported to Europe. According to EU statistics, Lithuanian exports of surimi products are estimated to be a mere 23 000 metric tonnes, which is only 65 percent of total production. It is suspected that reported Eurostat figures on Lithuanian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

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

Figure 3.10-2: Lithuania surimi products export



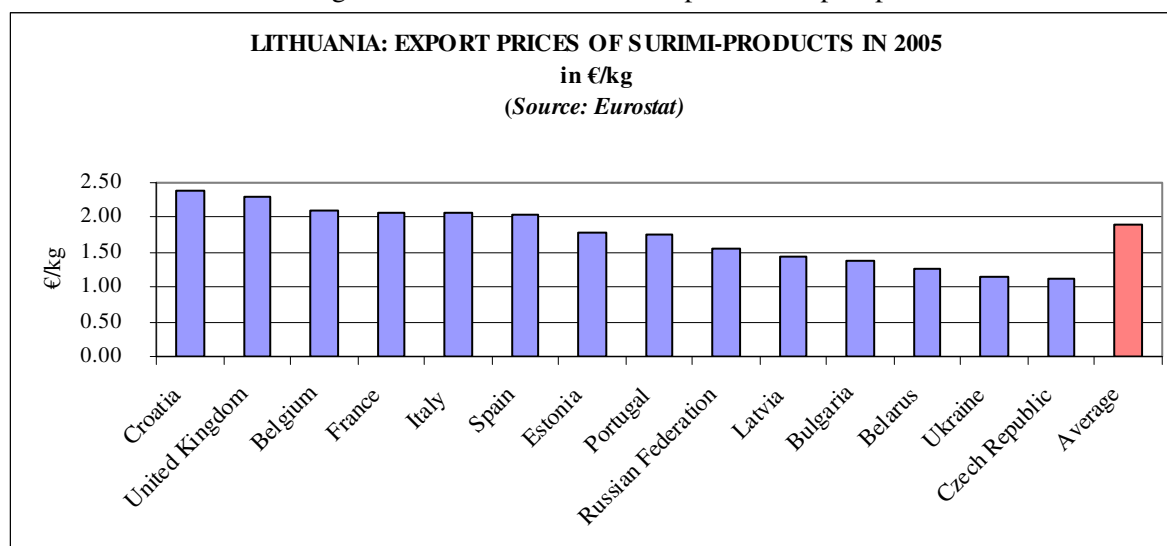
Other important markets for Lithuania are Eastern European countries and the former Soviet Union members, including Czech Republic, Slovakia, Bulgaria, the Russian Federation, as already mentioned, Belarus and Ukraine.

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

LITHUANIA: EXPORT PRICES OF SURIMI-PRODUCTS IN 2005 in €/kg	
<i>(Source: Eurostat)</i>	
Croatia	2.38
United Kingdom	2.30
Belgium	2.11
France	2.07
Italy	2.07
Spain	2.04
Estonia	1.78
Portugal	1.74
Russian Federation	1.54
Latvia	1.43
Bulgaria	1.39
Belarus	1.26
Ukraine	1.16
Czech Republic	1.13
Average	1.89

Figure 3.10-3: Lithuania surimi products export prices



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.

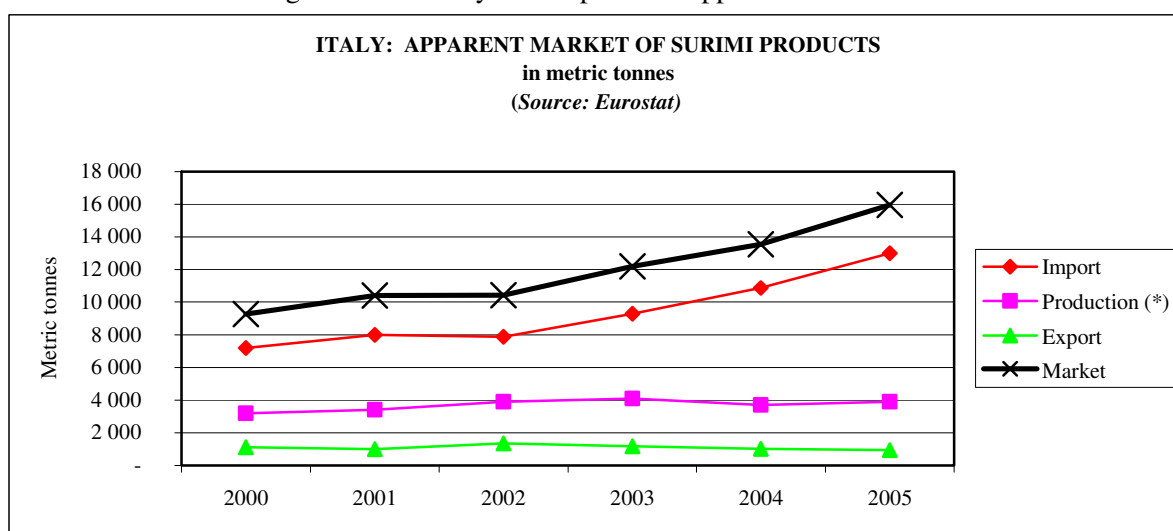
Production of surimi-based products is estimated at approximately 4 000 metric tonnes (based on surimi import figures and assuming a 37 percent average surimi content in final products)(Table 3.11-1 and Figure 3.11-1).

Table 3.11-1: Italy surimi products apparent market

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

(* 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:

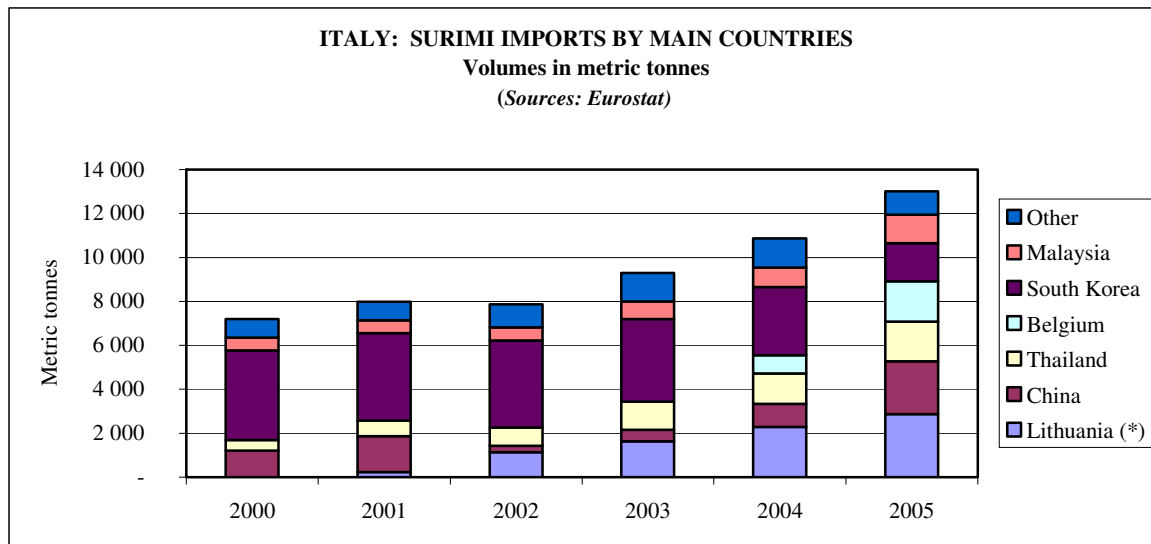
- increasing supplies once again from China as it makes a comeback,
- decreasing supplies from the Republic of Korea,
- increasing supplies from Thailand, and
- increasing supplies from Malaysia.

Table 3.11-2: Italy surimi products import

ITALY: SURIMI IMPORTS BY MAIN COUNTRIES			Volumes in metric tonnes			
(Source: Eurostat)						
Country	2000	2001	2002	2003	2004	2005
Lithuania (*)		229	1 128	1 624	2 281	2 867
China	1 208	1 635	293	528	1 046	2 402
Thailand	484	717	841	1 288	1 384	1 811
Belgium					828	1 837
South Korea	4 075	3 970	3 955	3 743	3 126	1 743
Malaysia	579	585	590	825	883	1 295
Other	836	848	1 064	1 285	1 327	1 058
TOTAL	7 182	7 984	7 871	9 293	10 875	13 013

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

Figure 3.11-2: Italy surimi products import



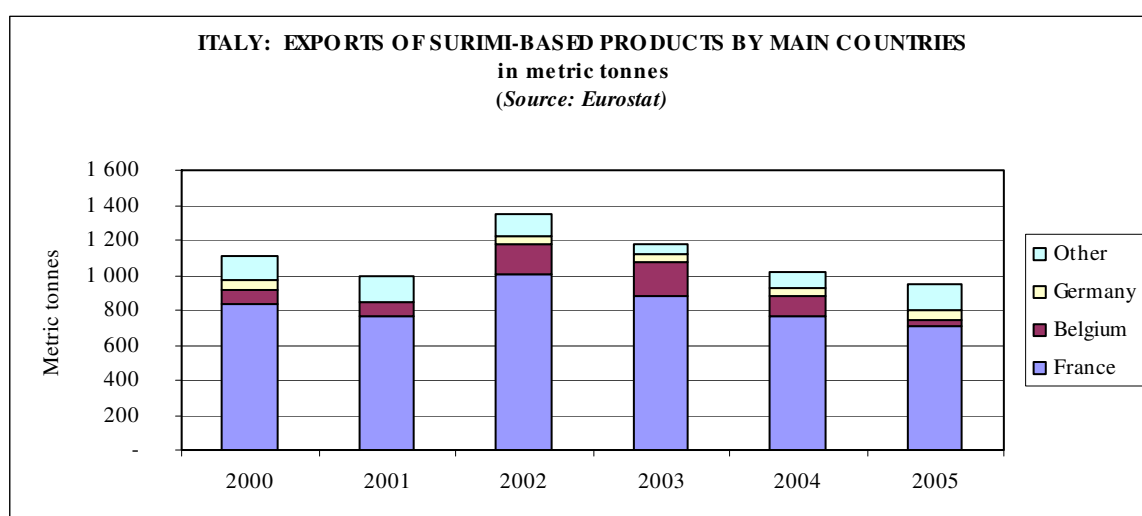
(* Imports from Lithuania are extracted from Lithuanian export statistics.)

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

ITALY: EXPORTS OF SURIMI-BASED PRODUCTS BY MAIN COUNTRIES in metric tonnes						
<i>(Source: Eurostat)</i>						
Country	2000	2001	2002	2003	2004	2005
France	829	763	1 003	880	771	712
Belgium	90	85	174	191	105	27
Germany	56		44	51	53	58
Other	135	143	130	59	86	151
TOTAL	1 110	991	1 351	1 181	1 015	948

Figure 3.11-3: Italy surimi products export



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*

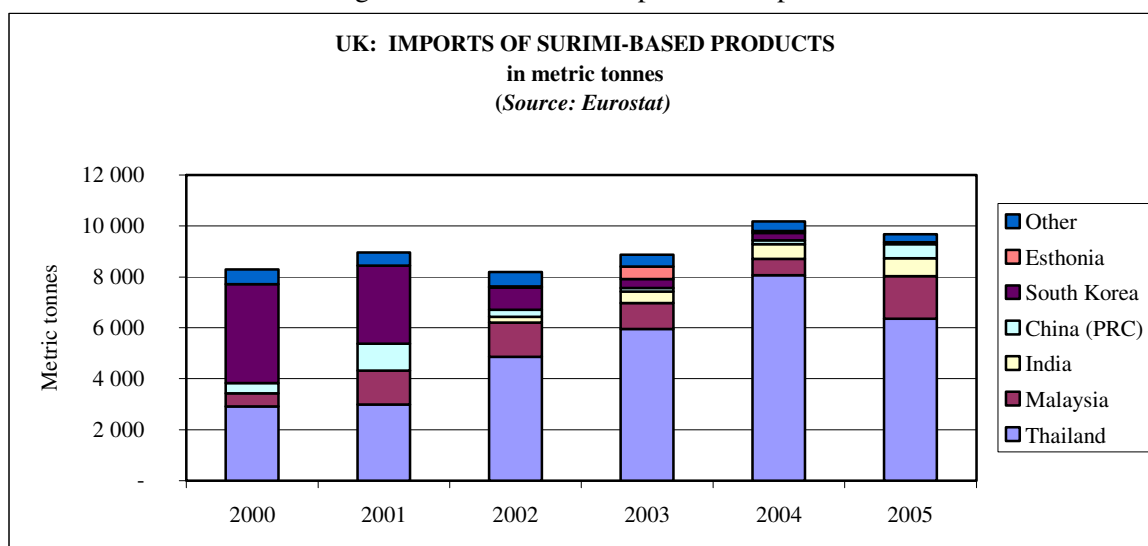
Thailand is by far the most important country of origin for surimi products on the British market, accounting for 65 percent of total imports. Malaysia ranks second. The Republic of Korea's share of imports to the United Kingdom has been decreasing, as it has to other European countries, and China's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

UK: IMPORTS OF SURIMI-BASED PRODUCTS in metric tonnes						
<i>(Source: Eurostat)</i>						
Country	2000	2001	2002	2003	2004	2005
Thailand	2 910	2 988	4 853	5 952	8 069	6 351
Malaysia	518	1 328	1 353	1 009	643	1 678
India			215	471	572	703
China (PRC)	402	1 059	279	143	155	557
South Korea	3 893	3 071	882	349	289	76
Estonia			46	480	78	
Other	577	516	573	469	371	309
TOTAL	8 300	8 962	8 201	8 873	10 177	9 674

Figure 3.12-1: UK surimi products import



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.

Table 3.12-2: Examples of UK surimi product e-trade prices

UK: EXAMPLES OF E-TRADE PRICES OF SURIMI PRODUCTS			
Product	Weight g	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

EU-9 AND OTHER COUNTRIES: OTHER MARKETS FOR SURIMI PRODUCTS IN 2004 (Source: ADEPALE)	
Country	in metric tonnes
France	47 100
Spain	35 000
Italy	12 000
UK	11 000
Netherlands	3 600
Belgium	2 600
Sweden	2 500
Portugal	2 000
Germany	1 600
Other countries	3 600
EU-25	121 000

- **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

3.14.1. National production

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

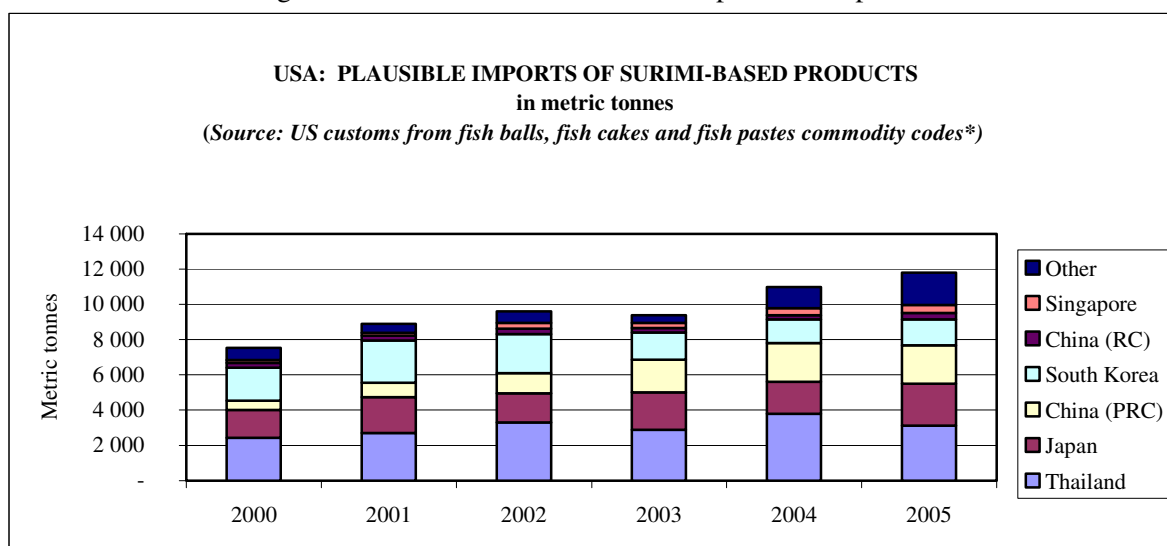
There is no specific category for surimi products in United States customs statistics. Actual imports of surimi products from Asian countries (the Republic of Korea, China and Thailand) into the United States of America must therefore be estimated by compiling imports of commodities in categories such 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

USA: PLAUSIBLE IMPORTS OF SURIMI-BASED PRODUCTS						
in metric tonnes						
(Source: US customs from fish balls, fish cakes and fish pastes commodity codes*)						
Country	2000	2001	2002	2003	2004	2005
Thailand	2 438	2 698	3 293	2 886	3 784	3 119
Japan	1 561	2 036	1 661	2 111	1 826	2 376
China (PRC)	537	817	1 141	1 858	2 189	2 170
South Korea	1 869	2 390	2 218	1 549	1 336	1 478
China (RC)	264	265	293	240	232	363
Singapore	162	178	342	301	407	447
Other	696	500	653	434	1 222	1 852
TOTAL	7 527	8 884	9 601	9 379	10 996	11 805

(* 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.)

Figure 3.14-1: estimation of US surimi products import



(* 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.

3.14.5. *Current and future developments*

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' (*Cheylocodactylus 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

COMPARISON BETWEEN CONSUMPTION PER CAPITA OF DIFFERENT SURIMI PRODUCTS BY MAIN COUNTRY						
Country	Surimi products, production in metric tonnes	Surimi products, import in metric tonnes	Surimi products, export in metric tonnes	Apparent market in metric tonnes	Population millions	kg/ per capita /year
France	42 000	12 000	3 000	51 000	60	0.850
Spain	20 000	16 000	3 000	33 000	44	0.750
Italy	4 000	13 000	1 000	16 000	58	0.276
UK	0	10 000		10 000	59	0.169
Netherlands				3 600	16	0.225
Belgium				2 600	10	0.260
Sweden				2 500	9	0.278
Portugal				2 000	10	0.200
Germany				1 600	82	0.020
Lithuania	45 000		23 000	22 000	3,4	6.470
EU-25	110 000	53 000	2 000	161 000	452	0.356
Japan	600 000			600 000	128	4.690
South Korea	200 000		13 000	200 000	48	4.160
Thailand	150 000		80 000	70 000	60	1.170
China (PRC)	100 000		20 000	80 000	1243	0.064
China (RC)	50 000			50 000	23	2.170
India	10 000			10 000	1027	0.010
USA	125 000	12 000		137 000	296	0.463

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.

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USEFUL INTERNET SITES

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- British Frozen Food Federation www.bfff.co.uk
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APPENDIX 1: CODE OF PRACTICE FOR FROZEN SURIMI

(extract from Codex Alimentarius : Code of Practice for fish and fishery products – CAC/RCP 52-2003, Rev 2-2005)

De-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.
Gel 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, sinews, 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-watering Process
9.7	Mixing and Addition of Adjuvant Ingredients Process
9.8	Packaging and Weighing
9.9	Freezing Operation
9.10	Dismantling 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 recognising 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 only the hazards and defects, which are likely to be introduced or controlled at that step, are listed. It should be recognised 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 constituent 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 kamaboko 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.

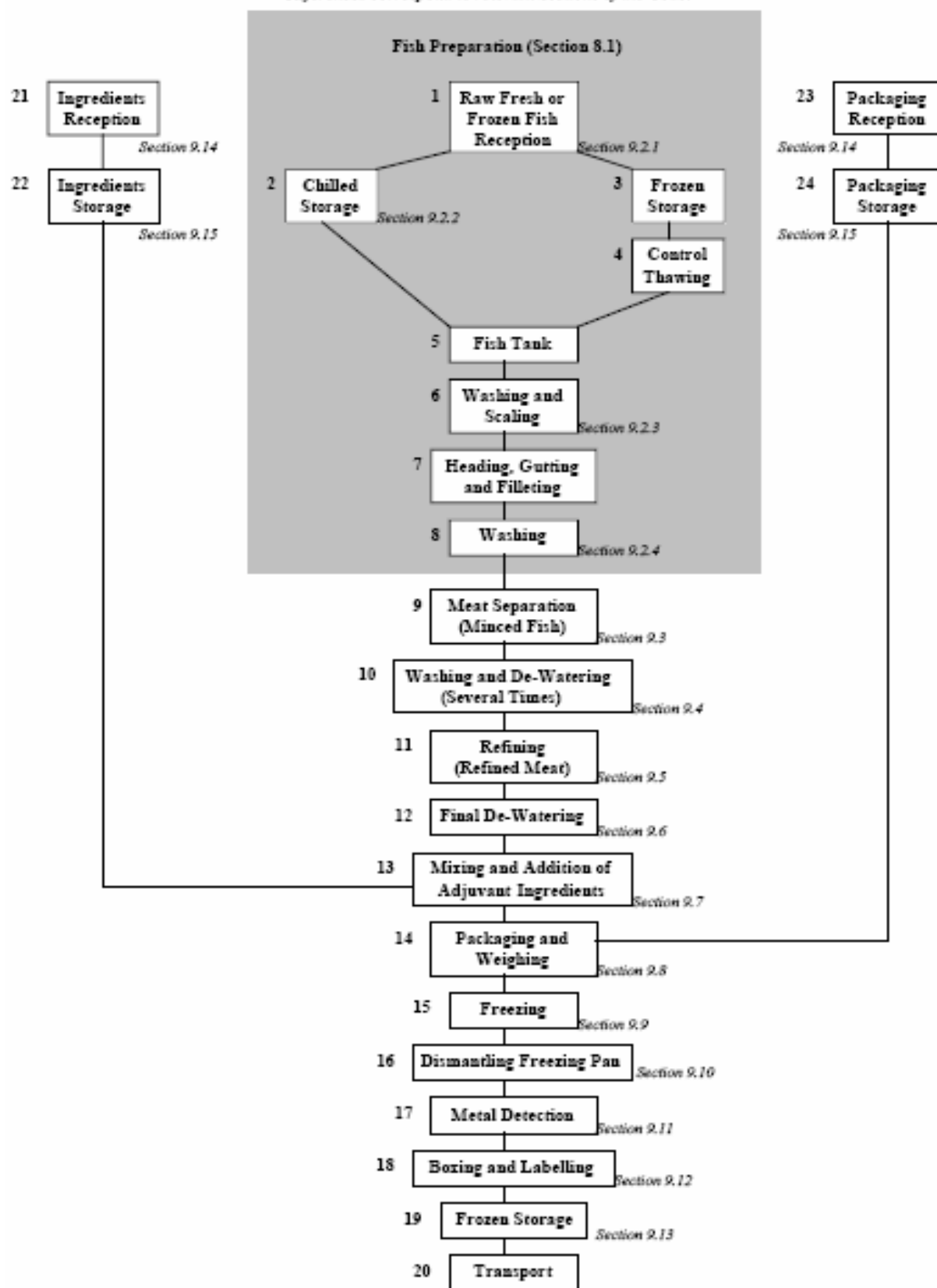


Figure 9.1 Example of a flow chart of a frozen surimi production process.

(For further information, please consult directly the corresponding sections of the Codex Alimentarius.)

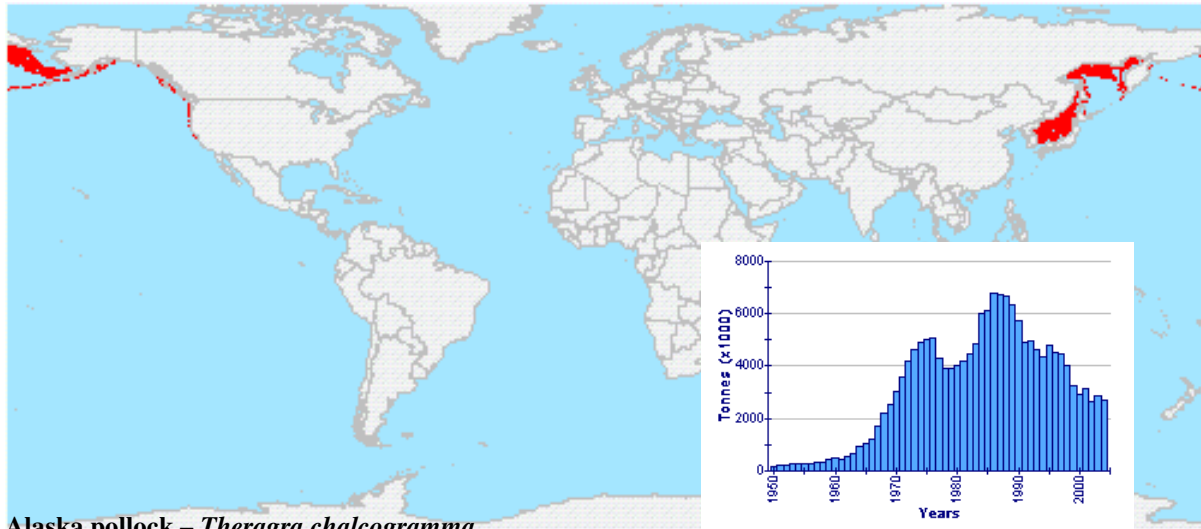
APPENDIX 2: LIST OF SPECIES USED FOR SURIMI PRODUCTION

(Main Source: Pascal Guennegues, Oregon State University Surimi School)

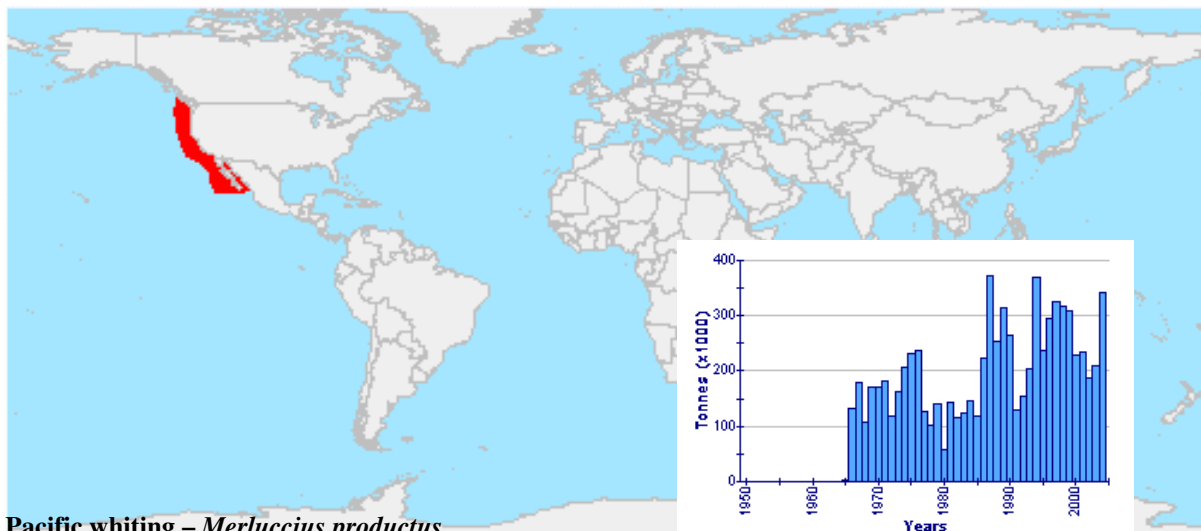
English common names	Scientific names	Japanese Spanish French	Main countries involved in surimi production	Surimi level of production (estimate in metric tonnes)	Main characteristics
COLD WATER WHITE FISH SURIMI					
Alaska pollock or walleye pollock	<i>Theragra chalcogramma</i>	Suketodara Colin de Alaska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

TROPICAL FISH SURIMI					
Threadfin bream	<i>Nemipterus spp</i>	Itoyori Baga japonaise Brème de mer	Thailand, India, Viet Nam, China (PRC), Malaysia, Indonesia, Myanmar	200 000– 250 000 mainly threadfin bream, big-eye and croaker	Slightly darker and oilier than pollock surimi. It constitutes the main alternative to Alaska pollock.
Big-eye	<i>Priacanthus spp</i>	Kinmedai Catalufa del Pacifico Beauclaire du Pacifique			High quality similar to Itoyori.
Lizard fish	<i>Saurida tumbil</i>	Eso Lagarto tumbil Anoli tumbil			White surimi with low-gel capacity used in combination with Itoyori.
Croaker	<i>Johnius spp,</i> <i>Otolithus spp</i>	Guchi Corvina Courbine			High quality similar to Itoyori and much appreciated in Japan for its taste and in Singapore for its gel ability.
Goatfish	<i>Parupeneus spp,</i> <i>Upeneus spp,</i>	Himeji – Rouget			Low-gel surimi of pink colour.
Ribbon fish	<i>Trichiurus spp</i>	Tachiuo Sable Sabre			Mainly used in China.
Reef cod	<i>Epinephulus spp</i>	Hata Mero Merou			
Leather jacket	<i>Stephanolepis spp</i>	Kawahagi Ballesta Bourse			
OTHER SPECIES					
Giant squid	<i>Dosidicus gigas</i>	– Jibia gigante Encornet géant	Peru		Snow white surimi of low-gel strength.

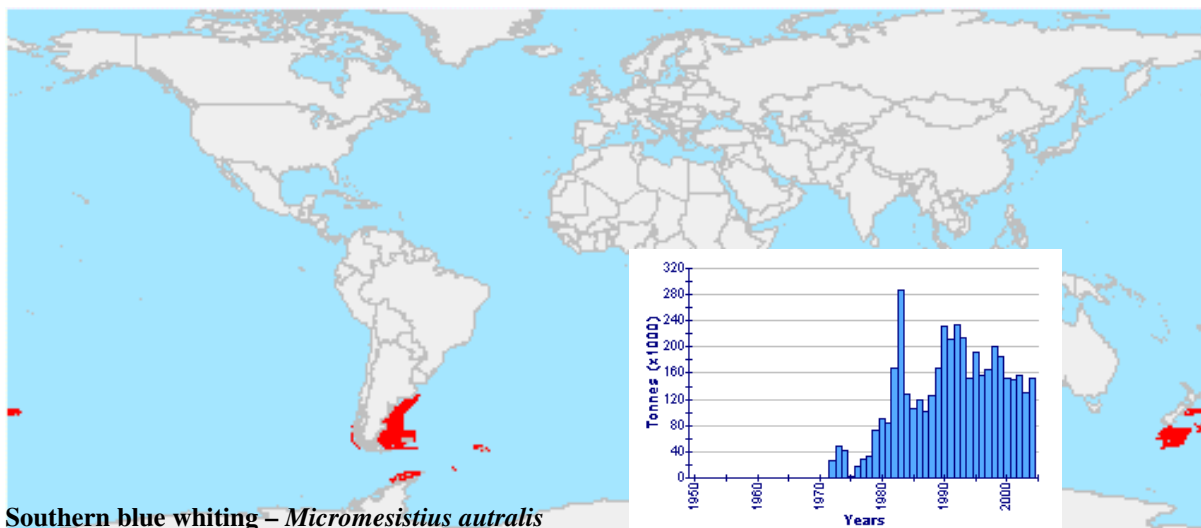
APPENDIX 3: GEOGRAPHIC DISTRIBUTION OF MAIN SURIMI FISH SPECIES



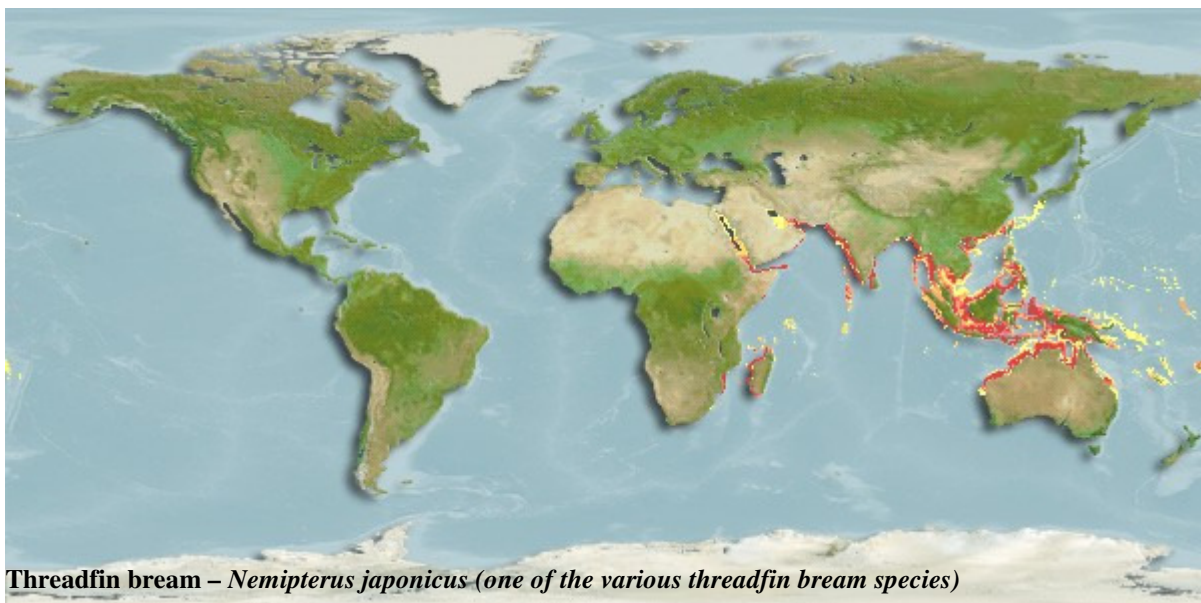
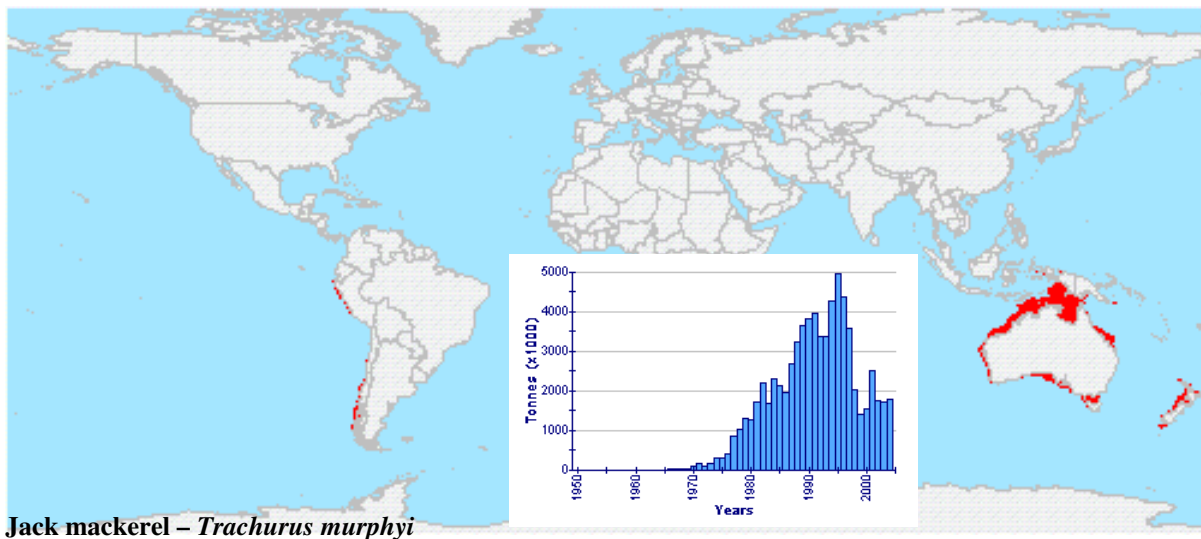
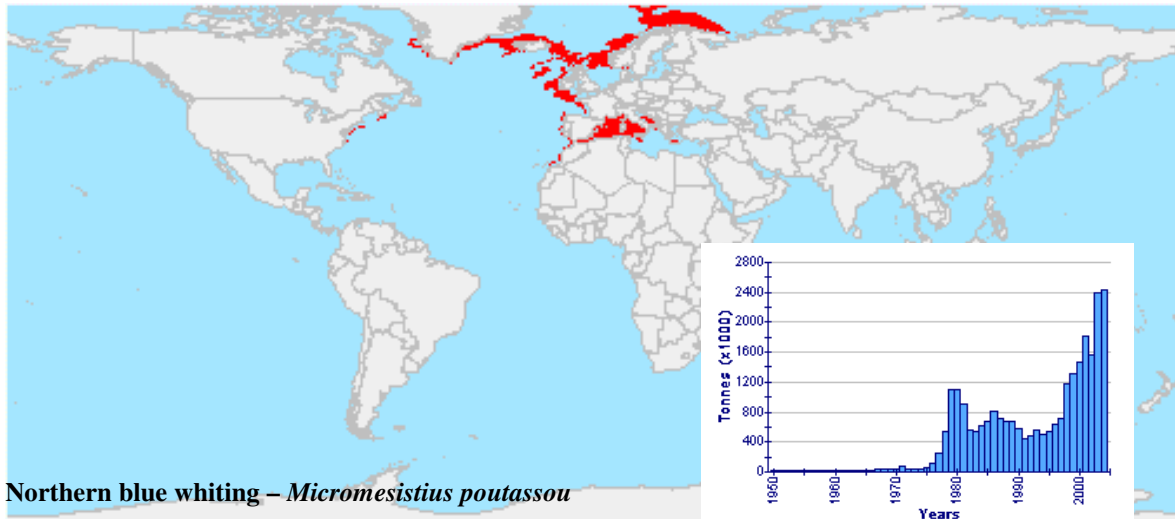
Alaska pollock – *Theragra chalcogramma*



Pacific whiting – *Merluccius productus*



Southern blue whiting – *Micromesistius australis*



APPENDIX 4: EXAMPLES OF SURIMI SPECIFICATIONS
(Source: Pascal Guenneugues, Oregon State University Surimi School)

POLLOCK SURIMI

FACTORY TRAWLER							SHORE PLANT						
GRADE	Moisture	GEL STRENGTH		WHITENESS		Impurities	GRADE	Moisture	GEL STRENGTH		WHITENESS		Impurities
		GS	Depth	L*	b*	/40g			GS	Depth	L*	b*	/40g
SA	75%	>1000	>1.40	>75	<4	<10	SA	75%	>1000	>1.30	>75	<4	<7
FA	75%	>900	>1.35	>75	<4	<14	FA	75%	>900	>1.20	>75	<4	<14
AA	75%	>900	>1.30	>75	<4	<23	AA	75%	>750	>1.15	>74	<4	<14
A	75%	>750	>1.25	>74	<4	<28	A	75%	>600	>1.05	>74	<4	<14
KA	75%	>600	>1.1	>72	<6	<35	KA	75%	>500	>1.00	>72	<6	<23
KB	75%	>500	>1.0	>70	<10	<40	KB	75%	>400	>0.9	>70	<8	<30
RA	75%	>400	>1.0	>70	<10	<60	RA	75%	>200	>0.8	>70	<10	<40

PACIFIC WHITING

FACTORY TRAWLER							SHORE PLANT						
GRADE	Moisture	GEL STRENGTH		WHITENESS		Impurities	GRADE	Moisture	GEL STRENGTH		WHITENESS		Impurities
		GS	Depth	L*	b*	/40g			GS	Depth	L*	b*	/40g
SA	75%	>1000	>1.25	>75	<4	<10							
FA	75%	>900	>1.15	>75	<4	<14	FA	75%	>900	>1.20	>75	<4	<14
AA	75%	>800	>1.10	>75	<4	<23	AA	75%	>700	>1.10	>75	<4	<14
A	75%	>700	>1.05	>74	<4	<28	A	75%	>600	>1.05	>74	<4	<14
KA	75%	>500	>1.00	>72	<6	<35	KA	75%	>400	>1.00	>74	<6	<23
KB	75%	>400	>0.95	>70	<10	<40	KB	75%	>300	>0.90	>70	<8	<30
RA	75%	>300	>0.90	>70	<10	<60	RA	75%	>200	>0.80	>70	<10	<40

NORTHERN BLUE WHITING

FACTORY TRAWLER						
GRADE	Moisture	GEL STRENGTH		WHITENESS		Impurities
		GS	Depth	L*	b*	/40g
SA	75%	>1200	>1.50	>75	<5	<10
FA	75%	>1000	>1.40	>75	<5	<15
A	75%	>900	>1.30	>74	<6	<30
KA	75%	>600	>1.15	>72	<8	<40
KB	75%	>400	>1.00	>70	<10	<60

ITOYORI

THAILAND							INDIA						
GRADE	Moisture	GEL STRENGTH		WHITENESS		Impurities	GRADE	Moisture	GEL STRENGTH		WHITENESS		Impurities
		GS	Depth	L*	b*	/40g			GS	Depth	L*	b*	/40g
							SSA	76%	>1000	>1.30	>78	<6	<40
							SA	76%	>900	>1.20	>76	<6	<40
							FA	76%	>750	>1.15	>75	<6	<40
AA	75%	>600	>0.95	>76	<10	<40	AA	76%	>600	>1.10	>75	<8	<40
A	76%	>500	>0.90	>76	<12	<40	A	76%	>400	>1.05	>75	<8	<40
KA	76%	>300	>0.85	>76	<12	<40	KA	77%	>300	>1.00	>74	<10	<60

JACK MACKEREL

GRADE	Moisture	GEL STRENGTH		WHITENESS		Impurities
		GS	Depth	L*	b*	/40g
FA	75%	>600	>1.00	>72	<10	<15
A	75%	>400	>0.80	>70	<10	<20
KA	75%	>300	>0.70	>70	<12	<40
B	76%	>200	>0.60	>68	<14	<60

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



ITOYORI



ESO



KINMEDAI



HIMEJI RED

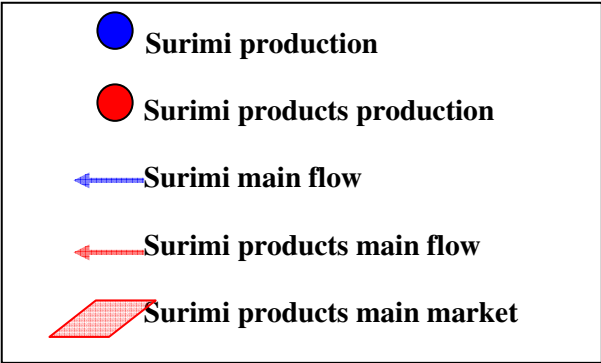
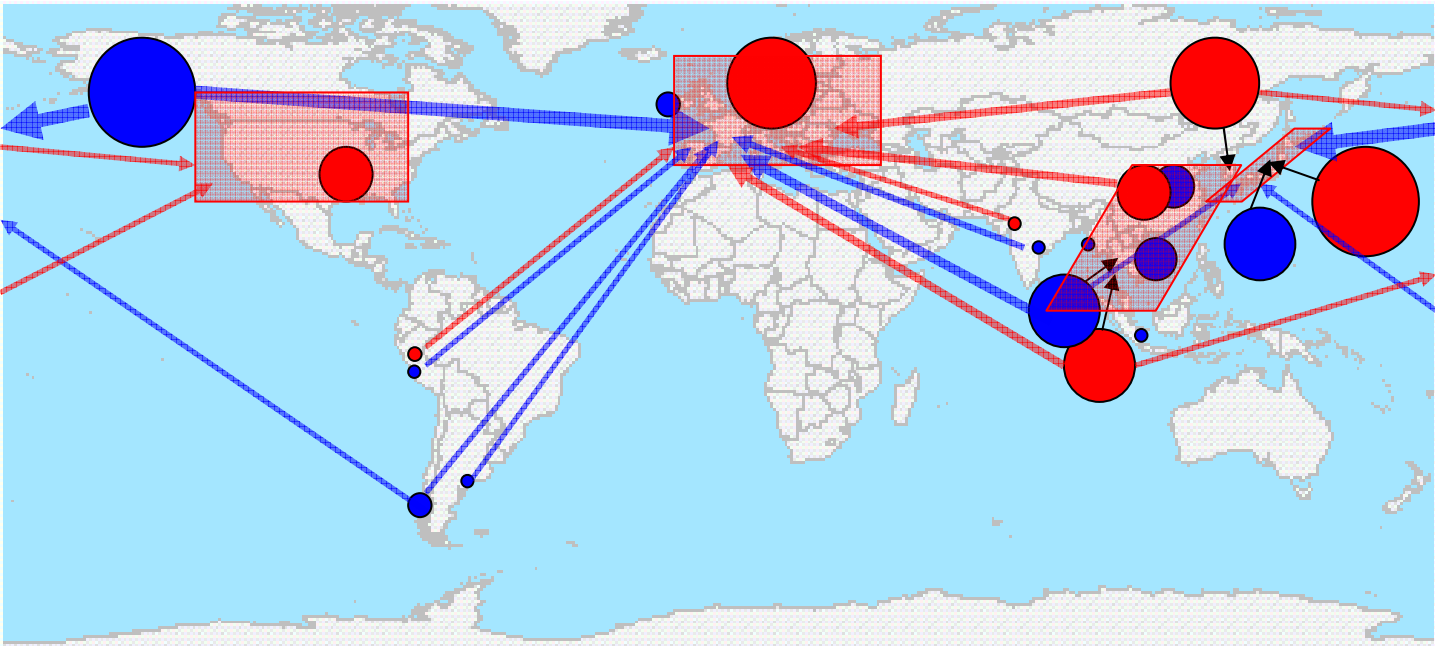


HIMEJI YELLOW



PONY

APPENDIX 6: WORLD MAP OF SURIMI AND SURIMI PRODUCTS TRADE



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
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 Toranomom, 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 Yamato-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

Fax: 81-98-974-8537
E-mail: inaokajp@ii-okinawa.ne.jp

- **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 Ohtemachi, 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

- **MITSUMI & 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

- **SHIN TOKYO INTERNATIONAL INC.** – Lira Nogizaka Bldg. 6F, 1-15-18 Aoyama, Minato-ku, TOKYO 107 JAPAN
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

- **SUEYOSHI CORPORATION K.K.** – 5-29-22-410 Shiba, Minato-ku, TOKYO 108-0014 JAPAN
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, Minator-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

- **TOSHO CO., LTD.** – 1-2-8 Yamatomachi, Shimonoseki, YAMAGUCHI 750-0067 JAPAN
Tel.: 81-832-66-5141
Fax: 81-832-66-5142
- **TOYOTA TSUSHO CORPORATION, FOODS DEPT.** – 2 -2-14-9 Nihonbashi, Chuo-ku, TOKYO 103-8655 JAPAN
Tel.: 81-3-3242-8367
Fax: 81-3-3242-8528
E-mail: masayuki_1_morita@gw.toyotsu.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, Kamedagun, HOKKAIDO, JAPAN
- **ICHIMASA KAMABOKO CO., LTD.** – Head and Eguchi Factory, 7-77, Tsushimaya, NIIGATA CITY, Niigata Prefecture, JAPAN
- **ICHIMASA SHOKUJIN CO., LTD.** – 7-3-6 Yamakido, NIIGATA CITY, Niigata Prefecture, JAPAN
- **KIBUN SHOKUJIN 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, UTSUNOMIYA CITY, Tochigi Prefecture, JAPAN

- **NIPPON SUISAN KAISHA LTD.** – Hachioji General Food Plant, 559-6, Kitanocho, Hachioji-shi, TOKYO, JAPAN
- **OSAKI SUISAN CO., LTD.** – 1-9-39 Kusatsukou, Nishiku, HIROSHIMA CITY, 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: marketing@anuson.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

Fax: 66-75-251789, 251358
E-mail: ktgroup@cscoms.com

- **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: luckypl@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

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

E-mail: marketing@starfoods.co.th

- **THAVEEVONG INDUSTRY CO., LTD.** – 22 Soi Onnuch 62, Suanluang, BANGKOK 10250 THAILAND
Tel.: 66-2-3226814-6
Fax: 66-2-3202439
E-mail: tavevong@tvi.co.th
Web site: www.tvi.co.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: jktlft@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, 1 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

- **LANGTAOSHA INTERNATIONAL ENTERPRISE HOLDINGS CO., LTD.** – HONG KONG, PEOPLE’S REPUBLIC OF CHINA
E-mail: seafood@langtaosha.com
Web site: www.langtaosha.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
- **HINDUSTAN LEVER LTD.** – Hindustan Lever House Industrial Estate 688534 AROOR, INDIA
Tel.: 91-478872049
Fax: 91-478873302
Web site: 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: ngvanthuong@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
- **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

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
- **JINGLIHWA 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 Metropolitana, 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

Fax: 1-213-689 4020
E-mail: sales@pacificgiant.com
Web site: www.pacificgiant.com

- **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: jlw@csfrance.fr
- **FJORD IMPORT** – Residence la Clarte, 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

Tel.: 01 55 04 12 12
Fax: 01 55 04 12 00
E-mail: info@interpral.fr
Web site: www.interpral.fr

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
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Fax: 02 33 42 29 81
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