SEAFOOD PROCESSING AND TRADE IN VIETNAM

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ABSTRACT

There are about 332 seafood processing enterprises in Vietnam by the end of 2003, of which 100 enterprises have EU-CODE and 135 enterprises apply HACCP. Main products are frozen shrimp (47.7%), frozen fish (21.1%), frozen octopus and squid (5.1%); value added products increase gradually and take up over 30% of export revenue.
Export revenue of seafood reached over USD 2.2 billions in 2003. The main export markets were USA 35.3%, Japan 26.3%, and EU 5.7%.
There have been some problems in Vietnam seafood processing and trade:
Semi-finished (raw) products account for a high percentage; products do not diversify to meet market demand.
The seafood quality is inconsistent and unstable.
Capacities of equipment and raw material supply are imbalance.
Export is mostly done through intermediate markets.
Market researching and marketing activities are still ineffective.
Vietnam's seafood trade mark has not yet been strengthened on the international market.
This paper presents some solutions for these problems.
Keywords: Semi-finished products, post-harvest, export revenue, E-commerce, market share, value-added products.

SEAFOOD PROCESSING

Raw materials and their distribution in seafood processing

From 1991 to 2003, the total fishery production in Vietnam has changed rapidly. In 1991, the total fishery production reached 1,049,468 tons, of which 68% from capture fisheries and 32% from aquaculture. In 2003, the total fishery production was 2,536,361 tons. Among these, 1,426,223 tons are from capture fisheries, accounting for 56% of total fishery production, and 1,110,138 tons from aquaculture, accounting for 44%. Raw material in 2003 was 2.4 times in comparison with that of 1991. In addition, the ratio of raw materials from aquaculture and capture fisheries was nearly equal. Aquaculture has become the production of commodity and the main supply source of raw materials for export seafood processing.

The quality of raw materials

Raw materials captured from different types of fishing boats and gears, so they have different qualities.
Even with big fishing boats which have a long fishing trip, a few of them equipped with cold storage. The high valued catches are preserved by ice and by salt for the low valued ones. The fishing trip of small fishing boats is normally lasted for one day, thus the catch is not preserved. The quality of raw materials is often degraded due to the lack of cold storage on board. The catch is landed via several fishing ports, which were not properly constructed; that further reduces the quality of raw materials, especially in hot season. Thus, the loss is tremendous in post-harvest (about 30 %).
Raw materials from fresh and brackish water aquaculture are normally near consumption areas or processing factories. Right after planned harvesting, these raw materials are transported directly to markets or processing factories without preserving. Thus, they are still fresh and in good quality.

Seafood processing factories
At the end of 2003, there were about 332 nation-wide seafood-processing factories, in which 152 complied with the food hygiene and safety standard of Vietnam (accounting for 45.8%). One hundred companies were put in the first list of EU. In term of geography, the processing factories are distributed as follows: 4 % in the North, 27 % in the Central, and 69 % the South of Vietnam. Due to the weakness of marine exploitation and aquaculture, as well as the direct effects from China markets on the border, the seafood processing sector in the north and the northern-central Vietnam is still modest in comparison with other regions of the country. For examples, in 2003, the total export revenue of in the north and the northern-center of Vietnam (16 provinces from Quang Ninh to Phu Yen) was about the same amount of Soc Trang province's, and 70 % of that of Ca Mau. These provinces located in South Vietnam.

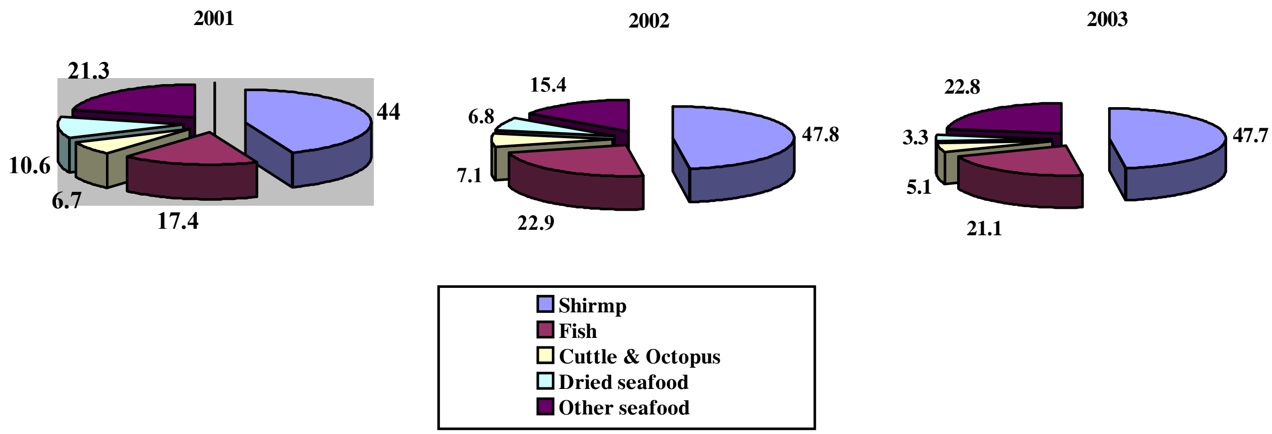
Main sea products
In 2003, frozen shrimp was the main export product with the revenue of 1,058.122 millions USD, accounting for 47.7% of the total export revenue. Frozen fish was 466,528.00 millions USD, accounting for 21.1% of the total export revenue. Frozen octopus and squids was about 113,880.00 millions USD, accounting for 5.1 % of the total export revenue.
Now, the frozen shrimp is still the main export products. In term of export seafood output, shrimp products accounted ¼ in quantity but 50% in revenue. That also shows that Vietnam fisheries branch depends too much on shrimp products. Furthermore, export revenue from United States of shrimp products was about 500 millions USD, accounting for 65% of the total earning. If a "dumping case" happens in USA, then Vietnam fisheries export revenue will be affected badly.
In recent years, the value- added products tend to increase rapidly and reach 30 - 40 % of the total seafood products. Fresh products are also expanded and mainly exported. They include live crab, fish, shrimp, and tunas.

Table I: Seafood output and export revenue (2001- 2003)

(Output = ton; revenue = million USD)

Products	2001			2002			2003		
	Output	Revenue	% Revenue	Output	Revenue	% Revenue	Output	Revenue	% Revenue
Shrimp	87,338	781.474	44.0	115,656	966.709	47.8	125,209	1,058.122	47.7
Fish	105,564	310.070	17.4	143,236	462.781	22.9	154,978	466.528	21.1
Cuttle & Octopus	43,120	118.415	6.7	55,847	142.786	7.1	45,624	113.880	5.1
Dried seafood	34,362	188.503	10.6	35,756	138.368	6.8	19,449	73.720	3.3
Other seafood	89,399	379.023	21.3	93,458	312.177	15.4	113,237	504.444	22.8
Total	358,833	1,777.486	100	444,043	2,022.821	100	458,496	2,216.694	100

Source: Annual Report of VASEP 2001-2003.



Seafood quality, quality management, and seafood safety.
There has been a good progress on the seafood quality in recent years due to the efforts of processing companies themselves as well as Fisheries Quality Control Centers located along the country. By the end of 2003, Vietnam has 100 seafood processing companies which are put on the EU's first list. This is considered a great success of seafood processing companies. The Vietnam seafood processing sector has positively changed, and improved considerably on many aspects such as upgrading production facilities and working conditions, and applying the HACCP system (over 135 processing companies have applied HACCP system). This proves that there are positive changes in consciousness of Viet Nam's export seafood processing companies on quality management.

Weaknesses in Vietnam seafood processing
The government management is inadequate. The co-operations in construction guidance and development planning among local and centre are very weak. The management ability of seafood processing companies does not meet the requirement of market economy. The overwhelmed establishment and weak management ability have led to bankruptcy for several state- run companies.

There is an imbalance between current processing technology and the market requirement on quality and variety of products. Processing products are simple and mainly semi- finished. Thus, the price cannot be raised while a lot of materials are wasted. There is not much attention in researching new processing technology to satisfy the market's demand. The marketing is also not considered; therefore, many companies have difficulties in orientation their business activities.

There has not been strong cooperation among factories and raw materials suppliers. That causes excessive competitions, especially, pushing up the price of input material which weakens the competition ability of Vietnamese seafood in foreign markets.

There is an imbalance between capacities of equipment, raw materials supply, and market demand. Most factories have run only 50% of their capacity due to the surplus in their equipment capacity, the shortage of raw materials, or no new products due to old technology.

Low technology in post-harvest preservation affects the quality of input materials. Yet, its price is high, while the output's price is low. That reduces greatly benefits of many seafood processing companies.

Solutions for the development of Vietnam's seafood processing
Diversification of sea products

Main products from shrimp:

Giant tiger prawn: the product is under the form of IQF (HLSO, PTO, boiled PTO, easy peel, nobashi cover with flour, with fried flour, with jacket flour). Pay attention to keeping live shrimp technology. Main markets: USA, Japan, EU.

Giant fresh water prawn: HOSO, HLSO IQF. Main market: EU

Sea shrimp: PD, PUD block and IQF; P&C and C&P IQF. Main markets: Japan, EU, USA, other ASEAN countries

Main products from fish:

Export live fish: garrupa, goby, and ornamental fish

Marine fresh fish preserved by ice: tuna, mackerel, red snapper.

Frozen fillet fresh water fish: stripped catfish, spotted featherback, and African carp.

Frozen marine whole fish, fillet: tuna, mackerel, pomfret, grouper, sole, Russell snapper.

Dried fish and salted fish and smoked out fish: anchovy, flying fish, sardine.

Value added products: grilled chopped fish, bar fish, fish soaked in flour, fried fish stick.

Main product from Mollusca:

Splendid squid: whole, tube, cuttle, stuffed

Cuttlefish: fillet, sushi, sashimi, dried, seasoned.

Octopus: whole, boiled and chopped

Green mussel, arka shell, shell: boiled and other value products

Ridged venus clam, horse mussel: Ridged venus clam's flesh and other value products.

Main markets: EU, Japan, and Korea

Main products from mixed processing food:

Dried seasoned products: dried squids, many kinds of fish

Fast food: shrimp stuffed cabbage, crab, shrimp spring rolls, grilled shrimp,

Value added products: surimi, sashimi, sushi . . .

Main markets: Vietnam, Asian countries, and oversea Vietnamese communities.

Other specialties

Crab and three spot swimming crab

Develop value added products from them.

Export live crab

Seaweed:

Gracilaria: dried gracilaria, agar-agar.

Seaweed grass

Creating sources of raw materials

Up to 2010, the raw materials used for seafood processing are supplied from: capture fisheries (39.8%), aquaculture (55,8%), and import (14,4%). Increase the volume of aquaculture shrimp from 10.3% (2000) to 12.4% (2005) and 15.1% (2010). The aquaculture shrimp should be mostly from sea and brackish aquaculture with amount of 250.000 - 260.000 tons in 2005 and 380.000 - 400.000 tons in 2010. Expand the capture regions for high valued marine fish such as shrimp, cuttlefish and, squids.

Developing processing plants

The development of processing factories should base on the availability of raw materials, the ability in management and marketing of each factory, as well as the skills of technicians, the competition of products in the region. In period of 2006-2010, a number of processing plants which need to upgraded and widened should be multiplied to reach the total frozen capacity of 3500 - 4000 tons/day in 2010.

It is suggested that the processing plants with frozen capacity of 5tons/day should be built. In the major fishing regions, one or two medium processing plants (with frozen capacity of 10tons/day) are needed to meet the requirement of environment protection, to gather raw materials, as well as to apply new processing technology.

Developing the post-harvest technology
Promote research and application of advanced technology in post- harvest preservation. Apply technology of keeping live fisheries or frozen methods after catching such as hibernation, CO_{2-} ice combinating with ice, or other bio-preservative to preserve raw materials in cold containers to reduce the degrade and loss. Factory fishing boats and transportation vessels will help.

Support policies
Diversify ownership. Low profit state operated companies should be changed into stock companies to raise investment capital, improve technology, renew the way of managing, and increase productivity and competition ability of Vietnam seafood.

SEAFOOD TRADE

Seafood export revenue
Seafood export has gradually been formed and affirmed to be the key sector of fisheries industry. The seafood export revenue has been quickly and constantly increasing in recent years. The developing speed in 2003 was ten times higher than that of 1990.

Table II: The increase in seafood outputs and revenues

Year	Products (tons)	Compared with 1990 (times)	Revenues (million USD)	Compared with 1990 (times)
1990	49,332	1.00	205,0	1.00
2000	291,923	5.92	1,478.6	7.21
2001	358,833	7.27	1,777.486	8.67
2002	444,043	9.00	2,022.821	9.87
2003	458,496	9.29	2,216.694	10.81

Source: Annual Report of Fisheries Ministry

The increasing speed of the seafood revenue is higher than that of the seafood output. That is a good signal which shows that Vietnam's seafood trade has been developing widely and deeply, achieving a good position in foreign markets.

Seafood export markets
The seafood export markets have been spread all over the world. In 1995 Vietnam's seafood was exported to 20 countries in 1995 and 75 countries and many other territories in 2003. Japan and USA are the largest and most potential markets.
The market share of major markets is also adjusted in such a way that they are not so focused on any markets.
The most important markets for Vietnam's seafood export are:

Japan: Before 1997 Japan accounted for over 50% of the export revenue. Since 2001, revenue from Japan's market has been reduced to 26.2% (in 2001), 26.6% (in 2002), and 26.3% (in 2003).

USA: In 1997 the USA market contributed only 5% of the export revenue. Since 2001, it has raised quickly to 27.5% (2001), 32.4% (in 2002), and 35.3% (in 2003). At the present, the USA market becomes the leading one with the revenue of 782.2 million USD.

China and Hong Kong: They are the third big market after USA and Japan. In recent time, the revenue from these markets has tended to decrease. In 2001, the revenue was 316.7 million USD equivalents to 17.8%. In 2002 it decreased to 302.2 million USD, then to 147.7 million USD in 2003.

EU: Vietnam hopes that 10% of its export revenue comes from EU, but so far it has only reached 5.7% (in 2003) because the consumers' preferences over there are quite strict and conservative.
The seafood trade of many countries in the world includes both export and import. However, the seafood trade of Vietnam is almost export.

Table III: Seafood export market (2001- 2003)
(output = ton; revenue = million USD)

Market	2001			2002			2003		
	Output	Revenue	% revenue	Output	Revenue	% revenue	Output	Revenue	% revenue
USA	70,931	489.035	27.5	98,655	655.655	32.4	123,472	782.238	35.3
Japan	76,986	465.901	26.2	96,251	537.968	26.7	98,310	582.902	26.3
China + Hong Kong	68,179	316.719	17.8	77,175	302.260	14.9	42,902	147.786	6.7
EU	30,442	106.716	6.0	31,368	84.404	4.2	41,200	127.240	5.7
ASEAN	22,813	64.930	3.7	29,183	79.529	3.9	28,536	73.080	3.3
Other countries	89,572	334.185	18.8	111,400	363.005	17.9	124,007	503.449	22.7
Total	358,833	1,777.486	100	444,043	2,022.821	100	458,496	2,216.694	100

Source: Annual Report of Vietnam Association for Seafood Export Processing (VASEP)

Average seafood export price
In recent years, the average price of export seafood in Vietnam tends to be rising because of the changes in the structure of export seafood. The ratio of value added seafood have increased gradually instead of semi- processed sea products previously. Japan and USA are the largest and most potential markets. Before 1991, the value added seafood is very small, inconsiderable; at the moment the ratio is 35 - 40% .

Table IV: The average export seafood price

Year	Outputs (tons)	Revenue (million USD)	Average cost (USD/kg)
1985	24,800	90.0	3.6
1990	49,332	205.0	4.1
2000	291,923	1,478.6	5.06
2001	358,833	1,7774.86	4.95
2002	444,043	2,0228.21	4.56
2003	458,496	2,216.694	4.83

Source: Annual Report of Fisheries Ministry

Problems of Vietnam's seafood export

-Number of markets with revenue above 10 million USD per year is very low, only about ten of them. Vietnam's sea-products are mainly sold to the USA, Japan, China - Hong Kong, and EU. The focus on the 4 above main markets will be a disadvantage when the economy is changed in these markets.

-When Vietnam's seafood export revenue was not very high, about 0.5 to 0.7 million USD/ year, not many countries paid attention to Vietnam seafood. When it reaches over 1 billion USD/ year many countries began to interest in our export seafood. The non-tax barriers and the competition among countries have become more and more drastic.

-The seafood processing production are still spontaneous, not well planned. The spontaneity results in difficulties in controlling the sources of raw materials. Many processing factories have been built, which leads to competition in purchasing of raw materials regardless of their grade and quality. Therefore, these factories have to deal with problems concerning the freshness, quality, as well as the overusing of banned chemical substances on materials. Besides, a small export enterprise usually cannot match its contracted requests;, it often collects products from others. Thus, the delivery is unreliable and that leads to losing the trade confidence (The above reasons explain why the price of Vietnam's sea-products is often lower than those of Thailand's and some other countries.)

-The expenses for processing export seafood in Vietnam are increasing. The cost of raw material is expensive; the source of raw materials is neither stable nor sufficient. That results in enormous difficulties for export seafood processing factories. The cost of electricity is constantly rising, the communication charge is still high, and the fee for entering and leaving port is also high (according to WB, the port fee in HCM city is 146% and that in Hai Phong is 64% higher than the average port fee in ASEAN). So, the exporting loss estimated by exporters is quite high (from 29 to 50 USD/ 20-foot container). The domestic transport charge rises according to the cost of gasoline and bridge and road tolls.

These problems have made the export inefficient and many enterprises have to face a lot of challenges.

Some actions to promote Vietnam's fisheries export

The goal of Vietnam's fisheries export is to reach 3 –3.5 billion USD in 2005 and 4 - 4.5 billion USD in 2010. In order to achieve this goal we need to carry out some main measures as follows:

-Promote marketing to find out potential markets for Vietnam's seafood.

-Push up export on the base of products strategies and suitable markets.

-Raise the proportion of aqua-cultural products up to 56-70% of the total export revenue.

-Enhance the ability of preserving sea-products, preventing the loss of fisheries materials after harvest.

-Carry out synchronously procedures to control material sources and monitor the aquaculture areas and two-shell mollusca grounds. Also, encourage developing ecological aquaculture and sea aquaculture for some species with high value, as well as eco-labelling processed products.
-Continue to upgrade seafood processing factories and innovate machines. Apply compulsorily the system of closely supervising the quality and the GMP, SSOP, HACCP systems, and carry out the program of export clean products.
-Strengthen the transfer technology to increase the quantity of processed products that applied technology intensively, to reduce the quantity of semi- processed products, and to increase more value added seafood. (In 2010, the proportion of raw export seafood will be reduced to 46% compared with 60 - 65% at present.)
-Train and enhance staff's skills.
-Promote the collection of commercial information, and apply E- commerce.
-Make policies to maintain the fairness and convenience to attract foreign investment in fisheries sector, and particularly, the field of seafood processing and trade.

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