SOCIALIST REPUBLIC OF VIETNAM

DATA COLLECTION SURVEY ON SELECTING THE PROCESSED FOOD TO BE FOCUSED AND PROMOTING FOREIGN DIRECT INVESTMENT IN FOOD BUSINESS IN VIETNAM

FINAL REPORT

JANUARY 2012

JAPAN INTERNATIONAL COOPERATION AGENCY
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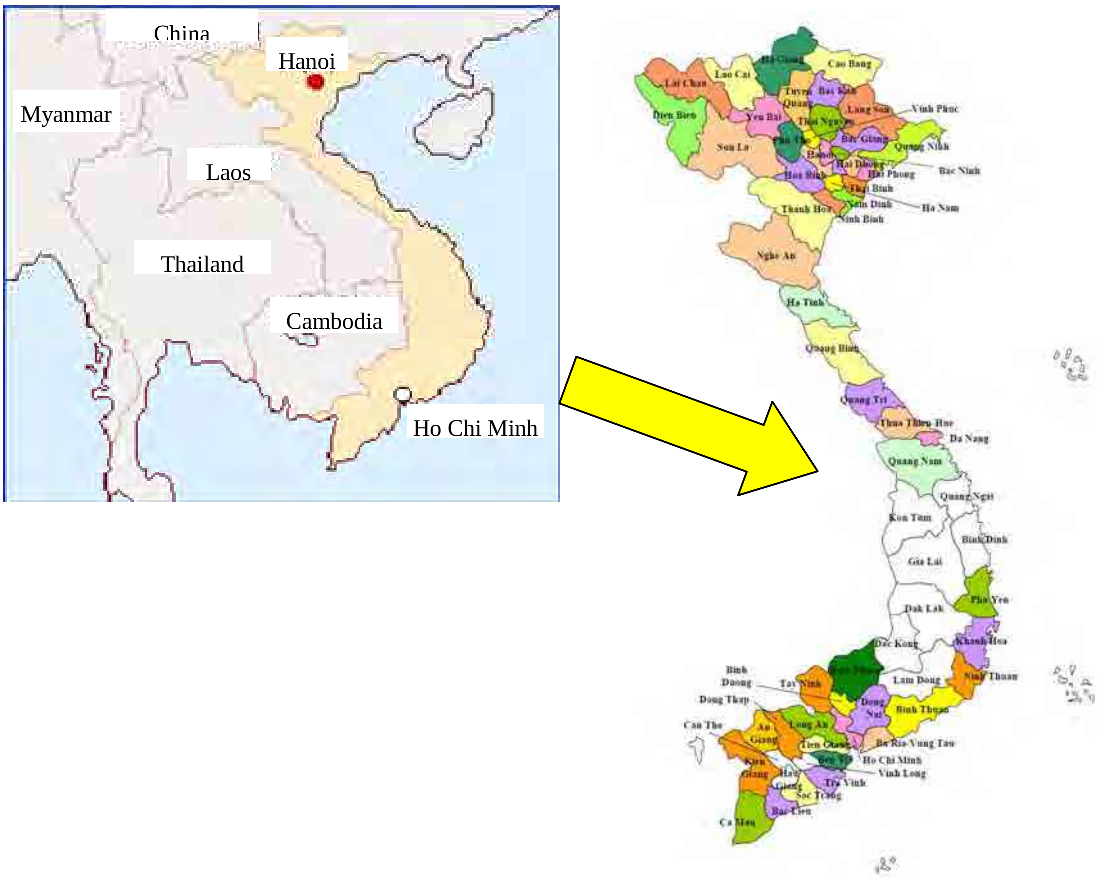
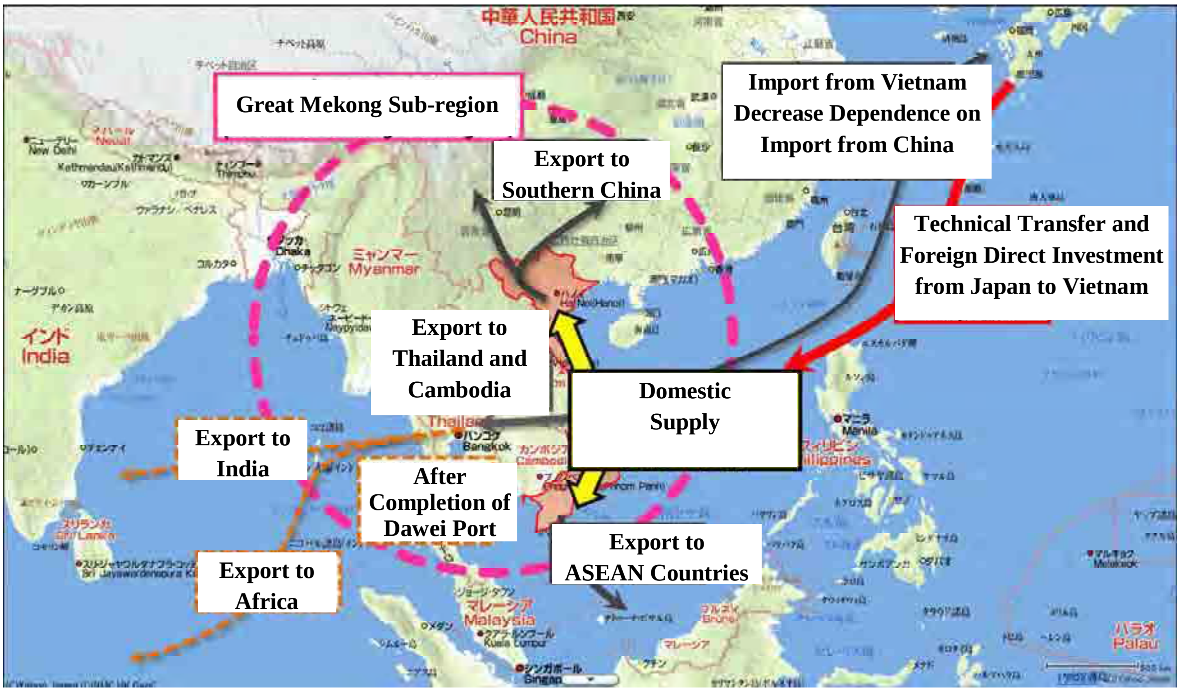
Location Map





Expected Shipment of Processed Foods Produced in Vietnam

Summary

1. Social and Economic Circumstances Surrounding "Processed Food"

1.1 Definition of "Processed Food"

There is no rigid definition of processed food in Vietnam and the concept per se is quite different from Japan's.

Table 1.1 Definition of Processed Food in Vietnam and in Japan

	Rice and grain	Farm products	Livestock products	Fishery products
Cutting	○	○ (Minced onion)	○ (Minced meat of an animal)	○ (Sashimi)
Freezing	–	○※	○	○
Homogeneous mixture	○ (Blended rice)	○ (Red- and yellow-pepper mix)	○ (Pack of Spencer roll and bone-less short rib)	○ (Assorted sashimi of same species of fish)
Disparate mixture	○ (Rice mixed with barley)	× Cut vegetable mix	× (Ground beef and pork)	× Assorted sashimi of different species of fish
Drying	○ Polished rice	○ (Soya bean) × (Dried mushroom)	×	×
Milling	× (Powdered rice)	× Flour	–	–
Heating	×	×	×	×

※Blanching treatment. Blanching is applied to prevent color change of vegetable.

○ Classified as "**fresh food**" by Food Sanitation Act of Japan (they are not processed food)

× Classified as "**processed food**" by Food Sanitation Act of Japan

(Yellow) Semi-processed food in Vietnam

(Pink) Deep-processed food in Vietnam

Source) JICA Study Team

For example, milled rice, ground meat, dryed soyabean, fish fillet to be categorized as fresh food in Japan are regarded as processed food in Vietnam. In Vietnam, processed food are generally clasified ambiguously as high degree/low degree of processing. This Survey adopted Vietnamese way of classification since the commodities to be discussed are all produced, processed, and distributed in Vietnam.

1.2 Challenges on Processed Food Industry

(a) Safety of Raw Materials and Processed Food

- ✓ Frequency of occurrence of food poisoning is 750～800 times of that of advanced countries (WHO, 2007)
- ✓ Ratio of suspension case on Vietnam's food at Japan's custom of import is increasing year by year.
- ✓ 75% of population is affected by parasite (National Institute of Malaria, Parasite, Insectology)

(b) Distribution

- ✓ Both hardware problem such as rehabilitation / construction of facilities and software problems such as handling of cargo (air and ocean transportation)
- ✓ Difficulty in transporting of raw materials and processed foods due to the lack of weight durability of bridges.
- ✓ Big demand of cold chain can be seen but not yet fitted out.

(c) South-Central-North Issue

- ✓ Concentration of investment on food processing to the southern provinces (70% of investment amount and 80% of invested tenant firms)
- ✓ The reasons of lesser investment activities in North and Central entail; i) farm size is small and scattered so that quality of raw materials is not uniform, ii) quality of fruit and horticultural crop is not satisfactory, and iii) major processing commodities of rice, coffee and pepper need no advanced technology from investors.

(d) Lack of Safety Standards

- ✓ Vietnam's safety standard such as VietGAP does not fulfill international criteria.

(e) Quantitative and Qualitative Issues of Labor

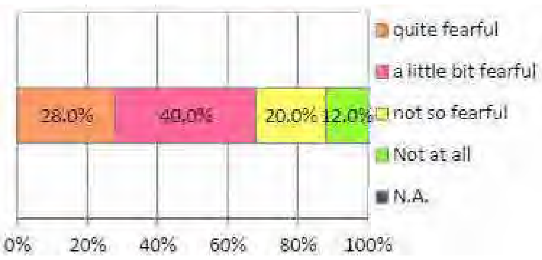
- ✓ Difficulty in gathering competent workers due to lower monthly wage compared with agricultural sector.
- ✓ Shortage of learning capacity of organization brought about by traditional hierarchical relationship; viz. senior teaches junior only how to work but not why to work (rationale).

1.3 Citizens about Processed Food

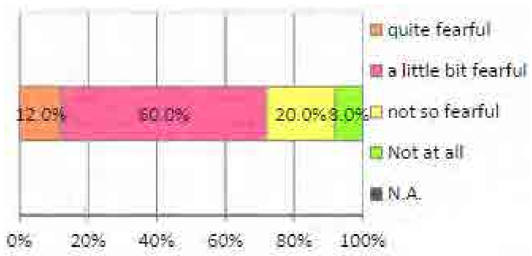
Opinions of citizens about processed food in Hanoi and Ho Chi Minh is as follows:

<About Safety of Vietnamese Processed Foods>

Hanoi



Ho Chi Minh

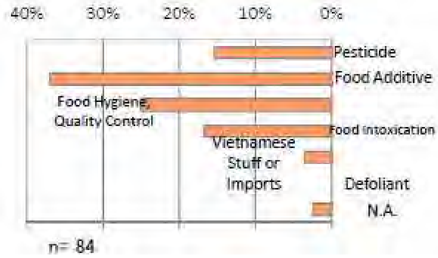


More than 60% of consumers of both Hanoi and Ho Chi Minh feel like "quite fearful" and "a little bit fearful" about safety of food. Since the ratio of "quite fearful" recorded more than double in

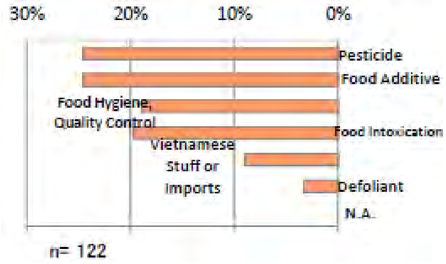
Hanoi, it is considered that the consumers in Hanoi feel more anxiousness about food than those in Ho Chi Minh.

<Fear of Food Safety>

Hanoi



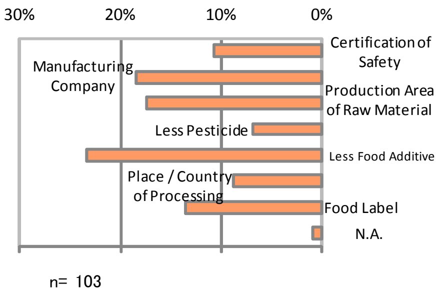
Ho Chi Minh



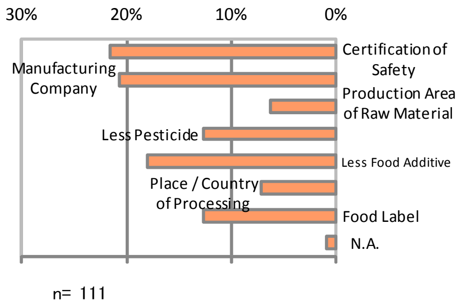
There is trauma among Hanoi consumers induced by milk powder made in China, which contained melamine, so that it is indicated that they have high degree of anxiety to food additive. Also, more percentage (%) than Ho Chi Minh can be observed at the fear toward "Food Hygiene Quality Control", which is managed by human; it can generate the idea that peoples in Hanoi may not trust sanitary control proceeded by the Government. While, there still remains fear of Agent Orange (Defoliant) among Ho Chi Minh consumers and they are more sensitive toward the fear of pesticide.

<Determination of Safe Food>

Hanoi



Ho Chi Minh

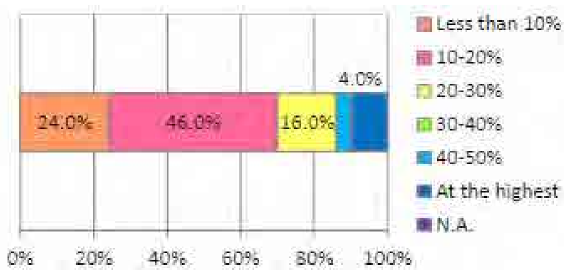


Both Hanoi and Ho Chi Minh consumers supported the condition of "Less Food Additive". Hanoi consumers indicated lesser support to "Certification of Safety" and it would be a sign - taking into consideration the previous result shown in above, that they may not trust government's certificate of food safety. It is also the characteristics of Hanoi consumer that they stick to production site of raw materials.

<Willingness to Pay for Safe Food>

Hanoi

Ho Chi Minh



Hanoi consumers had willingness-to-pay for safe food “10-20%” and “20-30%” higher than other foods and Ho Chi Minh consumers had intention to pay “10-20%” higher. In view of entire proportion, the premium toward safety food is higher in Hanoi; it means that higher proportion of consumers is willing to pay more for safe food.

<Production Area of Safe Raw Material of Processed Foods in Vietnam>

	Hanoi	Ho Chi Minh
Rice Processing Food	✓ Thai Binh:14(Vu Thu: 1, Tien Xuong: 1, Tien Hai: 1, Dong Hung:1), Dien Bien:8 ✓ Nam Dinh:6(Truc Ninh: 1, Xuan Truong: 1, Hai Hau: 1) ✓ Hai Duong: 4, Hanoi Soc Son:2, central region:1, All countries:2,Lai Chau:1,Ha Tinh:1, mountainous area:1	✓ Long An: 20(can duoc: 4) ✓ Mekong Delta Region:14 ✓ Tien Giang:5 ✓ Thai Binh:5 ✓ An Giang:3, Dalat:2, Phu Yen: 2, Vinh Long:1, Dong Thap:1, Can Tho:1, Red river delta region:1
Vegetable Processing Food	✓ Hanoi:13(Dong Anh4), Vinh Phuc:3, Thai Binh:3, Hung Yen:2 ✓ Hai Duong:1, Bac Ninh:1, Thai Nguyen:1, Dalat:1, Hoa Binh:1, Bac Giang: 1	✓ Lam Dong:15(Dalat: 12) ✓ Ho Chi Minh:1, country side:1, Long An:1
Fruit Processing Food	✓ Hung Yen: 9, Hanoi: 5, Bac Giang: 3, Thai Binh:3, Hai Duong:2, Hoa Binh:2 ✓ Binh Duong:1, Long An:1, Binh Phuoc:1, Dong Nai:1, Thai Nguyen: 1	✓ Lam Dong: 11(Dalat: 9) ✓ Mekong Delta Region: 6 ✓ Dong Nai:2
Meat Processing Food	✓ Vinh Phuc:3, Nam Dinh:3, Hanoi:3, Bac Ninh:2, Thai Nguyen:1, Hung Yen:1, Bac Kan:1, Bac Giang:1	✓ Dong Nai: 6 (Bien Hoa: 2) ✓ Ho Chi Minh:4 (Binh Chanh:1), Long An: 3, Dak Lak:1
Fishery Processing Food	✓ Nghe AnCua Lo: 4, Hai Phuong: 3, Thanh Hoa: 3, Hanoi: 3, Thai Binh: 3, Nam Dinh:1, Nha Trang: 1	✓ Khanh Hoa:13(Nha Trang: 10) ✓ Ba Ria - Vung Tau:8 (Long Hai: 3) ✓ Ca Mau:4, Central Region:3, Phu Yen:2, An Giang:1, Vinh Long:1
Milk	✓ Hanoi 20 (Ba Vi: 16), Son La:14 (Moc Chau :12), Nghe An:1	✓ Dong Nai:26 (Long Thanh: 19) ✓ Ho Chi Minh:3, Ha Noi: 2 (Ba Vi: 1), Lai Chau:1

The places marked in yellow are production site which is recognized as "Production Site of Safe Raw Materials" by both Hanoi and Ho Chi Minh consumers. Thai Binh province for rice processed food, Dalat for vegetable processed food, Dong Nai province for fruit processed food, Nha Trang for fishery processed food, and Ba Vi district in Hanoi for dairy product, respectively, are commonly known as safety supply site of raw materials. In particular, Thai Binh province has favorable image of high level of safety by both consumers. Also, Ba Vi district in Hanoi for dairy product is getting famous recently.

As for vegetable, the myth of security in Dalat is not strongly observed just like it used to be. Dalat as safest vegetable production site used to be supported by Hanoi consumers observed from the result of various questionnaire surveys conducted until the beginning of last decade. However, in this survey, predominant peoples tend to choose site for safe vegetable at nearby area.

<Production Area of Safe Raw Material of Processed Foods outside Vietnam>

	Hanoi	Ho Chi Minh
Rice Processing Food	✓ Japan: 13 ✓ Other ASEAN Countries: 11 ✓ European Countries: 4 ✓ United States: 3	✓ Other ASEAN Countries: 25 ✓ Japan: 10 ✓ United States: 2 ✓ European Countries: 1 ✓ China1
Vegetable Processing Food	✓ Japan: 18 ✓ Other ASEAN Countries: 6 ✓ United States: 3 ✓ European Countries: 2 ✓ China1	✓ United States: 11 ✓ European Countries: 11 ✓ Japan: 10 ✓ Other ASEAN Countries: 3 ✓ China1 ✓ Others (South Korea : 1)
Fruit Processing Food	✓ Japan: 16 ✓ European Countries: 11 ✓ United States: 9 ✓ Other ASEAN Countries: 4 ✓ China2 ✓ Others (New Zealand :4)	✓ United States: 20 ✓ European Countries: 11 ✓ Japan: 6 ✓ Other ASEAN Countries: 2 ✓ China1
Meat Processing Food	✓ Japan: 13 ✓ European Countries: 13 ✓ United States: 9 ✓ Other ASEAN Countries: 3 ✓ Others (Australia :3)	✓ United States: 13 ✓ Japan: 10 ✓ European Countries: 8 ✓ Other ASEAN Countries: 2 ✓ Others (Australia : 2)
Fishery Processing Food	✓ Japan: 13 ✓ European Countries: 4 ✓ Other ASEAN Countries: 3 ✓ United States: 3 ✓ China: 1	✓ Japan: 27 ✓ European Countries: 3 ✓ United States: 2 ✓ Other ASEAN Countries: 1 ✓ China: 1
Milk	✓ United States: 17 ✓ Japan: 16 ✓ European Countries: 11	✓ United States: 22 ✓ European Countries: 15 ✓ Japan: 7 ✓ Other ASEAN Countries: 1

Hanoi consumers trust Japanese foodstuff of almost all categories. Especially Japan's fishery processed food are recognized as safest among the products by other countries both in Hanoi and Ho Chi Minh; commanding lead is kept even in Ho Chi Minh where American foods are supported in other categories. Sense of safety for American fruit and dairy products is high in Ho Chi Minh keeping commanding lead to 2nd ranked country.

1.4 Legislative Arrangement on Processed Food

Below is the present legislative setup summarized by category (For detail, please refer to the main report).

Category	Contents
Legislative arrangement on food safety in terms of production, processing and marketing	Definition of processed food, assurance of health and safety on food, provision of food exports, tracking and recall of food products, food safety researching system, punishment, Technical level of food safety, operational examples, legal framework and contents of related laws
Legislative arrangement on land use	For farmland, i) classification, ii) restriction, iii) operational examples, iv) contents of related laws, and for industrial site, i) acquisition means, ii) necessary procedure, iii) operational examples, iv) contents of related laws
Legislative arrangement on inland and export duty	VAT, agricultural products export tax, import tax, corporate income tax, contents of related laws
Legislative arrangement on necessary inspection for export	Export inspection on rice / vegetable / fruit / fishery / livestock, operational examples, legal framework and contents of related laws
Legislative arrangement on outbound investment	Corporate income tax incentives, preferential tariff, conditional foreign capital investment, corporate income tax,legal framework and contents of related laws

1.5 Business Record of Japanese Company in Vietnam

Around 100 food processing companies are operated in Vietnam. Out of which, about 40 companies are registered to the Japanese Business Association of Vietnam.

Table 1.2 Japanese Business in Vietnam

Category	Type	Number of Companies	Challenge
Shrimp Exported to Japan	Business Food Maker	Dozens (Contract Manufacturing)	Safety of processing, Low quality and low price,Safety of raw materials
Catfish Exported to Japan	Business Wholesaller	About 10	Japanese preference (Freshwater fish is not popular among Japanese) Image of Catfish, Safety
Squid Exported to Japan	Food Maker	Several	Safety, Decrease in catch
Tuna Exported to Japan	JV	Several (some is Joint-Venture of Business)	Quality of tuna, Restrict fishing Inadequate port and facilities, the ship
Residue of Fishery Processing	Business	A few	There is no factory in Vietnam (Export), lot production
Ice Engine, Freezing Machine	Maker	1	Saturated and competitive market
Cold Storage Warehouse	Logistic	1	Companies with its frozen facilities has increased (Market is still small) (There is no bonded warehose.)
Frozen / Dried Vegetable Exported to Japan	Food Maker Business	5～6	Lack of suitable sites for Japanese vegetable, lot production, Quality control of raw materials (especially, safety)
Japanese Pickle (Vegetable)	Individual	1	Lack of suitable sites for Japanese vegetable, Quality control of raw materials (Especially, safety)

Category	Type	Number of Companies	Challenge
Rice Processing	Food Maker	6～7	Closed market, Safety of raw materials
Livestock Processing	Food Maker	3	Stable supply of raw materials Establishment of cold-chain
Drink	Food Maker	3	Late market entry, Partnership with local
Seasoning	Food Maker	2	Raw material price increases, Safety of raw materials
Noodle Manufacturing	Food Maker	2	Safety of raw materials
Baking Industry	Food Maker	Several	Lot production, Safety of raw materials

Source) Interview survey conducted by team

2. Strategic Processed Food

2.1 Potential of Attracting Investment Viewing from Present Situation of Raw Material Production

The following figures indicate provincial "potential" of raw materials (Rice, Vegetable, Fishery commodities, Pig). "Potential" accounts for "Surplus" accrued by subtracting "Consumption" from "Production". "Consumption" does not include the volume consumed by processing and simply considered only dietary volume taken by existing population.

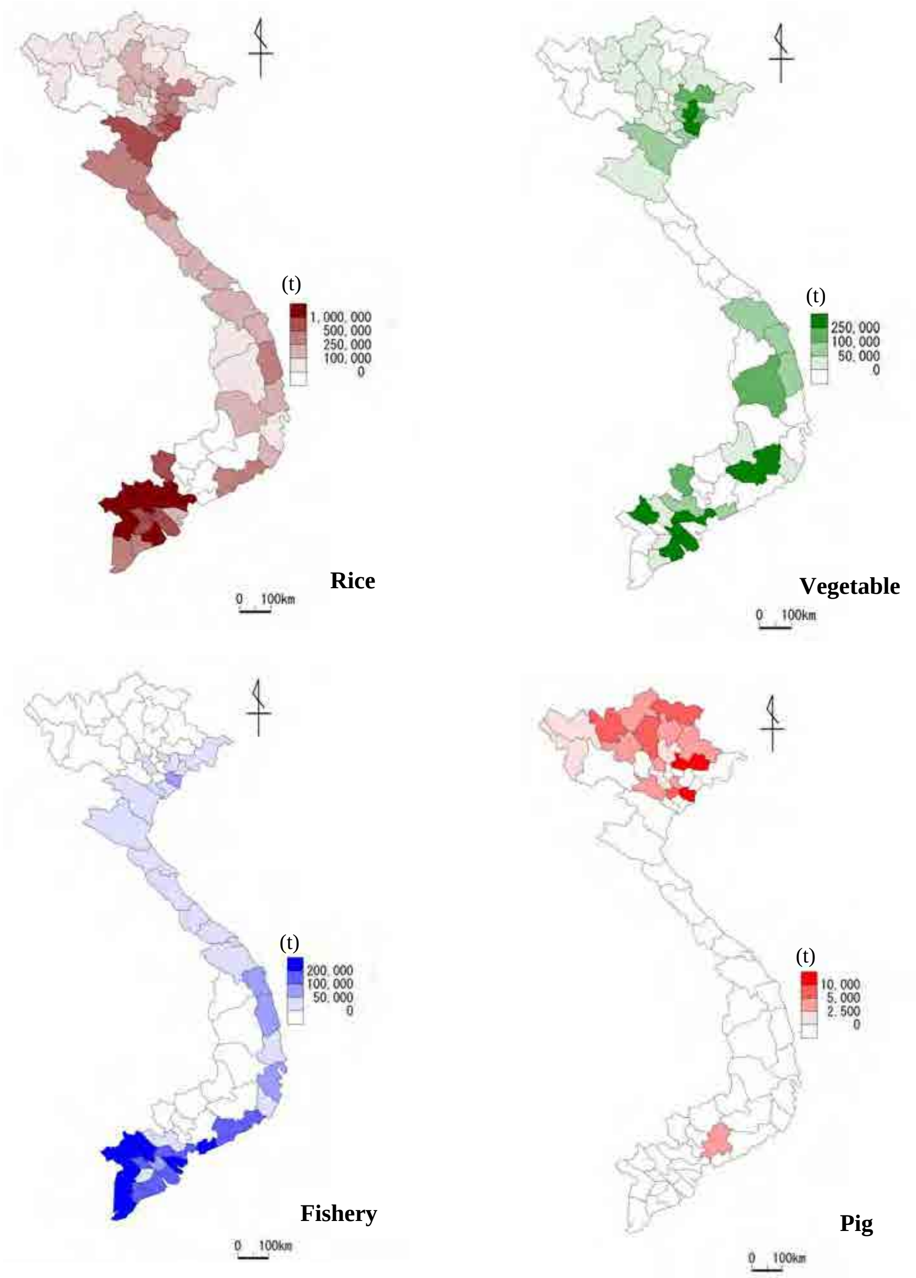


Figure 2.1 Potential of Raw Material Production

Source) General Statistical Office

(1) Rice

There are two (2) major high potential rice production areas in Vietnam, i.e., Red river delta region and Mekong delta region. The potential area is Kien Giang province, An Giang province and Dong Thap province.

(2) Vegetable

Starting with Dalat in Lam Dong province, Red river delta region, Mekong delta region also are potential area. Foreign direct invesetment in vegetable processing is accumulated in Lam Dong province, however, northern region also have potential of raw vegetable material.

(3) Fishery

Shrimp and catfish is the most common material for fishery processed food. Most of the production areas for fishery materials are accumulated in the southern provinces. Especially, shrimp farming is concentrated in Ca Mau province, Bac Lieu province, Soc Trang province. Catfish farming is concentrated in Dong Tap province, An Giang province, Can Tho province. Squid fishery and processing became popular around Khanh Hoa province in recent years and some companies export their products for Japan. In Vietnam, fishery processed foods which are produced on a scale that can attract Japanese investors ares limited for these three products.

(4) Livestock

Pig, outstanding among Vietnamease livestock production, has up 15,000 ton of potential of surplus both in Bac Giang and Thai Binh provinces. Other potential provinces are distributed in northern regions such as Tuyen Quang and Lao Cai provinces. Although Japanese investment is concentrated in Dong Nai province, there are no other provinces except Dong Nai which has surplus production in the southern area.

2.2 Potential of Attracting Investment Viewing from Present Situation of Processing

2.2.1 Present Situation

	Rice processed foods	Vegetable and Fruits Processed Foods	Fishery Processed Foods	Livestock Processed Foods
Quality Management	There is no quality standard of paddy. Paddy is traded by traditional practice	VietGAP is mostly used as standard. Based on VietGAP, JICA project for improving quality of crops is being conducted in six (6) provinces near Hanoi.	Safety of Vietnamese fishery products is not evaluated well in worldwide. The quality control of raw materials production is a problem.	Quality of processed meat is not constant because quality of pigs is not homogeneous.
Traceability	Few producers apply. It seems difficult to ensure traceability in current procurement, milling, and distribution system.	It is impossible to ensure traceability in current distribution system. Some retailing shops procure safe vegetable by themselves.	Traceability can be practiced by only major companies which have vertically integrated production process.	Properly slaughtered pigs are stamped, so that traceable until authorized slaughter house.
Processing Technology	Very low, because of wrong post-harvest	Degree of processing is low. For products	In most cases, catfishes are exported	Commonly processed to meat (fillet).

	procedure at farmers and collectors stage. The deterioration is caused by poor drying and storage facilities.	exported to Japan, strict quality management is being conducted.	as fillets. Shrimps are exported with freezing and primary processed. In general, raw fishes are distributed in the domestic market.	Japanese company penetrated to ham/sausage processing in 2011.
Shipment Destination	Domestic trade is 70%, export is 30%. Most of low quality rice is exported to Africa. For domestic market, high quality and good taste rice will be required in the near future.	80% of vegetable processed food is for export. Over 50% of vegetable processed food exported to Japan is frozen vegetable.	Shrimps are exported for Japan and U.S. Catfishes are exported for EU.	Due to the lack of cold chain, meat is sold domestically. 80% of export is to Hong Kong.
Structure of Production Cost	The invoice price from farmer to retailer is about 25 %.	About 70% is material cost of vegetable processed food and 10% is labor cost.	70% of the selling price of shrimps and catfish is material cost. Shipping prices of shrimps are about three times higher than that of catfish.	Approx.70% and 50% are material cost (pig) of pork fillet and ham and sausage, respectively.
Export Inspection	Export Inspection is carried out only when contract require. Most of export is low quality rice for Africa, and those countries have no safety standard.	Products are tested by governmental laboratory and after that, Vietnam government issues certificate for export product. Export inspection which meets criteria of importing countries are conducted by each companies.	Exporters pay for the inspections of food safety for destination country by their expense. There are many cases for exports to Japan that Vietnamese fishery products are suspended by border inspections.	Export permit by Animal Health Dept. of MARD or DARD, slaughtering at authorized place, inspection by regional Animal Health Center, and reception of quarantine certificate from frontier quarantine office.
Procurement of Equipment	There are many ramshackle rice-mills in Vietnam. The facilities are out of date and required renewal.	In frozen / dried vegetable processing factories, most of processing machineries are from Japan. Japanese processing machineries are recognized high quality.	Japanese refrigeration equipment has high market share with appraisal of their good maintenance network system.	Most of secondary processing machineries are from Europe. European/American companies are targeting export of slaughtering machineries.
Institutional Setup	System on exports is progressing, legal system on domestic trade is not developed.	VietGAP is under development as standard. Most of production area is not implementing VietGAP.	In addition to the TCVN, there are regulations for hatcheries, fish farms, fish foods, chemical drugs and so on. Though, representation of drugs is unreliable.	Legislations for animal sanitation cannot cope with the regulation of importing countries, so that these will be renewed in 2012. Regulations on location are prepared for slaughtering facilities/services.

Distribution / Marketing	Multi- stages. Domestic traders are mostly small scale enterprises. Exporting companies are mostly big private companies.	Traditional logistic system is still common. For domestic market, most of distributor is small-scale. For export to Japan, mostly companies transport by themselves.	Extremely small amount of fishery processed products is distributed for local market. Export products for Japanese market have been produced on consignment by Vietnamese company from Japanese trading companies.	Domestic distribution is common, because of shortage of cold chain and allergy of meat processed foods by consumers.

2.2.2 Investment Possibility

The promising fields of investment by Japanese company are shown as follows;

(1) Rice Processed Food

Promising Investment by Japanese Company:

- ✓ Sales of agricultural and manufacturing machinery : 4 wheel tractor for rice (Asian type), Rice combine-harvester
- ✓ Sales of rice processing machinery and facilities: Rinse-free rice polishing machinery, Rubber-roll type husking unit (Paddy-cleaner, 5 inch rubber-roll husking unit: husker with paddy-brown-rice separator), Rice cooking facilities, Rice bran-oil production and its facilities, Small rice flour milling and rice noodle machinery for domestic producers, Color-sorter, Husk burning power generator
- ✓ Provision of Japonica rice cooking venders for supermarkets and convenience stores
- ✓ Processing and export (EU, Russia, Middle East, Other Asian countries): Rice wine, liquor(Shochu), Sweet-sake(Mirin), Instant-rice, Rice-bran-oil processing and export()

Major Market: Domestic market of Vietnam, Third country other than Japan (EU, Russia, Middle East)

(2) Vegetable and Fruit based Processed Food

Promising Investment by Japanese Company:

- ✓ Introduction of good quality seed:Cooperation between Japanese big seed company and Vinaseeds
- ✓ Sales of vegetable processing machinery and equipment : Slicer, Washer, Dryer, Wrapper
- ✓ Provision of service by authorized inspection / certification institutions: Japanese inspection entities operate in Vietnam as the authorized institution by Ministry of Health, Labour and Welfare of Japan.
- ✓ Manufacture and sales of processed food:frozen hotpot for domestic market of Vietnam, frozen / dried vegetable and Japanese pickle for Japan

Major Market: Domestic market of Vietnam, Japan

(3) Fishery Processed Food

Promising Investment by Japanese Company:

- ✓ Catching, processing, storage and export of tuna / bonito; In 2011, Japanese JV initiated by IT giant company got the business license from Phu Yen province.
- ✓ Export of catfish: The demand in Japan has been increasing
- ✓ Operation of cold chain, cold storage, bonded warehouse: Formulation of the base of tuna catching in central region will be beneficial for logistics provider because both North/South and South/North cargo movement comes to be available, avoiding the risk of empty return haulage.
- ✓ Provision of service by authorized inspection / certification institutions: Japanese inspection entities operate in Vietnam as the authorized institution by Ministry of Health, Labour and Welfare of Japan. Their certificate is eligible to omit import physical check and can reduce the burden of import procedure.
- ✓ Manufactures of value added /frozen processed food for domestic market: Chamber of Commerce in HCM indicates that many Japanese SMEs are eager on this field.
- ✓ Sales of processing machinery : Precious filleting machine, fryer, etc.
- ✓ Practical use of sediment (only for big companies): Fertilizer or feed products (assorted feed combined with rice bra), extract materials from collagen or chitosan

Major Market: European Countries, United States, Japan

(4) Livestock Processed Foods

Promising Investment by Japanese Company:

- ✓ Supply of feed(by big capitalist):Trigger of vertical integration
- ✓ Consistent business from fattening~slaughterting~proccessing:Aiming for stabilization of product quality, safety of raw materials, and cost efficiency (possibly by big trading companies).
- ✓ Construction of livestock and agriculture procceing industrial park: Promising in the northern Vietnam and Dong Nai Province with rich potential of pig.
- ✓ Production of ham and sausage for domestic market: A big potential to penetrate market (hotel and restaurant, supermarket etc.). Market penetration by joint venture of manufacturer and trading company will increase.

Major Market: Domestic market of Vietnam, Hong Kong

3. Development Concept

3.1 Ensuring of Stable Supply of Raw Materials and Method of Transport

(1) Rice Processed Food

The Vietnam government has a strategic policy of rice exports at competitive price, and improvement of Vietnamese rice quality depends on the global market mechanisms. However, demand of high quality rice is thought to be evoked from the Vietnamese domestic distribution. Thus, the demand for Japanese agro machineries of Vietnamese market will increase with their high quality and durability. Support of Japanese government is not needed for agro machinery sales, because it should be done by private initiative. On the other hand, Vietnamese rice has food safety problems, such as pesticide residues, mycotoxicoses and so on. These problems affect adversely Japanese rice cooking venders which are going to invest for Vietnam in a few years. Therefore, new ODA project for “Pilot farm of safety rice production” should be created in Mekong delta to spread the farming technology of low pesticide usage and properly improved post-harvest technology for Vietnamese farmers.

(2) Vegetable Processed Food

There are food safety problems of raw vegetables for material use in Vietnam, thus it is difficult for Japanese companies to invest the exporting vegetable processed food in Vietnam at the moment. Therefore, it is important for Vietnam to establish stable production area for safe vegetable at first. It is assumed that Japanese companies will invest vegetable processing food at production area like Dalat, where is known as safety and good quality of vegetables. These products are thought to be shipped for both domestic market and global market. For promoting Japanese business investment to Vietnam, Japan should support to develop the reliable production area in Vietnam using ODA. The ODA support is needed to establish the modern distribution and logistics system of vegetables for the success of the project like “Strengthening the Capacities for the Field of Management of Vietnam's Crop Production Sector for Improving the Productivity and Quality of Crop's Products”, being conducted in northern region near Hanoi for supporting vegetable production area. From a macroeconomic perspective, it is important for Japanese government to support the NRDP (New Rural Development Plan) simultaneously at North Vietnam, which has high potential for vegetable and fruit material. It causes the investment for agriculture and rural sector by Japanese logistics companies and second processing food companies.

(3) Fish Processed Food

Japan is the one of the largest importing country of Vietnamese shrimp. Japan also has enough potentiality to import catfish (tra) from Vietnam. Some Japanese companies have recently invested to tuna resources in Vietnam. It is expected that further investment by Japanese small and medium enterprises for domestic market and production of highly processed food will be increased in Vietnam. The most serious problem of fishery materials is poor Vietnamese standard of food safety. There are technical assistance project by Japanese government for strengthening two inspection agencies in southern Vietnam. Although, it is not enough to satisfy the needs of Japanese investors, which need to simplify the food inspection (with establishing the agencies approved by Japanese Ministry of Health, Labour and Welfare), or ensure the convenience by establishing a number of inspection agencies.

There are problems for distribution of fishery processed food in Vietnam; low load capacity of bridges in southern area. Especially, many Japanese shrimp exporters are facing this problem. It needs urgent support to reinforce and rehabilitation of these bridges to remove the high risk of accidents. In addition, it is important issue for Japan to keep stable tuna resource as national policy. Therefore, Japan can support Vietnam government by development of fishery industries and improvement of incomes for fishermen. Cooperation programs for fishery industries can satisfy national target of Vietnam and Japanese national interest simultaneously.

(4) Livestock processed foods

It is difficult for Japanese companies to invest in beef cattle and chickens because they have food safety problems and qualities at this moment. Also, the negotiation between Japanese dairy product manufacturers and Vietnamese partners does not seem to be going smoothly. Japanese investors are interested in i) vertical integration which is based on feed production (this investment is applicable only by big capitalist) and ii) pork based processing (ham and sausage). According to the vanguard Japanese investor of livestock foods, they have problems of product quality due to the poor sanitary management of raw materials and lack of food standard in Vietnam. Food companies need products based on global standard for worldwide marketing. Thus, two targets; i) securing safety of raw materials and ii) transferring Japanese food standards to Vietnam, are profitable for both Vietnam and Japan. Therefore two projects should be created which correspond to the targets; i) demonstrating a successive process of safety ham/sausage production for farmers, buyers and food companies in Vietnam ii), dispatching Japanese expert and supporting to prepare the food standards in Vietnam.

3.2 Size and Location of Food Processing Site

For vegetables and fruits processing, the support is needed to form the basis for advance of Japanese food-processing industry through contributing the NRDP in the northern provinces which have big potential of raw materials.

For fishery processing, the central provinces have high priorities for development, reviewing from the Vietnamese economical development, the response to the environmental issues and so on. Considering these factors, it is proposed to develop the tuna fishery base in Da Nang through the preparation of fishery market.

For livestock processing, there are concerns of investors for sanitary management and stability of quality control on raw materials (pork meat) production. Therefore, training is necessary for not only the farmers, but also the distributers, middlemen and processing companies through demonstrating the consistent process in big scale. It is proposed that the construction of a pilot farm using the scheme of

JICA's investment finance in private sector. The priority will be placed for activation of DOFICO in Dong Nai province, the investment of Japanese companies is concentrated with expecting the spillover effects. In addition, it is desirable to create the simultaneous support of training programs for human resources in northern provinces through JICA's assistance for enhancing the investment to north Vietnam. In particular, it is also effective to dispatch Japanese experts for assisting the design and preparation of operation plan for proposed pilot farm, and setting and implementation of the training program.

3.3 Necessary Infrastructure and Facility

Thinking about the contributing for existing Japanese tenant firms and attracting the new investments from Japanese company, there are a lot of infrastructure problems in Vietnam. Some critical issues are weight durability of bridges and preparation of cold chain logistics. According to the constraint of time for survey, JICA Survey Team could survey only typical fishery product transportation route; Ho Chi Minh - Bac Lieu province - Ca Mau province. It is recommended to conduct inventory survey of the bridges in the route of vegetable logistics (Dalat - Nha Trang) and livestock logistics (in the future) to grasp the urgent needs for finding the project of strengthening weight durability of bridges on these routes.

In this report, cold chain is not list up by government assisted project according to the following reasons;

- ✓ It is considered that the development of cold chain proceeds spontaneously with the development of fishery port and market.
- ✓ Some Japanese private logistics company is advancing consolidation of cold chain, thus the government support may be caused the pressure for the private sector.

3.4 Necessary Legislative Arrangement

The legislation for processed food in Vietnam is usually pointed out as old-fashioned from both domestic and overseas. The Vietnam government is going to reform the legislation within these 1-2 years.

Legislative arrangements in Vietnam which need support of Japanese government are i) formulation of food standards (particularly livestock processed foods), and ii) reform of bonded legal system. Both arrangements should be implemented through dispatching of Japanese experts. The former aims to bring Vietnamese food standards closer to that of Japan. Similar project has been already implemented for industrial products (electronic parts) and it is contributed to both Vietnamese and Japanese private sector. The latter will benefit to entire Japanese companies locating in Vietnam and accelerate investment from small and medium enterprises which are planning to advance in Vietnam. In particular, the Project intends to promote flexible operation of bonded warehouse and accelerate distributer's processing activities inside facility.

3.5 Processed Foods' Value Chain and Promoting Investment Field

Rice Processed Food : Value Chain and Promoting Investment Field

*Business Opportunity which mention no market targeting domestic market in Vietnam

	Production &	Drying & Storage	Milling, Polishing & Grading	Wholesaler	Retailer	Domestic Market
Business Opportunity of Investor (pink); Field Assistance by ODA (yellow)	Manufacture and Sales of Agricultural Machinery (4W Tractor, Conbine-harvester, Rubber-roll Husking Unit)					Japanese restrants
			Rice noodle manufacturing facilities for large scale manufactirers, Samll scale rice flour mill and noodle machinery for medium enterprises			
		Sales of Japonica rice, cooked Japonica rice to Japanese retailers (Supermarket & Convienience Stores)				
			Rinse-free rice production, Rice cooking facilities, Instant rice manufacturing, Rice bran oil production & de-oiled bran utilization (high protain feed: mix with fish organ)			
	Pilot Project on Securing Safe Japonica Rice Production and Processing					
			Processed rice commodities: Rice wine, Shochu, Miso, Mirin, Instant rice (Asia/Russia/Middle-east export)		Modern distribution bussiness (Super-market, CV store)	
Degree of Saturation of Market	Big	Big	Medium (Japonica rice is already produced)	Big	Big	Small-Medium (Rice processed commodities have a business chance to expand)
Major Companies Involved	Contract farming (Major private miller・VINAFOODs concerned)	VINAFOODs concerned : e.g. AFIEX (An Giang Agriculture & Food Import Export J.S. Company), LFC(Long An Food Company) Another Private Companies : e.g. Lotus Rice(Blue Ocean Im-Export Co., Ltd)			VINAFOODs concerned Another Retailers	VINAFOODs concerned
Possibility of Penetration by Japanese Company	Small *For Agricultural machinery, Possibility is Large **For Japanese agricultural machinery manufacturers, production and sales, demand is increasing (eg.4W tractor, harvester)	Small (Rubber roll husker: Large)	Small (Japonica rice is monopoly market by some milling companies, Rice milling facilities market: Large)	Small (Processed rice commodities: Export market Large, except Japanese market)	Small - Medium (Logistic infrastructure & Facilities required Super-market & CV store investment)	Small (Restrants in Urbans: Suturation)
Strong Point of Japanese Company	Performance/Quality /Duability	Agricultural machinery for rice /Post-harvest machinery & Facilities	Rubber-roll husker, Rice flour-mill & Rice noodle machine for small enterprise, Post-harvest machinery & facilities	none	none	none

Sourse) JICA Survey Team

Vegetable Processed Food : Value Chain and Promoting Investment Field

*Business Opportunity which mention no market targeting domestic market in Vietnam

	Production	Collection / Shipment	Forwarding / Retailing	Processing	Forwarding	Market / Export
Business Opportunity of Investor				Strengthening of Function of Inspection Labo / Technology Transfer		
				Safety Inspection Labo		Restaurant, Hotel
	Introduction of good quality seed (Nursery,Seed Sales)			Frozen seafood hot pot for market in Vietnam, Frozen / Dried Vegetable and Japanese Pickle export to Japan		
Field Assistance by ODA	Technical Transfer to Vegetable Production Area based on GAP	Strengthing the Capacities for the Field of Management of Vietnam's Crop Distribution Sector			Modernized Forwarding Operation (Supermarket, Convenience Store)	
				Establishing Cold-Chain / Distribution Network		
Field Assistance by ODA （being conducted）	Collective Collection and Shipments and Sales of Safe Vegetables Utilizing Roadside Station			Processing Machinery / Service		
Degree of Saturation of Market	Medium	Medium	Medium	Low ～ Medium	Low ～ Medium	Low ～ Medium
Major Companies Involved	Individual Farmer Vinaseeds US Fertilizer Company	Individual Farmer Cooperative* Collector Middleman *Number is still small	【Forwarding】 Family-run trader Cooperative Individual Farmer 【Retailing】 Market,Supermarket,Safe Vegetable Shop runned by NGO or government projects	Canned Vegetable Factories in North Frozen / Dried Vegetable Factories in Lam Dong Canned Fruit Factories in South		
	Local Business (HAPRO),Vegetable and Fruit Exporting Company (Vegetexco),Medium-Scale Canned Fruit and Vegetable Producing Companies(Dong Giao Food Stuff Company), Frozen / Dried Vegetable Producing and Exporting Companies (Da Lat Agrifoods, etc.)					
Possibility of Penetration by Japanese Company	Medium (Takes time and money to produce vegetable which meets quality standard)	Medium～Big (Difficult to manage the collection and shipment by individual farmers,Difficulty in collective collection and shipment)	Medium～Big (Difficult to procure stable high-quality standard products)	Medium (Promising on the condition that the system which enable procurement of safe and high quality vegetables is established)	Medium (Establishment of Cold-Chain / Distribution Network)	Medium (Brand Formation by Emphasizing Food Safety)
				Japanese Vegetable Pickle Company		
	State-owned seed companies have partnered with Japanese seed companies					Japanese Supermarket and Convenience Store start operation
	Frozen / Dried Vegetable Processing Company					
Strong Point of Japanese Company	Technology / Quality	Confidence in the safety	Confidence in the safety	Technology / Capital Power		Brand Name / Stability of Product

Source) JICA Survey Team

Fishery Processed Food : Value Chain and Promising Investment Field

*Business Opportunity which mention no market targeting domestic market in Vietnam

	Production (Catch/cultivation)	Processing	Storage / Export	Processing	Distribution	Market/Export
Business Opportunity of Investor (pink)	Tuna/Bonito catch	Purchasing, processing, storage Export for tuna/bonito				
						Retail for "Sushi"resturant
Field Assistance by ODA (yellow)	Project for Dissemination of Fishery Port Sanitary Management and Establishment of Tuna Supply Base					
		Logistic service(Cold chain, cold storage, bonded warehouse)				
	Strengthening of Function of Inspection Labo / Technology Transfer			Strengthening of Function of Inspection Labo / Technology Transfer		
				Promoting value add products produce (for domestic market)		
	Bridge rehabilitation				Contemporary retail (Supermarket convenience store)	
		Tra export		Exporting fishery processed food(fry,surimi) for EU or USA		
		Practical use of sediment (Fertilizer, feed, extract materials from collagen or chitosan)		Processing machine and its maintenance		
Degree of Saturation of Market	Low	Low (large for export)	Low (large for export)	Low (Value processing is few)	Low～Medium (Value add processing is few)	Lowl～Medium (Few value add products)
Major Companies Involved	None	No large scaled company	Local entities Japanese trader, manufactures	Few Japanese producer, Mostly local small entities	Japanese/local logistics providers	Domestic entities VASEP members(export)
Possibility of Penetration by Japanese Company	Big (Deep-sea fishing)	Low (Farming integration is difficult for foreigners, limited for locals)	Low～Medium (Export entities are saturated, storage is necessary for JV)	Big (processing technology) (Processing brought-in materials)	Big (Cold chain formulation/logistic network formulation)	Medium (Restaurants in city area are already saturated)
	JV initiated by large IT company acquires tuna business license in Central region					
				Many SME is considering penetration(HCM Japan Chamber of commerce)	Temperature controlled trucks/Consolidation	Supermarket, convenience store Cold chain formuration in North
Strong Point of Japanese	Catch technology	None	Marketing	Technology/capital	Technology for cold chain system	Large retail and convenience store penetration

Source) JICA Survey Team

Livestock Processed Food: Value Chain and Promising Investment Field

*Business Opportunity which mention no market targeting domestic market in Vietnam

	Production	Slaughtering	Forwarding	Processing	Forwarding	Market/Export
Business Opportunity of Investor (pink) / Field of Assistance by ODA (yellow)	Feed Supply			Establishing Cold-Chain Network		Sales to High Income Earners (at Hotel etc)
	Factory Integration: Production～Slaughtering～Processing					
	Establishment of Livestock based Agro Processing Industial Park					
				Strengthening of Function of Inspection Labo /Technology Transfer		
				Safety Inspection Labo		Restaurant
	Supply of Superior Species (Artificial Insemination Service, Supply of Sperm)					
				Production of Ham and Sausage		
	Livestock Pilot Project (Technical Assistance, Capacity Development, Support of Partnering)				Modernized Forwarding Operation (Supermarket, Convenience Store)	
				Strengthing the System and Operation on Processed Food Standards and Conformance		
	Support of Artificial Insemination Project			Suppy of Processing Machinery and Services		
						Forwarding/Bonded Storage
Degree of Saturation of Market	Midduim	Low	Low	Low	Low	Middium (Blanding through appealing of Safety of Product)
Major Companies Involved	Cargill, CP	17,000 Slaughter Houses Nationwide	Forwarding Company having Cold-Chain Network		Europe based company(Danone, Nestle) Domestic Forwarding	
Possibility of Penetration by Japanese Company	Middium (Merging of company)	Small (Tough without value-chain)	Small (No posibility to grow and local network is needed)	Big (Joint operation of Meat Processing)	Big (Establishing Cold-Chain/Forming Forwarding Network)	Medium (Blanding throgh appealing of Food Safety)
				Japanese JV group started ham and sausage production in Dong Nai Province		
	Big Trading Companies announced to enter to the business (aiming vertical integration in the future) →		→			Japanese Supermarket and Convinience Store start operation soon
Strong Point of Japanese Company	Capital Power			Technology/ Capital Power	Capital Power /Work Experiences with Japanese Companies	Bland Name/ Stability of Product

Source) JICA Survey Team

4. Potential Project

Potential projects for promotion of strategic processed food creation and foreign direct investment from Japanese food businesses, which seems to be effective through ODA are summarized as follows:

Project No.1	Pilot Project on Securing Safe Japonica Rice Production and Processing
Processed Food Category	Rice Processed Food
Scheme	Technical Assistance
Contents of the Project	Establishment of demonstration farm and model facilities of safe Japonica rice and dissemination of GAP and Japanese post-harvest technology to the farmers, sanitary management to processing enterprises.
Project Site	Farm and Research Institution related to SIAEP and/or VINAFOOD 2 (Ho Chi Minh, Can Tho)
Scenario of accelerating Japan's investment	The export inspection of rice is done based on the contract, thus, the inspection of remaining chemicals and/or mold toxin is done only when the contract require. In fact, Japanese investors who are brewing sweet-sake (mirin) and liquor (shochu) and etc., confirm that the contamination of residual pesticide in Vietnamese rice exceeds Japanese standard. The milling technology and rice processing technology is still low, and it makes difficult to ensure safety of rice at the stage of post-harvest and processing. At this moment, Japanese big supermarket and convenience are to be located in Ho Chi Minh, and safety of rice is the first issue, also, investment opportunity will increase if the cultivation of safe Japonica rice spread.
Input from Japan	JICA Expert: 50 M/M (cultivation management, mechanized farming, post-harvest technology) Machinery and Equipment : Agricultural machinery of rice, postharvest machinery and equipment, rice processing machinery
Implementation System	Vietnamese Side : Department of Crop Production under MARD, SIAEP, VINAFOOD 2
Impact	Vietnamese Side: ✓ Farmers' income gain through sales of good quality paddy ✓ Improvement of hulling and milling technology Japanese Side: ✓ Supply japonica rice and japonica rice processing food to Japanese supermarket to be located in Vietnam ✓ Increase of business opportunity on agricultural machinery, rice processing machinery

Project No.2	Improvement of Distribution System of Safe Vegetables
Processed Food Category	Vegetable Processed Food
Scheme	Technical Assistance
Contents of the Project	In parallel with "Strengthening the Capacities for the Field of Management of Vietnam's Crop Production Sector for Improving the Productivity and Quality of Crop's Products", supporting indirectly for building distribution and sales system for safe and good quality products as follows: 1. Promoting establishment of cooperative collection and shipment including hygiene / quality management, cooperative sales and distribution, promoting cooperation with retailer. 2. Providing indirect support for the detailed design of VietGAP and promoting

	understanding of VietGAP of consumers with a view to strengthening certification system. 3. Raising awareness through Public Release: food education, visits to production areas by consumers, and networking event between producers and consumers In result, promote expansion of safe vegetable production area.
Project Site	Project site of "Strengthening the Capacities for the Field of Management of Vietnam's Crop Production Sector for Improving the Productivity and Quality of Crop's Products" (Hung Yen,Ha Nam,Hoa Binh,Quan Ninh,Thai Binh,Hai Phong)
Scenario of accelerating Japan's investment	Build distribution system for delivering safe vegetables to consumers safely and strengthen the certification system as efforts toward establishment of stable safety crop production area and calling for Japanese investment in vegetable processing.
Input from Japan	JICA Expert : 35M/M (advanced distribution system, collect and shipment, strengthening certification system, PR expert, sanitary control) Equipment : collect and shipment house,goods necessary for Extension and advertisement
Implementation System	Vietnamese Side : Department of Crop Production under MARD, DARD in project site, representative of district / commune / cooperative
Impact	Vietnamese Side : ✓ Shipping and sales of safe vegetable ✓ Conducting regularly scheduled meeting for networking between consumer and production area of safe vegetable ✓ Increase in purchase volume of safe vegetable and securing consumer's health Japanese Side : ✓ Procurement of safe and high-quality raw vegetable for processing

Project No.3	Project for Dissemination of Fishery Port Sanitary Management and Establishment of Tuna Supply base in Da Nang
Processed Food Category	Fishery Processed Food
Scheme	Yen Loan (or Fishery Grant Aid)
Contents of the Project	Dissemination of sanitary management for fishery boat, port and construction of pier (slip yard, boat slip, etc.), fish treatment and processing site, retail site, ice making plant, cooling place, freezing place, etc.
Project Site	Da Nang
Scenario of accelerating Japan's investment	Formulation of the base of tuna catching in central region will be beneficial for not only Japanese big supermarket to be located in Hanoi and Ho Chi Minh but logistics provider because both North/South and South/North cargo movement comes to be available, avoiding the risk of empty return haulage. The development of cold chain proceeds in south and north make food distribution effective and promote new investment.
Input from Japan	Equipment and Facilities, Engineering Survice, Training
Implementation System	Vietnamese Side:Department of Aquaculture under MARD, VASEP
Impact	Vietnamese Side : ✓ Improve quality of exporting products (improve sanitary / hygiene management, increase yield of fish) ✓ Increase fishermen's income through introduction of bigger fishery boat, higher yield, and development of fishery processing industry ✓ Effective utilization of marine resources through introduction of bigger fishery boat ✓ Trigger industrial development (the project is coincident to the result of Master Plan Study of Central Province conducted by JICA) ✓ Dissemination of know-how of sanitary management to nearby fishery port.

	✓ Settling environmental problem through rehabilitation of fishery port such as settlement of sea pollution Japanese Side : ✓ Satisfying products lines of supermarket to be located in Vietnam ✓ Availability of both north→south and south→north cargo movement brought by formulation of base of tuna catching in central region. ✓ Synergy effect with SPS project conducted by JICA through development transit point for distribution of sample of inspection

Project No.4	Livestock Pilot Project in Dong Nai Province
Processed Food Category	Livestock Processed Food
Scheme	JICA's investment finance for private sector + Dispatching Expert
Contents of the Project	In order to develop livestock industry in northern provinces, investment finance for private sector will be provided through JICA and pilot farm to train farmers, traders, and local government staff will be prepared. JICA expert will be dispatched in order to support designing pilot farm, formulating operation plan and training program, and implementing training. The pilot farm will demonstrate producing feed, fattening animals, slaughtering, and processing meat. Dong Nai Food Industry Company (DOFICO) will be the recipient entity of the finance. There are several Japanese companies which are tying up with DOFICO, so that the pilot farm will attract Japanese investors for their ocular inspection.
Project Site	DOFICO's property in Dong Nai Province
Scenario of accelerating Japan's investment	As is seen in Japan where ham and sausage processing company can make business on provincial basis, there still remains the investment possibility by ham and sausage processing company. Especially the northern provinces with bigger potential of pig production, investment opportunity will increase if the technology level of concerned people upgrades. Before the Project gets on truck, it is necessary to dispatch Japanese expert for two years and assist preparation/implementation of training program.
Input from Japan	JICA Expert: Expert 1 persons x 2 years (Design and Operation Plan) Expert 1 persons x 2 years (Training Program and Training Implementation)
Implementation System	Dong Nai Provincial Peoples' Committee, DOFICO, (Japanese Companies)
Impact	Vietnamese Side : ✓ Enhancement of livestock development in Northern Provinces and appeal to potential investors. ✓ Stable supply of pig from contracted raisers. ✓ Quality increase (sanitation and hygiene) of pig ✓ Acquirement of know-how on Japanese advanced processing technology and operation system Japanese Side : ✓ Securing stable manufacturing and safety of food through improvement of quality of raw materials ✓ Smoothening of business expansion through networking with trainee

Project No.5	Project on Strengthening the System and Operation on Standards and Conformance
Processed Food Category	Livestock Processed Food
Scheme	Technical Assistance
Contents of the Project	The Project will support forming processed food standards. Japan provided similar project in the field of electronic parts and the Project is the retread of it.
Project Site	Hanoi
Scenario of accelerating Japan's investment	The Project facilitates investor's import of raw materials and communalizes raw materials and processing tools through reflecting Japan Agricultural Standards (JAS) to Vietnam's food standards. The investor can produce same product using same materials and machines used in Japan.

Input	JICA Expert : 100 M/M (chief advisor, project coordinator, specialist of specific field of processed food (short time assignment))
Implementation System	Departments in charge of food standards under MARD
Impact	Vietnamese Side : ✓ Increase export to Japan brought about by communization of food standards. ✓ Progress of Japan-Vietnam Economic Partnership Agreement ✓ Formulation of international food standards Japanese Side : ✓ FDI increase by Japanese food processing manufactures. ✓ Increasing globalization of Japanese products through unifying standards. ✓ Simplification of procedure on import and export of raw materials ✓ Communalizing processing machinery and manufacturing equipment

Project No.6	Bridge rehabilitation project for main logistics corridor
Processed Food Category	All kind of Processed Food
Scheme	Yen Loan
Contents of the Project	Upgrading weight limit on low-capacity bridges where locates along with corridor connecting production site and export port as following site ✓ Bac Lieu-Ca Mau ✓ Cai Lay-Vinh Long ✓ Dalat-Nha Trang
Project Site	Bac Lieu-Ca Mau, Cai Lay-Vinh Long, Dalat-Nha Trang
Scenario of accelerating Japan's investment	Expectedly, further investment will accumulate in the place where many Japanese companies are located, thus, bridge rehabilitation contribute transport of manufactured goods of new tenant firms. Especially for transport of shrimps and catfish, a lot of Japanese companies purchase them for export to Japan, logistics cost reduction and safety of products is the critical issue, thus, contribution of the project is so big.
Input	Yen Loan + Consulting Service
Implementation System	Directory of Road of Vietnam under MOT
Impact	Vietnamese Side : ✓ Development of fishery processing industry through increase in competitiveness of Vietnamese products' export. ✓ Job creation and income growth ✓ Regional development through increase of distribution and contribution to formation of national network Japanese Side : ✓ Reduce of import freight cost ✓ Solution of transshipment problem ✓ Promoting establishment of cold-chain of frozen food

Project No.7	Institutional Reform for Bonded Cargo System
Processed Food Category	All kind of Processed Food
Scheme	Technical Assistance
Contents of the Project	Legal system on bonded warehouse is under development in Vietnam, thus, Japanese companies have to ask the system each time. Therefore, it is necessary to revise the system and develop it to the level of that of Japan. This shall be discussed in Vietnam – Japan Joint Initiative, and after agreement, institutional reform on bonded warehouse will be supported by Japanese expert. For example, in the present system, companies have to report all moving record, thus, it shall be revised that only report of final moving should be required and for record of other moving should be voluntary.
Project Site	Hanoi (Customs)
Scenario of accelerating Japan's investment	Through the use bonded warehouse, enhance convenience of import and export cargo for Japanese companies and establish system which enables import and export at the required time and required amount. At the same time, introduce NACCS (Nippon Automated Cargo and Port Consolidated System) for free (this matter should be

	discussed in Vietnam – Japan Joint Initiative) to simplify the export and import procedures for Japanese companies.
Input	JICA Expert : 12M/M
Implementation System	Vietnamese Side : Directorate General of Customs under MOF
Impact	Vietnamese Side : ✓ Increase in export opportunity for SME exporter and job creation and income growth ✓ Regional development through increase of distribution and contribution to formation of national network ✓ Improvement in financial status of local producer Japanese Side : ✓ Simplification of procedure on export freight ✓ Increase in convenience on distribution system for SMEs

Project No.8	Project for Strengthening Implementation System for Rural Development and Calling for Investment in Food Industry in the Northern Region
Processed Food Category	All kind of Processed Food
Scheme	Yen Loan
Contents of the Project	✓ Support commune-led planning on development of local brand on agricultural and rural sector ✓ Improving small-scale infrastructure necessary for development of local brand based on farmers' needs ✓ Building linkage model project between local enterprises and farmers (support indirectly quality management and contracted production) ✓ Formulation of plan on improvement of business environment for calling Japanese investment in agriculture and rural sector, conduct pilot project
Project Site	northern province near Hanoi
Scenario of accelerating Japan's investment	Promote development of local brand on vegetable, fruit and livestock and increase opportunity for Japanese companies to procure them as raw materials of processed food.
Input	Yen Loan + Consulting Service
Implementation System	Vietnamese Side : MARD Department of Planning and Investment, DARD,District Peoples' Committee, Commune Peoples' Committee
Impact	Vietnamese Side : ✓ Enhancement of formulation and implementation of participatory development plan ✓ Building basic infrastructure before and after development project ✓ Promoting economic development in northern provinces near Hanoi Japanese Side : ✓ Building base for calling investment from Japanese food processing companies to be located in Vietnam

Data Collection Survey on Selecting the Processed Food to be Focused and Promoting Foreign Direct Investment in Food Business in Vietnam

Draft Final Report

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Units and Currency

kg	kilogram
t, MT	Metric tones = 1,000 kg
h	hour
mm	millimeter
cm	meter
km	kilometer
ha	hectare
ft	feet
km^2, sq.km	square kilometer
m^2	square meter
ºC	degrees centigrade
%	percent
US$	United States of America Dollar
VND	Vietnamese Dong
EUR	EURO

Exchange rates (as of November 2011)

	VND	US$	EURO	JP¥
VND		0.000047	0.000034	0.0036
US$	21,067		0.707	75.84
EURO	29,797	1.414		107.27
JP¥	277.78	0.0132	0.0093	

List of Abbreviations and Local Words

Abbreviation	English
ADB	Asian Development Bank
AFTA	Asean Free Trade Area
ASEAN	Association of Southeast Asia Nations
CPI	Consumer Price Index
DAH	Department of Animal Husbandry
DARD	Department of Agriculture Rural and Development
EPA	Economic Partnership Agreement
EU	European Union
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
GAP	Good Agricultural Practice
GDP	Gross Domestic Products
GSO	General Statistic Office
HACCP	Hazard Analysis and Critical Control Point
HS Code	Harmonized Commodity Description and Coding System
IPM	Integrated Pest Management
IQF	Individual Quick Frozen
ISO	International Standard Organization
JAS	Japanese Agricultural Standard
JICA	Japan International Cooperation Agency
MARD	Ministry of Agriculture and Rural Development
MOH	Ministry of Health
MOI	Ministry of Industry
MOIT	Ministry of Industry and Technology
MOST	Ministry of Science and Technology
MPI	Ministry of Planning and Investment
NAFIQUAD	National Agro Forestry Fisheries Quality Assurance Department
NRDP	New Rural Development Plan
ODA	Official Development Assistance
PPP	Public Private Partnership
QUATEST	Quality Assurance and Testing Center
SME	Small and Medium Enterprise
STAMEQ	Directorate for Standards and Quality
TCVN	Tech Coast Venture Network
UNESCO	United Nations Educational, Scientific and Cultural Organization
VASEP	Vietnam Association of Seafood Exporters and Producers
VAAS	Vietnam Academy of Agricultural Sciences
VAT	Value Added Tax
VND	Vietnamese Dong
WHO	World Health Organization
WTO	World Trade Organization
WWF	World Wide Fund for Nature

Chapter 1 Introduction

1.1 Background of the Survey

Recently, more and more Japanese people have high awareness on food safety, particularly on safety of imported food. Also, Japan highly depend on foreign countries for food, thus, it is important to diversify the countries which export food to Japan for ensuring food security. For this reason, JICA conducted data collection survey for enhancing economic development through the food processing industrial promotion in the Mekong region (Vietnam, Cambodia and Laos) prosperous in agriculture, which is relatively close to Japan, and attracting many Japanese companies as an investment destination. This Survey also aims at promoting Japanese food – related businesses and contribution to Japan's food security.

Among Mekong region, Vietnam has a biggest potential for food processing industry; viz. Vietnam's 60% of employment and 30% of GDP are attributed to agriculture. Also, for economic growth and poverty reduction in rural areas, it is important issues how to increase productivity of agricultural sector, how to improve farm income. However, the average arable area in Vietnam is small, which makes difficult to improve farm income centering on rice production. In Vietnam, consumption of vegetables, fruit, meat, fishery products is increasing in the context of economic growth in urban areas, and for government of Vietnam, it has became important measures for farm income growth to shift to the production of high-value added agricultural products. Under these circumstances, Japanese businesses' investment in agriculture, food processing, distribution will bring about agricultural production increase, farm income growth, increase of employment opportunities in the food processing industry in Vietnam. Also, for Japan, Japanese companies' penetration, ensuring food safety and security is highly appreciated.

This Survey is intended to consider the direction of ODA for supporting expansion of Japanese businesses in food processing business in Vietnam through information gathering and consultation with public/ private stakeholders.

1.2 Objectives of the Survey

The objective of the Survey is to collect/analyze of basic information on agriculture, food processing, logistics and food safety for the strategic processed foods in Vietnam. Also, through the discussion with related several economic entities (government and private sectors), the Project aims to formulate supportive measures which enhance investment from Japan.

Chapter 2 Socioeconomy in Vietnam

2.1 Overview of Socioeconomy

2.1.1 Population and Geography

Socialist Republic of Vietnam is located in Southeast Asia, 16 degrees north latitude and 106 degrees east longitude and is bordering China, Laos and Cambodia. Vietnam has a population of 8,693 million people (2010), the number of households is 2,711 million units (2008). The land area of this country is 330,000 km^2, equivalent to about 87% of Japan. The distance of north and south end in Vietnam is about 1,650 km away. There are river deltas in the north and south. There are highland hills in central area and mountains exist in the northwest area. North Vietnam belongs to the temperate monsoon climate, and South Vietnam belongs to the tropical climate. The rainy season is from mid-May to mid-September. The dry season is from mid-October to mid-March. There are 58 provinces and five centrally-controlled municipalities; Hanoi, Ho Chi Minh City, Da Nang, Hai Phong and Can Tho.

Table 2.1 Region and Province and Central – Ruled Municipality

Red River Delta	South Central Coast
Hanoi	Da Nang
Ha Tay	Quang Nam
Vinh Phuc	Quang Ngai
Bac Ninh	Binh Dinh
Quang Ninh	Phu Yen
Hai Duong	Khanh Hoa
Hai Phong	Ninh Thuan
Hung Yen	Binh Thuan
Thai Binh	Central Highland
Ha Nam	Kon Tum
Nam Dinh	Gia Lai
Ninh Binh	Dak Lak
North East	Dak Nong
Ha Giang	Lam Dong
Cao Bang	South East
Bac Kan	Binh Phuoc
Tuyen Quang	Tay Ninh
Lao Cai	Binh Duong
Yen Bai	Dong Nai
Thai Nguyen	Ba Rịa - Vung Tau
Lạng Son	Ho Chi Minh
Bac Giang	Mekong Delta
Phu Tho	Long An
North West	Tien Giang
Đien Bien	Ben Tre
Lai Chau	Tra Vinh
Son La	Vinh Long
Hoa Binh	Đong Thap
North Central Coast	An Giang
Thanh Hoa	Kien Giang
Nghe An	Can Thơ
Ha Tinh	Hau Giang
Quang Binh	Soc Trang
Quang Tri	Bac Lieu
Thua Thien-Hue	Ca Mau

According to the World Literacy survey by UNESCO in April 2008, the literacy rate of Vietnam is 90.3% (Average), 93.9% (Male) and 86.9% (Female). The rate is higher than neighbor countries.

Age compositions are 23.6% (0 to 14 years old), 70.4% (15 to 64 years old), 6.0% (more than 65 years old). The average age of the entire population is 28.2 years old in 2010.

Human population growth rate is 10.7 people (average / year per 1,000 populations in 2005-2010). It shows high rate (in Japan, the rate is 0.23 people), and the population is expected to increase in the future. The Life expectancy of Vietnamese is 67.86 years old (male), 73.02 years old (female) and 70.35 years old (average).

2.1.2 GDP

Vietnam's macro-economy slowed by the global financial crisis in 2009, but it had recovered in 2010.

In 2008 GDP per capita exceeded US $ 1,000. The Vietnam government is trying to raise the per capita income up to US $ 3,000 in 2020 (According to JETRO).

Table 2.2 GDP Growth Rate

	2007	2008	2009	2010
GDP per capita (US$)	835	1,048	1,068	1,168
Real GDP Growth Rate	8.5%	6.2%	5.3%	6.8%
Agriculture, Forestry and Fisheries Industry	3.8%	4.1%	1.8%	2.8%
Manufacturing Industry	12.4%	9.9%	2.8%	8.4%
Construction Industry	12.2%	－0.4%	11.4%	11.1%
Service Industry	8.9%	7.2%	6.6%	7.5%

Source) JETRO (2011)

2.1.3 Trading

Vietnam joined ASEAN / AFTA in 1995 and APEC in 1998. Vietnam applied for membership of the WTO in January 1995, and joined in January 2007. With the accession of WTO, Vietnam government is asked to lower the high tariff rates of fresh vegetables, fruit and coffee, etc. The import and export trends by region and major trading countries of Vietnam are shown in the table 2.3.

Table 2.3 Major Trading Countries and the Major Export / Import Items

(US$ million)

Export		2009	2010	Growth Rate	%	Import		2009	2010	Growth Rate	%
Total		57,096	72,192	26.4	100.0	Total		69,949	84,801	21.2	100.0
Businesses	Local	26,730	33,105	23.9	45.9	Businesses	Local	43,882	47,833	9.0	56.4
	FDI	29,854	39,086	30.9	54.1		FDI	26,067	36,968	41.8	43.6
Items	Crude	6,195	4,958	▲ 20.0	6.9	Items	Machinery and Components	12,673	13,691	8.0	16.1
	Textile	9,066	11,210	23.7	15.5		Textile Materials	1,932	2,621	35.7	3.1
	Fishery Products	4,251	5,016	18.0	6.9		Electronic Products	3,954	5,209	31.7	6.1
	Footware	4,067	5,122	26.0	7.1		Fertilizer	1,415	1,218	▲ 13.9	1.4
	Electronic Products	2,732	3,590	31.4	5.0		Plastic Products	2,813	3,776	34.2	4.5
	Rice	2,664	3,248	21.9	4.5		Woven Fabrics	4,226	5,362	26.9	6.3
	Coffee	1,731	1,851	7.0	2.6		Chemicals	3,205	4,173	30.2	4.9
	Craft Products	3,177	3,344	5.3	4.6		Vehicles	2,943	2,911	▲ 1.1	3.4
	Rubber	1,227	2,388	94.7	3.3		Steel Mill Product	5,361	6,155	14.8	7.3
	Cashew Nuts	847	1,135	34.0	1.6		Petroleum Products	6,255	6,078	▲ 2.8	7.2
	Coal	1,317	1,611	22.3	2.2		Motorcycle (CKD)	742	898	21.0	1.1
Countries / Region	ASEAN	8,592	9,168	6.7	12.7	Countries / Region	ASEAN	13,813	10,805	▲ 21.8	12.7
	Japan	6,292	7,728	22.8	10.7		Japan	7,468	9,016	20.7	10.6
	China	4,909	7,309	48.9	10.1		China	16,441	20,019	21.8	23.6
	South Korea	2,064	3,092	49.8	4.3		South Korea	6,976	9,761	39.9	11.5
	Taiwan	1,121	1,443	28.8	2.0		Taiwan	6,253	6,977	11.6	8.2
	Hong Kong	1,034	1,464	41.6	2.0		Hong Kong	826	860	4.2	1.0
	India	420	992	136.3	1.4		India	1,635	1,762	7.8	2.1
	EU	9,378	11,385	21.4	15.8		EU	6,418	6,362	▲ 0.9	7.5
	United States	11,356	14,238	25.4	19.7		United States	3,009	3,767	25.2	4.4
	Others	11,931	15,373	28.9	21.3		Others	7,110	15,472	117.6	18.2

Source) CEIC

In 2010, Vietnamese exports to Japan are about US $ 77 hundred million. Vietnam's major exports are sewing products, fishery products, wood products and so on. Imports from Japan are about US $ 90 hundred million, and the main items are machinery parts, iron scraps, computer and electronic parts, etc.

Table 2.4 Import and Export for Japan

Export for Japan

(US$ '000)

Item	2008	2009	2010
Total (including others)	**8,537,938**	**6,291,810**	**7,676,738**
Crude	2,177,391	480,117	204,352
Coal	305,134	145,559	223,812
Footware	137,576	122,474	170,113
Needlework	820,056	954,076	1,146,208
Computers and Electronic Products and Components	375,696	380,971	409,183
Plastic Products	193,890	193,284	254,939
Coffee	127,432	90,312	84,874
Rubber	34,545	15,900	34,362
Wood, Woodwork	378,839	355,366	453,003
Fishery Products	830,154	760,725	891,938

Import from Japan

(US$ '000)

Item	2008	2009	2010
Total (including others)	**8,240,662**	**7,468,092**	**8,969,101**
Vehicles (Passenger Cars)	144,430	176,049	162,846
Vehicles (Parts of Passenger Cars)	337,531	394,754	396,302
Iron, Scrap Iron	1,041,692	1,094,399	1,590,433
Crure	332,327	n.a.	42,399
Fertilizer	55,092	25,746	32,667
Insecticide	19,413	22,376	23,104
Woven Fabrics	355,057	333,711	335,602
Motorcycle Parts	62,571	71,979	90,604
Chemicals	140,980	124,719	175,245
Chemical Products	154,131	155,511	231,919
Pharmaceutical Products	8,775	11,382	16,273
Computers and Electronic Components	928,787	839,376	1,024,504
Leather / Textile Materials	115,432	118,233	131,731
Parts of Machinery and Equipment	2,445,290	2,289,461	2,547,097

Source) JETRO (2011)

2.1.4 Financial Indicators

According to the announcement of Statistics Directorate of Vietnam (GSO) in the end of the fiscal year 2010, Consumer Price Index (CPI) of the full-year in 2010 rose to the average of about 9% by the previous year. The inflation target of 8% by the Vietnam government was not achieved.

Table 2.5 Consumer Price Index (CPI)

%

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Previous year = 100	98.4		103.9	103.1	107.8	108.3	107.5	108.3	123.0	106.9
Year 2000 = 100	100.0		104.3	107.6	115.9	125.5	134.9	146.3	179.6	192.0
Year 2005 = 100						100.0	105.7	114.5	140.8	150.5

Source) General Statistic Office in Vietnam

According to the State Bank of Vietnam (central bank), basic interest rate is 8% in fiscal 2010, which still keeps a higher rate.

Table 2.6 Basic Interest Rate (Annual Average)

											%
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Basic Interest Rate	9.0	8.0	7.4	7.5	7.5	7.8	8.3	8.3	10.6	7.0	8.0

Source) General Statistic Office in Vietnam

Wage growth rate in fiscal 2011 is expected about 12%[1].

Under such circumstances with high interest rates and high inflation, credit risk[2] is high, thus, investment in Vietnam has stagnated. At the stage Vietnam's economy is stable and high interest rates and high inflation is solved, investment in Vietnam is expected to expand.

2.2 Current Agricultural Policy

The economic system of Vietnam was controlled by the Government, which is similar to the Soviet type Economics for long years. However, by adopting the Doi Moi policy in 1986, the country changed to liberalize the economy. In agriculture, collective farming production systems were taken apart by the Communist Party Decision No. 10 in 1988. It is said to increase the farmers' incentives towards agricultural production.

After shifting to the Doi Moi policy, land use law was enacted in 1993. It guaranteed the 50-year land use rights for farmers. This law admits selling, succession, rental more collateral for bank loans lent of land use rights. A series of agricultural policy had contributed greatly to the increase of agricultural production. The Government confirmed to success and promotes further economic reform by Doi Moi policy at the 9th Communist Party Congress in April 2001. In the 10th Communist Party Congress in April 2006, they summarized the achievements of Doi Moi policy introduced over 20 years, and adopted a decision that further promote the market economy.

In Vietnam, the government agency which supports the agricultural producers is the Ministry of Agriculture and Rural Development (MARD). At the provincial level, the Department of Agriculture and Rural Development (DARD) is set under the provincial People's Committee. DARD is responsible for a wide range of agricultural products from production to consumption in Vietnam. The food products which were covered in this study (rice, fruit and vegetables, seafood and livestock) are managed by the department under the MARD and DARD. The agricultural policies include the improvement of living conditions of people in rural-agricultural, forestry and fisheries.

1 Rate of increase is equivalent to the rising rate of CPI (9 % approximately) plus 3 %. (Survey of salary and rising rate, ICONIC Co.Ltd [2010])

2 It is the risk that a credit obligation may not be recovered because financial status of creditor gets to deteriorate in the credit extending of the business or finance. In particular, this means that refund of principal or interest payment for business transaction, financing (loan), credit investment, stock investment and bank deposit and saving is delayed or is made a stop because of bankruptcy or debt default of client (issuer) and so on.
In the business situation, this risk always exists under a credit accommodation such as loan obligations of investment and lending, credit obligation of claim for compensation (cautionary obligation) or deal for honor of client with account receivable or acceptance receivable, unlike cash deal in which credibility of business contacts is not matter. Also this risk exists concerning fund management (asset maintenance) of banking institution, company and personal.

Vietnam's national development targets are generally indicated in the country's five-year plan and ten-year plan of the respective sector. The current agricultural policy is based on the Five-Year Plan for Agriculture and Rural Development, for the period 2006 to 2010. (Released by the Government of Vietnam in July 2005) In this policy, the Government is going to develop the agricultural processing industries to take advantage for increasing added values of agricultural products. This direction has been oriented to be as important policy for development of rural areas and will be inherited in the next five-year plan which will be developed after the publishing of ten-year plan. The following five items are currently being considered as the most important issues in the New Agricultural and Rural Development Policy Ten-year Plan (2010-2020).

1. The introduction of new technologies for agricultural products
2. An effective coupling of production, processing and sales
3. The promotion of investment in rural infrastructure and enhancement of agricultural insurance
4. Development of foreign market information and marketing capabilities
5. Administrative efficiency for commercial sales of agricultural products

In Vietnam, measures which directly benefit farmers are very few. Income compensation, production supports and policies to ensure farmers have not been conducted. Vietnam's agricultural production has rapidly increased since the late 1980s due to the introduction of the market economy. Agricultural policies in Vietnam promoted the liberalization, aiming at increasing farmers' willingness to produce. The Government enforced the improvement of agricultural productivity which increased the incomes of farmers, and they also intended to acquire foreign currency by increasing the export of crops such as rice production. Thus, there is a root of Vietnamese policy on prioritizing the growth in sales of agricultural products such as rice in the international market, rather than directly protecting farmers.

Poverty and food shortages have been overcome with de-collectivization of agriculture and the economic liberalization by Doi Moi policies. Agricultural policies in Vietnam excluded the small and medium sized companies and strengthen the monopoly of state-owned enterprises. This monopoly had been pointed out its inefficiencies from international organizations. The Vietnamese government in recent years is holding the state-owned enterprises with making progress of privatization, which is gradually eliminating the monopoly situation.

2.3 Consumption and Distribution

2.3.1 Amount of Consumption and Expenditure for Food

(1) Amount of Food Consumption

According to FAOSTAT, sophistication of food has advanced from 1990 to present (2007). In particular, milk and meat consumption continues to rise.

Table 2.7 Main Food Consumption (kg/capita/year)

	1990	1995	2000	2005	2007
Milled rice	150.3	159.5	174.3	167.1	165.6
Starchy Roots	32.2	25.4	11.4	14.8	15.8
Vegetables	45.8	53.5	74.0	84.6	83.3
Fruits	42.9	48.0	49.3	60.7	58.2
Meats	16.0	18.9	21.9	35.3	40.7
Fish, seafood	13.2	16.7	18.5	26.7	26.1
Egg	1.2	1.7	2.1	2.1	2.4
Milk	1.4	4.0	9.1	11.3	11.9

Source) FAOSTAT

(2) Expenditure for Food

In 2008, expenditure for food is US$ 10 billion per month, and US$ 119 per capita. Expenditure for food accounts for 13.5% of GDP. According to the General Statistics Office of Vietnam (GSO), food expenditure share of GDP will decrease to 7.3% in 2013.

2.3.2 Consumption Activities

According to the statistics on household consumption in Vietnam (2008), monthly household consumption expenditure per household is about 2.8 million VND, and food expenditure accounts for 53 % of total. Also, the proportion of food expenditure in 2008, grains such as rice accounts for 12.8%, processed foods 27.3%, and beverages and tobacco 2.7%, and eating out 7.2%.

A variety of reports listed the following points as the features of the consumption in Vietnam in recent years.

- Activities of domestic consumption in Vietnam are very lively.
- The contents of personal consumption are shifting significantly. Young people living in large urban area (known "8X"[3] generation) have very strong desire to consume, and they have become the core of the "urban middle class". They are attractive targets for foreign companies.
- Production ages and consumption ages are low (approximately 65% of the total population aged 15 to 64 years old). In addition, the generation born after the Vietnam War has a strong aspiration for Western consumption cultures. Their consumption behaviors are not rooted in traditional and conservative Confucian ethics. They tend to stick the fine-looking or new models.

Looking at monthly food expenditure of Vietnam per capita in 2008 by region, southeast area (including the Ho Chi Minh city area) is 550,000 VND , which is at the highest level of the country.

Meanwhile, it is 270,000 VND in the north and central coast area, 280,000 VND in the northwest area. The gaps have reached about twice with southeast area. With the exception of the southeast area, the Red River Delta area (including Hanoi and Hai Phong) and Mekong Delta region (including Can Tho) is a little over 350,000 VND, which is slightly higher level in this country.

The consumption scale of urban area (about 25% of domestic population lives) reached 1.7 times compared to the rural area. In rural areas, the proportion of self-sufficiency and grants shares little under 30% of food-related expense. Comparing with the urban and rural areas, it is remarkable the high frequency of dining out. In urban areas, sugar confectionery and fruits are consumed higher than that of rural area. In rural areas, rice, oils and fats are consumed higher than that of urban area.

Vietnamese consumers generally tend to buy processed food and beverages at the public markets and personal stores. Therefore, it has not been common to purchase at supermarkets and convenience stores. According to the USDA report "Vietnam Retail Food Sector Report 2007", “Traditional Trade” shares 88% of purchasing. Meanwhile, supermarkets and convenience stores such as "Modern Trade" share remains only 12%. Although, "Modern Trade" has shown 30% growth per year in recent years[4].

[3] People born in 1980s
[4] It is considered that convenience stores will not be popular in Vietnam with their unconformity for the Vietnamese Lifestyle. Although, a Japanese convenience store retail company obtained a business license of Vietnam in 2011. Moreover, another Japanese convenience store retailer is considering for advance in Vietnam.

Chapter 3 Social and Economic Circumstances Surrounding "Processed Food"

3.1 Definition of "Processed Food"

3.1.1 Definition of "Processed Food"

(1) Definition of "Processing" and "Manufacturing" in Japan

"Processed Food" is defined in Food Sanitation Act of Japan and JAS in Japan as follows:

Table 3.1 Definition of "Processed Food" in Japan

	Food Sanitation Act of Japan	JAS
Processing	Changing only its form without changing the nature of materials.	Retaining its nature as a material and adding new attributes.
Manufacturing	Changing nature of materials and producing food with different nature.	produce something new and different in nature from that of materials.
"processed food" applicable only in Food Sanitation Act or in JAS	Meat, raw oysters, frozen fish fillets, food to be eaten raw	Salt dried, salted fish, dried vegetables/ fruit /seafood such as seaweed
"processed food" applicable both in Food Sanitation Act and JAS	Beverage manufactured and processed (with packaging), canned food, sweets, and many more	

Source）JICA Survey Team

3.1.2 Definition of "Processed Food" in this Survey

There is no rigid definition of processed food in Vietnam and the concept per se is quite different from Japan's. In Vietnam, Food Safety Act (Decree No.55/2010/QH12) was established in June 2010 (detail described in "3.5 Legislative Arrangement on Processed Food"), most of the people engaged in food manufacturing don't know about contents of the Act.

In Vietnam, processed food are generally clasified ambiguously as high degree/low degree of processing[5].

For example, milled rice[6], ground meat, dryed soyabean, fish fillet to be categorized as fresh food in Japan are regarded as processed food in Vietnam. This Survey adopted Vietnamese way of classification since the commodities to be discussed are all produced, processed, and distributed in Vietnam.

5 Food Safety Act (Decision No.55/2010/QH12) Chapter 1, Article 2, paragraph 21 provided "fresh food is food except processed food including raw meat, eggs, fish, fishery commodities, seafood, vegetables, root vegetables, fruits and other foods, processed food is all food except fresh food "

6 In Vietnam, in order to improve the quality of rice, gradually distribution by brown rice has become common recently lead by the big milling companies.

Table 3.2 Definition of Processed Food in Vietnam and in Japan

	Rice and grain	Farm products	Livestock products	Fishery products
Cutting	○	○ (Minced onion)	○ (Minced meat of an animal)	○ (Sashimi)
Freezing	−	○※	○	○
Homogeneous mixture	○ (Blended rice)	○ (Red- and yellow-pepper mix)	○ (Pack of Spencer roll and bone-less short rib)	○ (Assorted sashimi of same species of fish)
Disparate mixture	○ (Rice mixed with barley)	× Cut vegetable mix	× (Ground beef and pork)	× Assorted sashimi of different species of fish
Drying	○ Polished rice	○ (Soya bean) × (Dried mushroom)	×	×
Milling	× (Powdered rice)	× Flour	−	−
Heating	×	×	×	×

※ Blanching treatment. Blanching is applied to prevent color change of vegetable.

○ Classified as "**fresh food**" by Food Sanitation Act of Japan (they are not processed food)

× Classified as "**processed food**" by Food Sanitation Act of Japan

[yellow] Semi-processed food in Vietnam

[pink] Deep-processed food in Vietnam

Source) JICA Survey Team

3.2 Current Status of Processed Food Industry

3.2.1 Macro-Level Analysis

(1) From the Viewpoint of National Economy

Number of registered companies in Vietnam has almost doubled in the past five (5) years, and reached about 250,000 in 2009. Out of them, approximately 7,000 companies engage in food processing now, and constitute about 3% of the total registered companies.

Table 3.3 Number of Registered Companies

	2005	2006	2007	2008	2009
All	112,950	131,318	155,771	205,732	248,842
Agriculture	2,320	2,399	2,443	8,517	8,749
Manufacturing	21,876	26,082	30,235	37,647	44,015
-Food Processing	4,228	4,851	5,333	6,338	6,826
(% of the total)	3.7%	3.7%	3.4%	3.1%	2.7%

Source) Statistical Yearbook 2010

While 60% of companies engaging in food processing are capitalized at less than 0.5 billion VND, some food processing companies are capitalized more than 5.0 billion VND in contrast. It can be pointed out that in food processing industry, number of small companies and big ones is large, but number of mid-size companies is small. Big companies correspondent to listed companies on the Hanoi / Ho Chi Minh Stock Exchange (around 30 companies), fishery processing companies and state-owned companies are heading the list. Number of small business capitalized less than 0.5 billion VND is significantly large compared with other industries.

Box 1：

Food processing industry in Ho Chi Minh city accounted for 23.4% of production value of all industries. In Ho Chi Minh city, there are approximately 4,000 food processing companies, including family-owned small businesses, and competition among companies has been increasing. According to Food and Foodstuff Association Ho Chi Minh (FFA), 44% of these companies export, and 65% of their production is for export. Major market is Asian countries (48%), Europe (30%), North America (19%).

Table 3.4 Number of Companies by Capital Size

Capital Size	All Industry	(%)	Agriculture, Fishery	(%)	Manufacturing	(%)	Food Processing	(%)
Less 0.5 Billion VND	18,682	10%	2,786	34%	2,815	9%	6,826	62%
0.5～1.0 Billion VND	25,428	13%	1,656	20%	4,316	13%	638	6%
1.0～5.0 Billion VND	107,605	55%	3,228	40%	18,944	59%	879	8%
5.0～10.0 Billion VND	43,754	22%	411	5%	5,924	19%	2,619	24%

Note) Sum of each figures does not correspond with No. of companies in 2009 because the capital size of several companies are unknown.
Source) Statistical Yearbook 2010

Food processing companies constitute about 3% of the total registered companies and number of employees in food processing companies account for about 6% of total as shown below. This means food processing is labor-intensive industry and has high employment capacity. Number of employees per company is approximately 80, and has been decreasing year after year due to increase of productivity by mechanization and diversification of food processing field.

Table 3.5 Number of Employee

	2005	2006	2007	2008	2009
All	6,273,396	6,716,166	7,382,160	8,246,239	8,921,535
Agriculture	253,676	256,362	252,938	377,870	376,169
Manufacturing	3,028,710	3,386,461	3,767,613	3,969,334	4,131,096
-Food Processing	406,117	433,402	457,155	498,132	526,056
(% of the total)	6.5%	6.5%	6.2%	6.0%	5.9%
Number of Employees per Company	96	89	86	79	77

Source) Statistical Yearbook 2010

US $ 14.5 billion was invested in food processing business in 2009. It accounts for over 3% of all industries, and the amount has been significantly increasing, more than doubled compared with that in 2005. Though it accounted for 3.3% of total capital invested in manufacturing in 2009, this percentage tends to decline gradually.

Table 3.6 Annual Average Invested Capital Amount

Unit : US$ 1.0 million

	2005	2006	2007	2008	2009
All	168,467	211,476	257,511	373,245	438,595
Agriculture	2,964	3,379	3,445	4,422	4,602
Manufacturing	39,706	47,870	56,130	74,059	89,339
-Food Processing	6,541	7,687	9,494	10,350	14,480
(% of the total)	3.9%	3.6%	3.7%	2.8%	3.3%

Source) Statistical Yearbook 2010

Annual sales of food processing are US $ 23.4 billion in 2009, which accounted for 7.2% of total industry sales. As well as capital investment, it was more than doubled compared to sales in 2005.

Table 3.7 Annual Sales

					Unit : US$ 1.0 million
	2005	2006	2007	2008	2009
All	136,068	167,871	215,181	327,678	326,446
Agriculture	1,285	1,635	1,869	2,356	2,403
Manufacturing	44,878	55,496	72,024	93,784	107,057
-Food Processing	10,549	12,283	16,324	22,378	23,416
(% of the total)	7.8%	7.3%	7.6%	6.8%	7.2%
Source) Statistical Yearbook 2010					

Share of FDI to total investment in food industry in Vietnam is still low compared to other industries. This indicates that foreign investors don't put enough priority on investment in food processing industry in Vietnam compared to other industries.

Table 3.8 Share of FDI to Total Investment in Food Processing

					Unit : US$ 1.0 million
	2005	2007	2008	2009	2010
All	26,226	35,292	39,336	39,567	42,345
Contribution of FDI (%)	37.3%	39.3%	40.3%	40.7%	41.3%
Manufacturing	22,177	30,949	34,913	35,005	37,815
Contribution of FDI (%)	36.1%	39.8%	41.4%	41.8%	42.8%
-Food Processing	5,436	7,537	8,562	8,509	9,344
Contribution of FDI (%)	26.2%	28.7%	29.0%	31.3%	32.8%
Source) Statistical Yearbook 2010					

3.3 Challenges on Processed Food Industry

3.3.1 Safety of Raw Materials/Processed Food

Vietnamese government is preparing the National Strategy on Food Safety 2010-2016 which takes over the current the National Action Plan for Health and Safety of Food 2010. Previously, the Ministry of Health (MOH) had authority for ensuring the safety of processed foods, but now, Ministry of Agriculture and Rural Development (MARD), Ministry of Industry and Trade (MOIT) and MOH share authority on safety standards by food category.

Ministry of Science and Technology (MOST) is responsible for harmonizing food safety standards proposed by MOH, MARD and MOIT. MOH is to be facilitator among Ministries with centering National Food Safety Committee. However, WHO is suggesting the comment that there is no lead agency which takes overall responsibility.

Safety of raw materials and processed food is the biggest issue of Vietnamese food processing industry. For example, the following facts show problematic situation at present.

(1) Number of Patients Affected Cholera and Food Poisoning

Average Vietnamese gets 1.5 times/year of food poisoning, it is 750-800 times occurrence compared to advanced countries, WHO reported in 2007.

- ✓ According to Vietnamese government statistics, number of food poisoning was 1,360 cases from 2000 to 2007 (and number of patient was more than 34,400, number of dead was 376).
- ✓ Since 2006, Vietnam has not provided much information on food poisoning. However, number

of news reports of food poisoning incidents is still large[7].

- ✓ In 2009, WHO announced that 8 million people (equivalent to one tenth of the population) would be infected with food poisoning annually in Vietnam.

According to MOH, the causes of food poisoning are estimated; microorganisms (42 %), chemicals (25%), natural toxin (25%). Food poisoning by chemicals is mostly due to excessive use of pesticides and antibiotics, illegal use of food additives at food processing stage.

(2) Number of Suspension of Vietnamese Export to Japan

Japan's Ministry of Health, Labour and Welfare has suspended 3,370 commodities to be imported to Japan during the period of 2009-2011, out of which 247 items or 7% were from Vietnam. The percentage of suspension originated from Vietnam Export tends to increase for last three (3) years.

Table 3.9 Number of Suspension on Food Import to Japan

	2009	2010	2011(Apr.-July)
Number of Suspensions on Food Import	1582	1374	414
Out of which; - Vietnam Origin	82(5.2%)	126(9.2%)	39(9.4%)
- Major Suspension	Fishery Products (56), Coffee(12), Food(7)	Fishery Products (99), Coffee(11), Vegetable/Food(8)	Fishery Products (38)
- Cause	Illegal chemicals (antimicrobial:30) Bacteria(27) Mold(11)	Illegal chemicals (agro-chemicals:50) Illegal chemicals (antimicrobial:33) Bacteria (21)	Illegal chemicals (antimicrobial:17) Illegal chemicals (agro-chemicals:11) Bacteria (10)

(3) 75% of Total Population or 60 million are Affected by Parasite

Vietnamese National Institute of Malaria, Parasitology and Insectology announced high percentage of parasite affection, especially pupils are highly affected; 70-92% in the South, and 100% in the North, respectively. Phạm Ngọc Thạch Medical University found parasite eggs out of 97% of vegetable sold in Ho Chi Minh City. These are presumably largely due to the poor hygiene control from the production to distribution and marketing.

3.3.2 Distribution System

As for the distribution issue, more than 30 Japanese tenant firms and potential investors were interviewed and several urgent problems were subtracted; those are related to; i) difficulty in forwarding good materials from production site, and ii) high distribution cost. This section denotes the problem raised by interview survey during the Survey period.

(1) Logistics Infrastructure

1) Management of Port and Airport Operation[8]

In addition to hardware problems, there still exist many operational problems in port and airport for processed food distribution. According to Japanese tenant firms, there are still several cases of robbing from consolidated cargo in the southern regions.

7 In 2008, MOH stated that the main cause of food poisoning came from China.
8 Cai Lai port has more reefer plug than the port in Japan.

Privatization of terminal operation is insufficient. There are no system unlike advanced countries that private forwarder can prepare consolidated cargo by themselves.

2) Difficulty in Road Access due to Weight Restricted Bridges

Forwarding frozen shrimp from Can Tho province and/or forwarding vegetable from Dalat to Nha Trang port fall into this issue. The former is dealt with by reducing weight of carriage, and the latter is treated by making detour to Ho Chi Minh.

(2) Lack of Cold-Chain Facilities[9]

Many interviewees replied that Vietnamese frozen food seems to repeat defrost and freeze, so that they have many experiences to feel deterioration in taste.

Lack of cold chain system especially in North to Central regions in Vietnam hampers from forwarding raw materials/products to the northern regions.

3.3.3 North-Central-South Problem

Imbalanced economic distribution is the basic problem of this agenda. Actually, 70% of FDI and 80% of factories related to food processing are located in southern regions of Vietnam. Accordingly, there are no remarkable investments in the central and the northern regions due to the scale of market in the former and the unfavorable procurement situation of raw materials in the latter. Other inferiorities relating to the northern region pointed out by International Cooperation Department of MARD and Industrial Economy Department of MPI were as follows;

1) Especially in north, farm is small and scattered, so that it is difficult to supply raw materials with constant volume and quality. Varied geology and climate conditions also make it difficult to produce homogeneous raw materials. And unstable amount of raw materials for processed food also makes it difficult to attract large-scale processors.

2) The quality of the fruits and horticultural crops are especially lower than others because agricultural species are not fixed and inferior as the variety for processing. For example the tea grown in the northern area can be commercialized if processed with high technology[10]. Big Japanese beverage manufactures are trying to release of tea products for local market, cooperating with the local capital.

3) The processed foods of the country are rice, coffee and pepper only and they all are primary processed foods like rice-polishing and fermentation. That means there are no places[11] in this field for foreign sophisticated corporations because they don't need high technology. As a result of that, the processing level is not developed and even the American companies proven in this field invests only in the field of primary processing.

4) All the processed fishery products of the country, which are made at some level in the central area, are also primary processed products like the fillet cut and frozen foods. Regarding the raw materials for fishery products, the problem on antibiotic residue and agrochemicals has often been pointed out and they are poor reliability as a raw material[12].

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[9] A number of refrigeration facilities has been built around Ho Chi Minh city where there are three (3) foreign-capitalized companies and one (1) local companies are competing in the cold chain store market

[10] The possibility of commercialization of tea beverage seems to be high relatively because it has no trace of its original form and the form of raw material would not be big problem.

[11] According to the interview for MPI the investment by companies is not increasing, not because of high land prices of Vietnam. Even considering the high land prices, the investment incentive offered by the Vietnamese government are relatively high and favorably compared with other countries.

[12] Exports of catfish to be focused by the Vietnamese government in recent years have been reported problems on antibiotic

5) The government policy[13] is not penetrated into the famers level sufficiently, thus, incentives to farmers are not sufficient. The farmers is not distributed market information sufficiently on what varieties of crops and processing method produce high benefit, thus varieties of crops are not homogeneous. It is very difficult that to unity 100 different varieties of rice alone at the farm level.

- Ex1. In Bac Giang province where cotton is produced, there are many cases that a cotton trader who concluded contractual farming with farmers was betrayed. Farmers are easy to neglect the contract and sell their products to other trader (very often this trader come from China) if he offer a higher price than that is stated in the contract.

- Ex2. In the Central highland area where the Government planned rubber plantation to be convert to coffee plantation, farmers do not follow. In line with a trend of decentralization, local government is offering investors for 50 years' land use for free plus other tax incentives, but processing companies do not invest for deeper processing stage.

Meanwhile, the Vietnamese government is conducting the New Rural Development Plan (NRDP) with the goal of the improvement of social and economic environment as a type of bottom-up of rural areas nationwide. In that plan, Commercial farmer's cultivation by linkages with farmers and businesses and increase of an agricultural production have been intended as indirectly mentioned (Department of Cooperatives and Rural Development under MARD).

3.3.4 Insufficient Standardization

Safety food standard is being prepared by food group in Vietnam but some standards are too old to catch up with frequently modified ban of chemicals and antibiotic by importing country.

The VASEP and FFA (Food and Food Stuff Association, Ho Chi Minh) pointed out that due to lack of international accepted safety food standards, Vietnamese foodstuff is confronting difficulty in penetrating international market.

3.3.5 Quality and Quantity of Labor

The average monthly income of manufacturing sector (including food processing industry) is less than that of Agriculture and Fishery sector as of 2010. Only two sectors, namely, Water and Wastewater Management and Construction shows lower monthly income than Manufacturing. The result shows that income level of manufacturing is comparatively low and it may be difficult to gather competitive employee to this sector. For example, the worker prefers to work for agriculture and fishery at their home town (province), because income level is higher than factory (manufacturing).

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residues to exports to Indonesia (July 2011). However, the evidence is not detected and it eventually problem is resolved. Thus the Vietnamese government has recognized that it needs to focus on awareness of the safety of domestic products.

[13] For example, Particularly in the north central part there is a tendency to question the government's policies shrimp, such as shrimp farmers expand the area of farmland, nevertheless, the Governments does not want the further expansion of shrimp farming in the central area, coffee famers does not follow the instruction of the Government on the switch of a rubber plantation to coffee plantation.

Table 3.10 Average Monthly Income by Industry

Average Monthly Income by Industry Unit：VND'000

Industry	2005	2007	2008	2009	2010
Agriculture and Fishery	1,130	1,711	2,081	2,688	3,340
Mining	3,504	4,668	5,103	5,675	5,739
Manufacturing	1,777	2,324	2,530	2,742	3,290
Electricity, Gas, Steam and Air Condition	2,620	3,868	3,838	4,343	5,395
Water, Waste Water Management	1,475	2,139	2,564	2,939	3,138
Construction	1,567	2,104	2,335	2,746	3,013
Wholesale and Retail	1,836	2,427	2,646	3,043	3,689
Road and Transportation	2,974	3,761	4,007	4,261	4,141
Food Services	1,853	2,952	3,092	3,325	3,677
ICT	3,700	4,518	4,820	4,974	5,289
Finance/Insurance	3,353	6,161	6,591	6,811	6,003
Real Estate	2,280	3,652	4,026	3,967	4,309
Professional	2,582	2,771	3,008	3,206	3,707
Industry Average	1,640	2,350	2,702	3,027	3,318

Quality and quantity of workers depend on global nature of the processing businesses, employee management policies of companies, employment conditions of other companies. This is a common belief in industry in general.

For example, Vietnamese companies which have an international trade and alliances have implemented training on processing technology and management of food hygiene such as and HACCP, ISO. In case of Vietnamese companies partnered with Japanese businesses, they are asked to send pictures of plant regularly to Japanese partners. Meanwhile, Taiwan and Chinese companies employ ethnic minority and leave the management to them, but these companies don't implement basic education and training for employees and their food processing businesses in Vietnam based on a simple task by unskilled workers. Thus, their products are mostly low degree of processed food. In addition, compared with Japanese companies, management of employees (such as monitoring and evaluation activities) doesn't seem to be strict.

In Vietnam, usually leader direct all tasks to workers, thus, worker-level technique has not been improved. In other words, the leader direct how to operate, but, don't teach the reason, therefore, workers are not accustomed to thinking the reason of each task. Some companies have implemented training on the theory for workers.

For the condition of other employment as shown above, wage competitiveness in manufacturing industry has been declining gradually and already fallen behind wholesale/ retailing, agriculture and service sectors. Under these circumstances, it has become more difficult to attract good employee.

3.3.6 Insufficient Fostering of SMEs

SMEs, who are major players of food processing in Vietnam, do not have competitiveness in capital and production / processing technology.

There are many kinds of processed food for export in Vietnam. Coffee, rice, pepper, and other primary processed foods are major export products. However, the prices of such low-degree processed foods are subject to international price.

3.4 Citizens' View about Processed Food

Questionnaire survey about processed food was conducted in supermarkets in Hanoi and Ho Chi Minh. Number of respondents was set at 50. The respondent' age and sex distribution was set as in the table below. The Survey Team tried to focus the respondents as close as the age and sex group set above.

Table 3.11 Attribution of Respondents

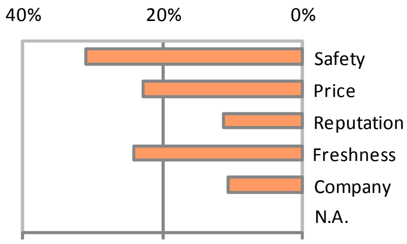
Women				Men
Under 24	25－44	45－54	Over 55	All Age
30%	20%	20%	20%	10%

Note:Except Students

According to the result of this questionnaire survey, consumers put the greatest importance on food safety. More than 60% of consumers of both Hanoi and Ho Chi Minh feel "quite fearful" and "a little bit fearful" about safety of food. About determination of safe food, consumers in Hanoi supported the condition of "Less Food Additive" (23%), followed by "Manufacturing Company" (18%), "Production Area of Raw Materials" (18%) and consumers in Ho Chi Minh city supported the condition of "Certification of Safety" (22%), followed by " Manufacturing Company " (21%), "Less Food Additive " (18%).

What do you pay attention to when you buy processed food?

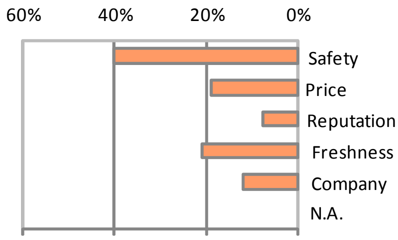
		%	%(exclude "N.A.")
Safety	46	30.9%	30.9%
Price	34	22.8%	22.8%
Reputation	17	11.4%	11.4%
Freshness	36	24.2%	24.2%
Manufacturing Company	16	10.7%	10.7%
N.A.	0	0	
Total	149	100.0%	100.0%



Hanoi

n= 149

		%	%(exclude "N.A.")
Safety	46	40.0%	40.0%
Price	22	19.1%	19.1%
Reputation	9	7.8%	7.8%
Freshness	24	20.9%	20.9%
Manufacturing Company	14	12.2%	12.2%
N.A.	0	0	
Total	115	100.0%	100.0%

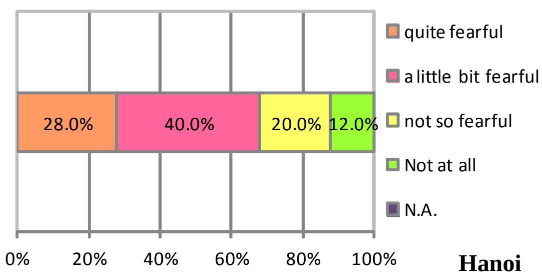


Ho Chi Minh

n= 115

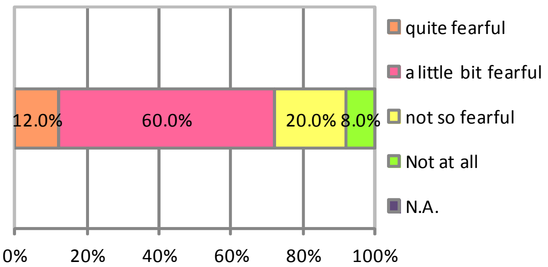
About Safety of Vietnamese Processed Foods

		%	%(exclude "N.A.")
quite fearful	14	28.0%	28.0%
a little bit fearful	20	40.0%	40.0%
not so fearful	10	20.0%	20.0%
Not at all	6	12.0%	12.0%
N.A.	0	0.0%	
Total	50	100.0%	100.0%



Hanoi

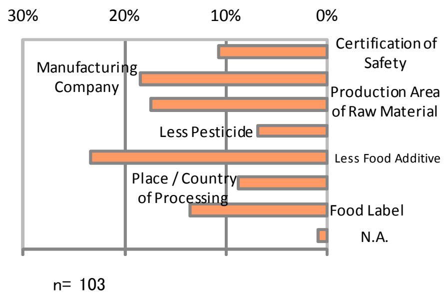
		%	%(exclude "N.A.")
quite fearful	6	12.0%	12.0%
a little bit fearful	30	60.0%	60.0%
not so fearful	10	20.0%	20.0%
Not at all	4	8.0%	8.0%
N.A.	0	0.0%	
Total	50	100.0%	100.0%



Ho Chi Minh

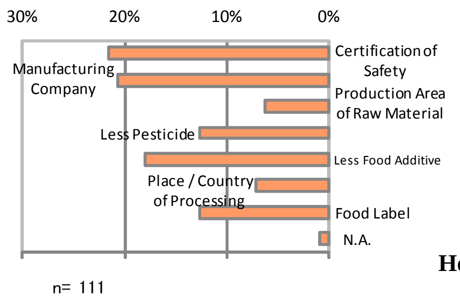
What is determination of safe food for you?

		%	%(exclude "N.A.")
Certification of Safety	11	10.7%	10.8%
Manufacturing Company	19	18.4%	18.6%
Production Area of Raw Material	18	17.5%	17.6%
Less Pesticide	7	6.8%	6.9%
Less Food Additive	24	23.3%	23.5%
Place / Country of Proce:	9	8.7%	8.8%
Food Label	14	13.6%	13.7%
N.A.	1	1.0%	
Total	103	100.0%	100.0%



Hanoi

		%	%(exclude "N.A.")
Certification of Safety	24	21.6%	21.8%
Manufacturing Company	23	20.7%	20.9%
Production Area of Raw Material	7	6.3%	6.4%
Less Pesticide	14	12.6%	12.7%
Less Food Additive	20	18.0%	18.2%
Place / Country of Proce:	8	7.2%	7.3%
Food Label	14	12.6%	12.7%
N.A.	1	0.9%	
Total	111	100.0%	100.0%



Ho Chi Minh

3.5 Legislative Arrangement on Processed Food[14]

3.5.1 The System on Production, Processing, and Marketing of Safety Foods

The Food Safety Law (Decree No.55/2010/QH12) was issued in June 2010 and carried out from July 2011. This takes place of the previous the Food Safety Sanitary Law (No.12/2003/PL-UBTVQH11). The contents are as follows.

FOOD CATEGORY AND DEFINITION	Foods are categorized as 1. Perishable food, 2. Processed food, 3. Dietary supplement, 4. Functional food, 5. Genetically modified food and 6. Radiation irradiation food and each has the respective standards. Additionally, rules and regulations on additive, tools of wrapping, wrapping and transportation are under the category of Food Safety Law. The definition of processed food is applicable to all of the rest of fresh food (not processed food like meat, egg, fish and marine and aqua products, vegetables, root crop, fruit and so on).
GUARANTEE OF FOOD SAFETY	**Application by food traders** Food traders together with food producer and/or importers have to report of in-house food regulation on safety standard to DOH or certifying body set up in each province. Before certificate is issued, traders have to prove whether production (import) items reach the reported standard and undergo an

[14] As of 30th September, 2011

	inspection in a fixed period of time. The following item is necessary to written application. ✓ Written application by the form of DOH ✓ Quality standard report ✓ Copy of business license of the company ✓ Physical check-up certificate of employee and company representative in question ✓ The certificate which proves that employee have undergone training on food safety management After application, Certification Authority issues a certificate within 15 days. When it isn't so, the enterprise gets a contact of how to correct the standard. Validity of such food safety certificate is 3 years. **Operation of food production** As far as food production continues, it is necessary to follow food safety rules. To maintain favorable sanitary situation, it is requested that all employees have to have a healthy examination and undergo the safety and health education periodically. It is also necessary to have an examination of toxic substance, medicine and bacteria by the scientific inspection method with guidance of DOH. **Indication of label** The 44th article on Food Safety Law (Decree No.55/2010/QH10) requests to prescribe quality time limit and indicate the label of additive contained and genetically modified foods.
REGULATION ON FOOD EXPORT	Safety and precautionary measures on food export do not exist generally. But, MARD dated June 11th in 2011 requires the check of residual chemicals for at most 10 % sample of perishable food. The contracting party of importing country (importer) may request to the producer the quality necessary for food safety.
FOOD TRAISABILITY AND RECALL	The 54th and 55th articles of Food Safety Law (Decree No.55/2010/QH12) prescribe food traceability and recall. When requested by the Government[15] or found danger of food, tracking of food will be performed. The producer or importer will specify the food which is not safe and report total volume and stock and the marketed quantity to the Government. The Government decides whether such food is to be recalled or disposed. The Government has to investigate the source of pollution and chase it. Below is included for the above recall. ✓ The food of outdated storage period ✓ The food by which the technological regulation (TCVN and other technical standard on individual food) is not kept ✓ Food produced with new technology which is not permitted yet ✓ Polluted food ✓ Food applied of prohibited substance or with the amount beyond the regulation. The imported food warned from exporting country or from third power or from international organization The recalled product has to be announced by producer or importer, and it has to be recalled and abandoned by the fixed date set by the Government. The Government has to set the fixed date of recall and destruction and process it based on the law to a violation. MOH, MARD and MOIT shoulder responsibility of the field in charge for recall and destruction.
FOOD SAFETY SURVEY	The food safety survey is performed by guidance of MOH, MARD and MOIT. It is necessary for the surveyor from each ministry and People's Committee to comply with the standard set by each ministry mentioned above. The survey is prescribed in 66th and 67 articles of Food Safety Law (Decree No.55/2010/QH12) and includes the following items. ✓ Confirmation whether the quality of registered food is kept ✓ Implementation status of quality prescription. ✓ Content check of label indication and advertising ✓ Confirmation of check situation by the producer ✓ Other implementation status on food safety prescription
PENALTY	Like the industrial goods which are punished toward violation, the 17th article of Violation Punishment Regulations (No.54/2009/ND-CP) prescribes punishment toward food violation. By the degree of the violation, the punishment ranges from fine and temporary business stop to compulsory destruction of product by which human body is affected.
TECHNOLOGY	Technology Standard (Decree No.68/2006/QH11) on food safety prescribes format/distribution, application, and necessity for conformity. This is gathered by TCVN as the national standard.

15 MOH, MARD, and MOIT have responsibility by product.

<table>
<tr><td>STANDARD FOR FOOD SAFETY</td><td>These are prescribed by MOH or MARD, and disseminated by Quality Standard Office. Technology standard on rice, vegetables/fruits, marine artifact and livestock artifact are prescribed by the TCVN and laws shown in the following.
<table>
<tr><td>Rice/Grain</td><td>Prescribed in TCVN/TC/F1</td></tr>
<tr><td>Vegetables/Fruits</td><td>Prescribed in TCVN/TC/F10
Additionally Production and Sales Regulation (No. 99/2008/QD-NN) of vegetables, fruits, and tea is prepared in 2008 by MARD.</td></tr>
<tr><td>Marine Artifact</td><td>Prescribed in TCVN/TC/F11
Additionally, Regulation on Traceability and Recall on Marine Artifact (No. 99/2008/QD-NN) is prescribed. This regulation identifies the principal and procedure on traceability and recall of marine artifact, which is difficult to guarantee the safety.</td></tr>
<tr><td>Livestock Artifact</td><td>The standard of meat product is prescribed by TCVN/TC/F8, and the standard of dairy products is prescribed in TCVN/TC/F12.
Production, import and export, safety survey, authorization as feed, practical use by the Government and punishment to the violation are prescribed through the Livestock Feed Management Regulation (No. 08/2010/ND-CP).</td></tr>
</table></td></tr>
<tr><td>PRECIDENT</td><td>●Food hygiene safety survey in Gia Lam district, Ha Tay.
Food Safety Research Bureau of People's Committee is in charge of Food Hygiene Safety Survey and it is conducted annually. A team of Food Safety Research Bureau which consists of 4-5 people visits the related company and conducts document review and sampling. The team checks the business license, all kinds' commitment note, food safety certificate and raw material purchase certificate. Bacterial propagation, mixture of illegal chemicals and harmful substance are checked through picking a sample (n=2) out from actual production and analyzed through scientific method.</td></tr>
<tr><td>RELATED LAWS</td><td>· Food Safety Law (Decree No.55/2010/QH10)
· Violation Punishment Regulations (No.54/2009/ND-CP)
· Technical Standard (No.68/2006/QH11)
· Production and Sales Regulation of vegetables, fruit and tea (No. 99/2008/QD-BNN)
· Recall of Defective Marine Product and Safety Survey (No.03/2011/TT-BNNPTNT)
· Livestock Feed Management Regulation (No. 08/2010/ND-CP)</td></tr>
</table>

3.5.2 Legislative Setup on Land Use

The state has land ownership in Vietnam, and the usage of land is under the management of the Government. The Government issues a decision note and a contract or a certificate of land use to land user. The land is classified by into three kinds; viz. farmland, non-farmland and wasteland[16]. There is land use plan of whole country by the Government and locally produced land use plan by the local government. Application of these plans is being performed in flexible manner with a view to attract investment.

Below are related legal matters.

(1) Agricultural land

AGLICULTURAL LAND CATEGORY	Agricultural Land Category, comprising the following types of land. * Land for planting annual crops, comprising land for rice cultivation, pastoral land for raising livestock and land for planting other annual and perennial crops; * Forest land for production, protective and specialized use forest land * Land for aquaculture; * Land for salt production; * Other agricultural land as stipulated by the Government.
LIMITATION OF USAGE	The government gives farmland to individual, household or the organization, and the land use restriction is determined. ⅰ. The farmland used by individual, household and community: There exists inherited land and given land from the Government. The farmland which is being used byindividual and/or household is to be reported to the Government in the case of changing it to other purposes. The farmland of collective use for agriculture and marine is not allowed to change the usage.

16 It is prescribed in Vietnam's Land Law (No.13/2003/QH11).

	ⅱ. In case public land is provided as farmland: There is the case that local government office allows farmers to manage public land for agricultural use. ⅲ. Farmland used by foreigner, foreign affiliate and overseas Vietnamese: In case of investment project of agricultural field approved by the Government, the land rent of the farmland will be paid to landlord based on an Investment Act (landlord has to pay farmland usage tax). However, usage of this case is limited to agriculture and salt production only and the land will be confiscated if violated. In reality, the land rented to foreign capital for business use was predominantly owned by central and local government. ⅳ. Farmland for exclusive use of paddy: The land is fully managed by the Government and is difficult to change usage. For the user who wants to divert paddy for other goals such as plant tree, aquaculture and others need to obtain permission of the Government. ⅴ. Forest land: The government's usufruct is given to individual or organization for forestry business. ⅵ. Farmland of river and lake bed and coastal area: The Government's usufruct with rent is given to individual or the organization for aquaculture business. ⅶ. Farmland of salt production: The Government is protecting the area where the salt can be produced, and investment project to such area is encouraged. ⅷ. Farm: For agricultural development and efficient use of land, farm management is advanced by the Government.
PRECIDENT	●Farmland Usage in Gia Lam district, Ha Tay. Inherited agricultural land is used by the blood successor as it is. National land is usually managed in hop tac xa (cooperative society). When a farmer would like to borrow farmland, he needs to apply to hop tac xa. When application was admitted, land of approx. 500 m2 (case in Gia Lam area as of September 2011) and usufruct for 50 years are given.
RELATED LAWS	Land Act of Vietnam (No.13/2003/QH11) passed by National Assembly on Dec.25,2001 Government Decision (No.181/2004/ND-CP) passed by National Assembly on Oct.29, 2004 Circular of Ministry of Environment and Natural Resources (No.30/2004/TT-BTNMT) on Nov. 1, 2004

(2) Industrial Land

MEANS OF ACQISITION	There are several cases of locating and constructing factory in Vietnam. ✓ Rent of land in industrial ward (industrial park, export processing zone and high tech park). ✓ Use of general land. ✓ Use of land provided by Vietnamese enterprise, in case of joint business management with Vietnamese partner
NECESSARY PROCEDURE	**1) Industrial Ward** Concluding lease contract with the developer which granted the usufruct from the Government. Usual land tenancy is 20-50 years. **2) General Land** Negotiating with owner of the land. The usual lease period is more or less 5 years. When an enterprise acquires public land, it is often acquired through real estate company. If investor can acquire an investment certificate[17] after such land contract through registration to concerned agencies (in case no

[17] Case of capital scale less than 300 billion VND cum non-conditional investment

	appraisal required), it is advisable to acquire investment certificate instantly. If appraisal is necessary, investor needs to wait for it. **3) In case of joint business management with Vietnamese partner** When making investment in kind, licensing of industrial land use is conducted under the responsibility of Vietnamese partner.
PRECIDENT OF OPERATION	● Procedure to acquire general land and construct a factory in Gia Lam, Hanoi City The claimant has to submit the following written application to People's Committee. - Application for Establishment by designated format - Financial reports - Investment certificate - Land contract - Joint management contract (if applicable) - Other related contracts Submission on the following form may be asked depending on capital scale and investment condition (3 cases). Case 1 (capital scale less than VSD 300 billion): The explanatory document which proves that the company is conforming to law and related regulation. Case 2 (capital scale of more than VSD 300billion): Explanatory document on vision and mission of establishment, scale, location, capital, progress and land use of project implementation, land use requirement, technology condition and environment measure. Case 3 (the business category of " conditional investment project" being divided by Common Investment Act: The explanatory documents written in case 1 and case 2 are submitted both. People's Committee examines the documents and a land usufruct will be issued if such application fulfills the requirement[18].
RELATED LAWS	Common Investment Act (No.108/2006/ND-CP) oassed by National Assembly on Sept. 22, 2006

3.5.3 Regulation on Domestic Tax and Export Duty

Since agriculture accountes for the big percentage among Vietnamese economy, the tax collected through dealings of agricultural products accounts for the big percentage of the state revenue. VAT will be levied in domestic trade and both VAT and export duties are levied in export of agricultural produce from Vietnam (it is depending on goods to export). When introducing overseas agricultural produce into Vietnam, both import duty and VAT for import are imposed.

(1) VAT

VAT	**VAT exemption** Non-processed agricultural/forestry/fishery products, plant, egg (for propagation), vegetable seed and salt from seawater. **VAT rate** VAT 5%:Feed for animals, sugar etc. VAT 10%:Other goods VAT for imported good:Stated in Circular of Ministry of Finance: No.131/TT-BTC(Dec. 26, 2008)" VAT Table"
EXPORT TAX OF AGRICULTURRAL PRODUCT	**Rice**:PM Decision Paper No.104/2008/QD-TTg(Jul.21, 2008) identifies the following.

[18] As of 30th September in 2011, Vietnamese government provided that foreign-capitalized factories should be concentrated in industrial ward. Thus, it has become more difficult for foreign companies to construct factories out of industrial ward.

	Export Tax of Rice（HS Code 1006） <table><tr><td>No.</td><td>FOB price export rice (per ton)</td><td>Export Tax (VND/t)</td></tr><tr><td>1</td><td>US$ 600~700 less</td><td>500,000</td></tr><tr><td>2</td><td>US$ 700USD~800 less</td><td>600,000</td></tr><tr><td>3</td><td>US$ 800USD~900 less</td><td>800,000</td></tr><tr><td>4</td><td>US$ 900USD~1,000 less</td><td>1,200,000</td></tr><tr><td>5</td><td>US$ 1,000USD~1,100 less</td><td>1,500,000</td></tr><tr><td>6</td><td>US$ 1,100USD~1,200 less</td><td>1,900,000</td></tr><tr><td>7</td><td>US$ 1,200USD~1,300 less</td><td>2,300,000</td></tr><tr><td>8</td><td>US$ 1,300USD~</td><td>2,900,000</td></tr></table> **Agricultural and fishery products except rice** Export Tax = 0%
IMPORT TAX OF AGRICULTURRAL PRODUCT	**Import tax of agricultural and fishery products** No.184/2010/TT-BTC (Nov. 15, 2010) of Circular of Ministry of Finance specifies import tax by HS code. Also, No.1380/QD-BCT (Mar. 25, 2011) of Decision Note of MOIT identifies "Negative List for Import". Some agricultural products are included in this list[19].
CORPORATE INCOME TAX	Investment to agricultural service field can enjoy tax incentives at 20% (the standard tax rate 25%). Tax application of other fields is same as other industries.
RELATED LAWS	Import/Export Tax Law(No.45/2005/QH11)Jun. 14, 2005 VAT Act issued by National Assembly(No.13/2008/QH12)Jun. 3rd, 2008 PM Decision Paper(No.104/2008/QD-TT)Jul. 21, 2008 on "rice export tax" Circular by MOF(No.131/2008/TT-BTC)Dec. 26, 2008 on "VAT Table" Decision Note by MOIT(No.1380/QD-BTC)Mar. 25, 2011 on "Negative List for Import" Decision Note by MOIT(No.31/2006/QD-BTM)Oct. 4, 2006 on "implementing preferable custom duties with Cambodia". Circular by MOF(No.184/2010/TT-BTC) Nov. 15, 2010 on "Table for Import and Export Duties". Corporate Tax Code No.15(Decree No124-2008-ND-CP)

3.5.4 Necessary Inspection for Export

The Government is encouraging export of agricultural product from Vietnam. The inspection procedure on export is not so rigid, and the related law is not tight.

Inspection and quarantine are generally required in the export sales contract. At that time the exporter is requested to fulfill the condition that he follows the international standard (ISO) and HACCP which is international food safety guideline. It has the case that inspection and quarantine in line with the international treaty (WTO etc.) is conducted. On the other hand, domestic law does not require inspection and quarantine for export. Therefore Vietnamese export goods are sometimes refused at custom inspection by the importing country.

EXPORT OF RICE	**Export of Rice** Exporters are doing inspection individually.
EXPORT OF VEGITABLE/FRUIT	**Plant inspection and quarantine list** It is listed as "Plant Quarantine List" by MARD Decision Note No.73/2005/QD-BNN in Nov. 14, 2005. **Organization in charge of inspection and quarantine for Agricultural produce** MARD Plant Protection Bureau integrates above organization. There are branch offices in charge of plant quarantine in each province. Contact information of these branch offices (address, telephone and Fax, E-mail) is indicated on MARD notification No.17/2003/TTLT/BTC-BNN&PTNT-BTS. The HS

19 However, mostly, agreement on import tax break is given preference. For example, based on agreement on agricultural products import between Vietnam and Cambodia, Decision by MOIT (No.31/2006/QD-BTM) prescribed import tax for 40 types of agricultural products was 0%. Also, based on agreement on import tax break between Vietnam and Laos, import tax for tobacco, material of tobacco, rice (up to 40,000 t /year) is 0%.

	cord of which plant quarantine is necessary is also indicated on MARD notification No.35/2007/QD-BNN. **Necessary form for the application on inspection of agricultural products** The applicant is requested to fill up "Application for Quarantine" and submit sample to nearby branch office for plant quarantine. The quarantine person in charge inspects it and notifies the quarantine result to the applicant within 24 hours. When it takes more than 24 hours, the quarantine person is obliged to make a contact to the applicant.
EXPORT OF FISHERY PRODUCT	Since Vietnamese fishery product export is promoted, administrative procedure is simplified in order to support exporters. **Application of Quarantine and circumstances on inspection** The exporter submits documents on application of quarantine to fishery product quality control unit under MARD. After that the inspector from this unit visits to the exporter and judges export possibility within 4 days (for fresh items) and within 7 days (for freezing and fisheries besides the fresh items). If there are no problems, the quality certificate is issued.
EXPORT OF LIVESTOCK PRODUCT	**List of inspection and quarantine item** It is indicated on MARD Decision Note No.45/2005/QD-BNN (July 25, 2005) as "Animal Quarantine List"**.** **Organization in charge of inspection and quarantine for livestock produce** There is veterinary center under MARD veterinary unit in each province, and contact information of these centers (address, telephone and Fax, E-mail) is indicated on MARD notification No.17/2003/TTLT/BTC-BNN&PTNT-BTS. **Necessary form for the application on inspection of livestock products** - "Application of Inspection" with designated format - Vaccination completion certificate (if applicable) - Copy of bought and sold note - Other related forms (If applicable) The quarantine organization notifies quarantine contents, quarantine period and quarantine location to the exporter within 5 days after receiving application document. The organization signs on export permit in case export is OKed, and inform to Customs Clearance of export refusal in case export are not allowed.
PRECIDENT OF OPERATION	● **Case study on plant quarantine branch at Hai Phong Port and Dinh Vu Port** At the branch offices above, 1. Form check, 2. Appearance check, and 3. The condition of export destination are conducted before exportation. Quarantine has to be applied by 10 days before of export. The following form is needed for application. ✓ Written application of designated format ✓ List of goods ✓ Maker's license (copy) ✓ Sanitary certificate at production site ✓ The condition on food safety at export destination After application, the quarantine is conducted through (1) form check, (2) appearance check (the standard/safekeeping condition etc.), (3) sample inspection, (4) notice of quarantine result, and (5) pre-export check (confirmation of certificate), in this order. Refrigerated sample is sent to each plant inspection center for the sample inspection. TCVN5102-90 of standard specifications is applied for agro chemical inspection, and TCVN5139-2008 of standard specifications for non-chemicals. If the sample is satisfying above standard as a result of inspection, the food safety certificate is issued, but if not filling it, the analytical contents are notified to the claimant. If there is dissatisfaction in the result, the producer can request reexamination. The reexamination is sometimes conducted directly at production site. ● **Hai Phong Veterinary Bureau**

	The following procedure is pursued at designated organization (written in No.33/2005/ND-CP, article 30th item 3) in case of animal/flesh meat inspection. The claimant applies to designated organization with the following document. - Quarantine application - Certificate of origin (if available) - Inoculation completion certificate and diagnosis record of disease (if applicable) - Sanitary certificate at export destination (if available) - Bought and sold note (if applicable) - Other related certificates (if applicable) Based on the application above, the following procedure is taken for animal quarantine. a. Confirmation of contents of application b. Period of quarantine, place and the quarantine contents are informed to the claimant within 5 days c. The hygiene condition of the quarantine place is confirmed d. The animal is carried to quarantine place and quarantined within 2 days e. The number of animals and its kind are checked based on the application form f. Laboratory test (failed and sickness or virus infection are separated) g. Germicidal confirmation h. Recording of individual sample which fulfill hygiene condition i. Sample for inspection of other diseases is newly taken (based on request) j. Inoculation is conducted (based on the list of "necessary inoculation with movement of animal"). The sanitary certificate is issued for the flesh and meat which met the following condition. a. Confirmation of contents of application b. Location of quarantine and hygiene condition of inspector are confirmed c. The goods to be quarantined are brought to designated place d. Outward appearance (packing, safekeeping situation and confirmation of bruise on meat) is confirmed e. Condition of the origin country of import or the result of sampling inspection requested by trader is all right f. Confirmation of germicidal situation g. The goods which fulfill the hygiene condition are put into bag and recorded properly **●Independent inspection by each enterprise** There are many processors who are inspecting the product independently when selling and exporting it. In an egg traders investigated by JICA Study Team, they are complying with ISO safety standard as well as domestic sanitary standard. In the field survey conducted by JICA Study Team, there were also many enterprises that are following HACCP system (ie. frozen food processors of vegetables and fishery product). A major local manufacturer was following both Japanese safety and health standard and FDA system of the United States based on the export destination, and they were maintaining inspection system independently according to the standard of the export destination. A processor which are doing internet sales through Japan's agent is requesting all activities of inspection and issuance of safe certificate to Japan's agent because the safe certificate issued in Vietnam is not trusted in foreign countries.
RELATED LAWS	National Assembly Decision No.58/2002/ND-CP(Jun. 3, 2002)on “Plant protection, quarantine, and chemicals” National Assembly Decision No.02/2007/ND-CP(Jan. 5, 2007) on “Plant quarantine” MARD Decision Note No.73/2005/QD-BNN(Nov. 14, 2005)on “Plant Quarantine List” MARD Decision Note No.35/2007/QD-BNN(Apr. 23, 2007) on “Plant Protection List –HS code-“ MARD Decision Note No.45/2005/QD-BNN(Jul. 25, 2005) on “Quarantine list of animal and animal flesh” MARD Decision Note No.15/2006/QD-BNN(Mar. 8, 2006)on “Quarantine of animal, animal flesh, and veterinary”

3.5.5 Legislative Setup for Foreign Investment, and Others

INCENTIVE AND EXEMPTION OF CORPORATE TAX

As for the field and area which receive investment incentives, 15th article of Law on Enterprise Income Tax (No124-2008-ND-CP) prescribes tax rate incentives, exempted and reduction period. Below is designated as the areas with investment incentives in the article. These are designated by the Appendix of 15th article in question.

-The area recognized as "Particularly Difficult" to develop socially/economically
-The area recognized as "Difficult" to develop socially/economically

Before December in 2008, incentives on corporate income tax were dealt with by the 27th article of Common Investment Law (No.108-2006-ND-CP), and it is going to be prescribed by Law on Enterprise Income Tax. While the standard tax rate of corporate income tax is 25%, the enterprise in case of tax incentive measure can apply the following taxation table.

Tax Incentive	Condition	Duration	Exempted and Reduction Period
0%	1.1 The new enterprise invested to "particularly difficult" area to develop socially/economically, which is shown in the Appendix of Law on Enterprise Income Tax (No.124/2008/ND-CP of December 11, 2008)	15 years	Exemption: 4 years Reduction (5%): 9 years
	1.2 The new enterprise invested in the special economy zone and/or high tech park established by prime minister’s decision.		
	1.3 The new enterprise which invested to the following field The field of high technology that could be admitted by law, research center and others that could contribute to technical development, water utilization and flood control plant, generation of electricity, water supply and drainage system, bridge, road, railroad, airport, harbor, airport, and other infrastructure which is placed importance by prime minister.		
	1.4 Software development		
	1.5 Large scale new investment to promising field specified in 1.3 above, by the enterprise which has hi-tech or new technological skill.	Extended up to the limit of 30 years	
	1.6 The investment indicated by the list of government, such as educational training, job training, medical treatment, culture, sport, environment field (social field).	Without time limits (Permanent)	-
20%	2.1 The new enterprise invested to " difficult" area to develop socially/economically, which is shown in the Appendix of Law on Enterprise Income Tax (No.124/2008/ND-CP of December 11, 2008)	10 years	Exemption: 2 years Reduction (10%): 4 years
	2.2 Agricultural service and credit supply	Without time limits (Permanent)	-
(25%)	3.1 “Social investment” to the area which does not fall into the category of "particularly difficult" area nor "difficult" area and the fields specified in 1.6	9 years	Exemption: 4 years Reduction

	above. | | (12.5%): 5 years ※After having passed tax incentive period, the 25% of standard tax rate is applied.
INCENTIVES ON INPORT DUTY	The Customs Law (No.087-2010-ND-CP) prescribes that import duties are exempted on equipment, machinery and materials, transportation and others to be necessary for promotion of the project with incentives. Apart from this, import duties are also exempted on vegetable seed and animal for propagation in case of agriculture/Forestry/Fishery investment project.
CONDITIONAL INVESTMENT BY FOREIGN CAPITAL AND NEGATIVE LIST	Conditional Investment List specified in Appendix III of Common Investment Law (No.108-2006-ND-CP) includes marine product, cigarette, and import-export business. Further, anything related to Negative List in Appendix IV above.
CORPORATE INCOME TAX	Tax incentive at 20% (the standard tax rate is at 25%) is applied permanently for the investment to agricultural service sector. The other category of investment needs to follow the way of other industries.
RELATED LAWS	Law on Corporate Income Tax (Decree No124-2008-ND-CP) Customs Law (Decree No.87-2010-ND-CP) Common Investment Law (No.108-2006-ND-CP)

3.6 Business Record of Japanese Company in Vietnam

More or less 100 food processing companies are under operation in Vietnam. Out of which, about 40 companies are registered to Japanese Business Association of Vietnam[20].

Table 3.12 Japanese Business in Vietnam

Category	Type	Number of Companies	Challenge
Shrimp Exported to Japan	Business Food Maker	Dozens (Contract Manufacturing)	Safety of processing, Low quality and low price,Safety of raw materials
Catfish Exported to Japan	Business Wholesaller	About 10	Japanese preference (Freshwater fish is not popular among Japanese) Image of Catfish, Safety
Squid Exported to Japan	Food Maker	Several	Safety, Decrease in catch
Tuna Exported to Japan	JV	Several (some is Joint-Venture of Business)	Quality of tuna, Restrict fishing Inadequate port and facilities, the ship
Residue of Fishery Processing	Business	A few	There is no factory in Vietnam (Export), lot production
Ice Engine, Freezing Machine	Maker	1	Saturated and competitive market
Cold Storage Warehouse	Logistic	1	Companies with its frozen facilities has increased (Market is still small) (There is no bonded warehose.)
Frozen / Dried Vegetable Exported to Japan	Food Maker Business	5〜6	Lack of suitable sites for Japanese vegetable, lot production, Quality control of raw materials (especially, safety)
Japanese Pickle (Vegetable)	Individual	1	Lack of suitable sites for Japanese vegetable, Quality control of raw materials (especially, safety)
Rice Processing	Food Maker	6〜7	Closed market, Safety of raw materials
Livestock Processing	Food Maker	3	Stable supply of raw materials Establishment of cold-chain
Drink	Food Maker	3	Late market entry, Partnership with local
Seasoning	Food Maker	2	Raw material price increases, Safety of raw materials
Noodle Manufacturing	Food Maker	2	Safety of raw materials
Baking Industry	Food Maker	Several	Lot production, Safety of raw materials

Source) Interview survey conducted by team

20 The major subsidiaries in Vietnam under the Japan Chamber of Commerce and Industry are the Japan Business Association in Vietnam (Hanoi) and Japanese Business Association of Ho Chi Minh City.

Chapter 4 Strategic Processed Food

In Vietnam, most of agricultural products are produced by small-scale farmers and their varieties differ among production site. Thus, quantity and quality of them is unstable, though some limited products such as rice, coffee, pepper, shrimp, catfish and pork can be produced at stable amount and quality.

Meanwhile, in the primary processing of products whose raw materials can be procured at stable amount and quality, state-own companies have big share of market. Thus, it's unlikely that Japanese businesses invest in these fields[21]. Therefore, expected field of attracting Japanese companies may be high-degree processing or processed foor using new materials.

It is possible to present examples of "Promising Processed Food". However, variety of products derived from is quite large and selecting specific products may cause difficulty of analysis and lead to insufficient coverage.

Therefore, in this Survey, we set the "Promissing Processed Food Group" as follows: i) rice processed food, ii) vegetable processed food, iii) fishery processed food, iv) livestock processed food for considering strategic food broadly. For "Promising Processed Food", which is revealed by interviews with companies, representative examples are described in Chapter 6. Also, we considered projects only for increase in production of raw materials should be avoided as countermeasures[22].

[21] Of course, government intervention in free competition is not desirable.

[22] It will become the same as the general agricultural development projects, and it seems to be no room for Japanese food processor to be involved.

4.1 Rice Based Processed Food

Promising Investment by Japanese Company :

- ✓ Sales of agricultural and manufacturing machinery: 4 wheel tractor for rice (Asian type), Rice combine-harvester
- ✓ Sale of rice processing machinery and facilities: Rinse-free rice polishing machinery, Rubber-roll type husking unit (Paddy-cleaner, 5 inch rubber-roll husking unit: husker with paddy-brown-rice separator), Rice cooking facilities, Rice bran-oil production and its facilities, Small rice flour milling and rice noodle machinery for domestic producers, Color-sorter, Husk burning power generator
- ✓ Provision of service by Japonica rice cooking venders for supermarkets and convenience stores
- ✓ Processing and export (EU, Russia, Middle East, Other Asian countries): Rice wine, liquor(Shochu), Sweet-sake(Mirin), Instant-rice, Rice-bran-oil()

Major Market:

Domestic market of Vietnam, Third country other than Japan (EU, Russia, Middle East)

4.1.1 Production

(1) Production of Raw Materials

Production of paddy in Vietnam is 40 million ton. (2010)

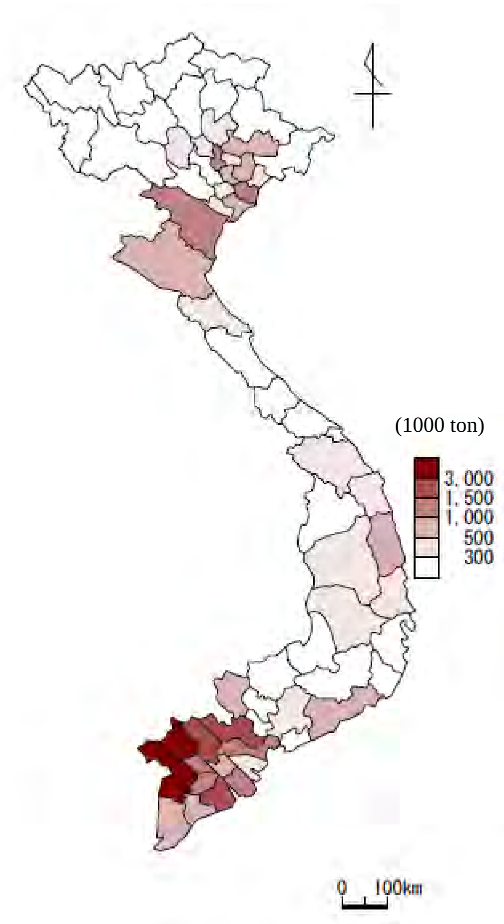


Figure 4.1 Production of paddy by province

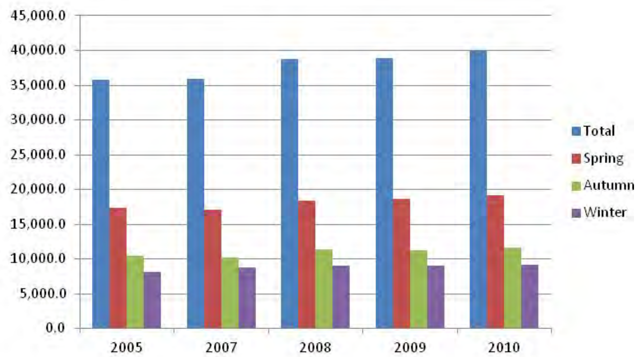


Figure 4.2 Production of paddy by Cropping Season

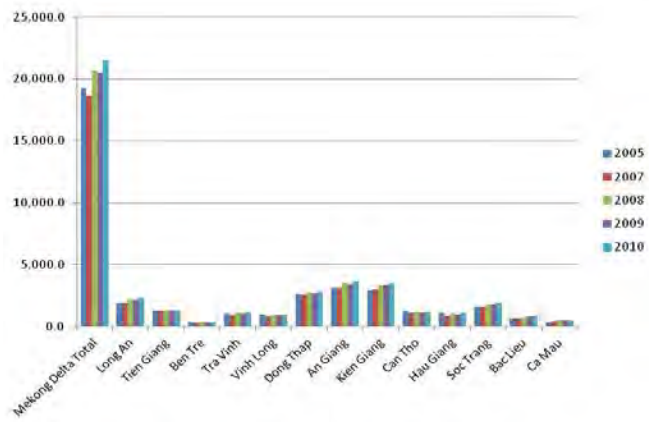


Figure 4.3 Production of paddy by province in Mekong Delta region (2005-2010)

Cropping season is spring (48.1%), autumn (29.0%), winter (22.9%) in 2010. Mekong delta

(54%) and Red river delta (17%) is the major area of paddy production. Top 3 provinces of paddy production in Vietnam are An Giang, Kien Giang and Dong Thap. According to Vietnam Food Association (VFA), 72% of rice is for domestic consumption, 28% of rice is for export. Figure 4.2 shows time-series data of national paddy production by cropping season and Figure 4.3 shows production by province in Mekong Delta region.

(2) Production System of Raw Material

Harvested paddy is traded in farm between farmers and collectors. In Mekong Delta region, large-scale paddy production is increasing, thus, mechanized farming is rapidly proceeding. Tillers, four –wheel tractors become widely used there, now, combine also become widely used.

Although farmers usually produce rice for self-sufficiency, in recent years, some farmers specialize in production of agricultural items other than rice (such as vegetable, pig) and they purchase rice from outside. In northern Vietnam, large-scale rice cultivation through farmers' group or cooperative is not popular from background of de-collectivization of agriculture by the Doi Moi policy, thus, selection of varieties cultivated in farm depends on each individual farmer. In southern region, after 2009, distribution of rice for export is on the road toward a market economy, and in 2010, share of private sector in distribution of rice for export is over 50%. VINAFOOD 2 concerned rice processors, big private rice processors are proceeding to establishment of vertical integration from farm to rice milling plant and integration of service to farmers from sales of agricultural equipment to technical transferring.

Most of big milling plants are with capacity of 100 ton/day. Major rice milling plant is along the river and transport milled-rice by barges to the shipping port.


Figure 4.4 Rice Brought by Truck (Left), Rice Shipment Facilities toward Barge (Right)

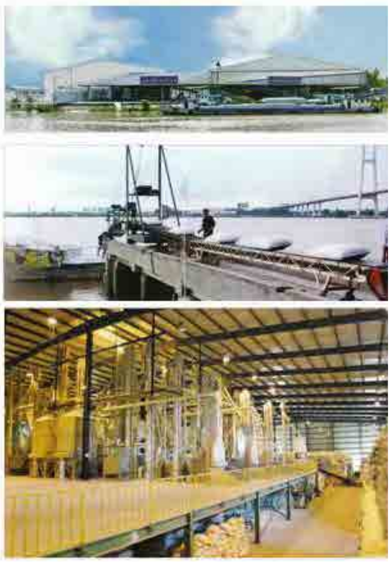


Figure 4.5 Modern Milling Factory Concerned with VINAFOOD 2

Source) VINAFOOD 2 Brochure (2011)

(3) Cost Structure of Raw Materials

Paddy production cost accounts for 48% of price at farm in Mekong Delta region, 65% in high quality rice produced in Red River Delta region, 66% in hybrid rice produced in Red River Delta region. In Mekong Delta region, mechanized farming is advanced more than that of Red River Delta region, and portion of labor cost is lower in Mekong Delta region than that of Red River Delta region. Therefore, productivity of paddy is higher in Mekong Delta region than that of Red River Delta region.

Table 4.1 Cost Structure of Paddy (1,000 VND / ha)

Item	Mekong Delta (Vinh Long)		Red River Delta (Nam Dinh)			
	Medium Quality	Percentage (%)	High Quality	Percentage (%)	Hybrid	Percentage (%)
Seed	876.0	6.4	396.5	2.1	980.0	5.0
Fertilizer	4,354.4	31.8	6,312.4	33.6	5,819.4	29.9
Agriculture	1,152.0	8.4	1,165.0	6.2	1,359.9	7.0
Labor Cost	5,782.0	42.2	10,105.0	53.8	10,437.3	53.7
Other Cost	1,045.0	7.6	400.0	2.1	474.0	2.4
Loan Interest	500.0	3.6	400.0	2.1	382.0	2.0
Total Production Cost	13,709.4	100.0	18,778.9	100.0	19,452.6	100.0
Sales	28,275.0	-	28,952.0	-	29,338.0	-
Sales Profit	14,565.6	-	10,173.1	-	9,885.4	-

Source) Agroinfo "Vietnam's Rice Industry in 2009 and Outlook for 2010" (Original Source: Department of Cultivation, MARD)

4.1.2 Processing

(1) Present Situation of Production Technique, Quality Control, and Traceability

Paddy is traded between farmers and collectors. There is no quality standard for paddy and the traditional commercial custom is applied for trade of paddy. In Vietnam, post harvest is inadequate. High moisture paddy is harvested and milled, thus, it cause deterioration, cracks of rice grains and percentage of head rice is very low.

Southern Institute of Agricultural Engineering and Post-harvest Technology (SIAEP) and major private companies have a sense of crisis on low-quality rice, and introduced improved machinery such as color-sorter. In the wake of rising rice prices in 2008, Vietnamese government tried to transit to market economy in the distribution of rice, especially in the South. Major companies have switched to trade by brown rice to makes it easy to determine the quality of rice. Also major companies try to establish sales network of agricultural equipment including rice seeds.

Most of rice processed food (rice flour, noodle and paper) in Vietnam is still produced by home manufacturing under bad sanitary condition. However, some rice processed food sold by big companies is produced in modern sanitary plant. In manufacturing plant in / near Hanoi, rice flour and other starch is produced mainly for domestic consumption. Minh Duong Foodstuff Joint Stock Company in Hanoi is planning to hygienically production of rice flour / noodle in cooperation with nearby companies from next year. Inside of plant is very clean as shown in Figure 4.6.


Figure 4.6 Factory of Minh Duong Foodstuff Joint Stock Company Equipped with Modern Facilities

Meanwhile, in southern Vietnam, Safoco Foodstuff Joint Stock Company under VINAFOOD 2 is manufacturing modern instant noodles and rice paper based on technology introduced by Japanese noodle processing industry in modern equipped factory. Strengthening the safety of foods and modernization of plant in medium scale rice noodle / paper manufactures is progressing. Thus, demand for Japanese small-sized machinery and equipment for noodle manufacturing is expectedly increasing.



Rice Noodle Manufacturing Drying Rice Noodle in the Sun near Pig House Dried Rice Noodle Bag Weigning

Figure 4.7 Rice Noodle Production by Home Manufacturing

Figure 4.8 Sanitary Rice Paper Manufacturing Factory concerned with VINAFOOD 2

Source) VINAFOOD 2 Brochure (2011)

Box 2：
Rice tender of VINAFOOD 2 is done at a frequency of 3-4 times per month. Quality of milled rice for export has become high-quality (5 ~ 15% Broken). Public notice is done at VFA in addition to VINAFOOD 2.

Figure 4.9 Tender Notice in VFA

Quality standard of rice for domestic consumption does not exist in Vietnam, thus, it is far from traceability.

High quality rice for domestic consumption is traded with following information; variety of rice, day of milling, rice milling plant. Traceability of rice for export is conducted only when contract requires.

(2) Major Market

Rice is finished as white rice by milling dealers. After milling process, sorting of broken rice and commercial bagging is done. They are divided into the domestic market and for export. Rice for domestic market is 16 to 17 million ton; export rice is 6-7 million ton. Rice for domestic market is not divided by the grade. Meanwhile, export rice is classified as small and large broken or head rice. After this process, they are blended by shipping agreement by finishing exporters.

VINAFOOD 1, 2 (state-owned enterprises) and other province-owned exporting companies are exist as leading finishing companies. Export rice is handled by VINAFOOD 2 and its subsidiary companies, which share 30% of total. Rice is distributed from finishing companies to consumers through wholesalers and retailers. The market economy has been increased the share of major private companies.

Most of the domestic and export rice is produced and processed in the Mekong Delta area. Most of the rice is distributed through VINAFOOD 2 and major milling companies. In rural area, small traditional contractors are dealing with a lot of rice which is consumed, but it is shifting to the modern distribution.

(3) Cost Structure of Processing

As shown in Figure 4.10, the delivery price increases about 25% at milling and finishing process from the company purchasing rice from the collectors and selling to wholesalers. Thus, the margins of rice products at milling process are as high as that of the retailers through the rice distribution from farmers to consumers.

Figure 4.10 The delivery price of rice in Vietnam market (Final retail price = 100)
Source: Japan Research Institute

(4) Siting Situation of Private Sector and Intention of the Future

There is one Japanese company in Vietnam, which produces Japonica rice for export. There is a small amount of export result. There are three Japanese manufacturers of Shochu or Japanese Sake, all of whom use long-grain rice for ingredients.

According to a major Japanese trading company, the companies so called "Rice vendor", which produces lunch with a Japonica rice and delicatessen, are expected to invest in Vietnam with the advance of one major Japanese retailer and two Japanese convenience store chains. The rice vendor has already appeared in Ho Chi Minh City.

Figure 4.11 Advertisement of Rice Vendors

Source) BINABOO Vol.54 (November, 2011)

VINAFOOD 2, VFA and VCCI branch in Ho Chi Minh hope the expansion of Japanese companies with the advance of market economy in rice. It is considered as important for future trends of VINAFOOD 2.

(5) Necessary Inspection for Export

In Vietnam, the Food Safety Law (Decree No.55/2010/QH12) is only regulation for rice processing. There are no quality standards for raw paddy rice, milled rice and brown rice which distributed in the domestic market. The rice trade is based on existing business practices. There are standards for export rice, but there are no expensive and sophisticated analytical equipment which can detect the pesticide residues, toxic chemicals, dioxin, mycotoxin and so on. Therefore, the actual inspection are not done except by major companies such as Vinafoods. Most of the importing country of Vietnamese rice is African and other developing countries. There are no food safety regulations in these importing countries. Even if there are regulations on the form, they do not possess any testing facilities in fact. Inspection is done for rice quality only, which is listed in the contracts. In inspection of rice for export to developing countries, physical quality standards of rice have been given priority.

Vietnamese rice export standards are substantially in accordance with the export standards of Thailand and U.S. These export standards are the basis for rice trading in Vietnam, and prescribed long or short grain type, grain size, broken rice or complete full grain, blending ratio of head rice and broken rice, red grains, yellowing grain, white grain (dead rice), immature grain, allowable contamination rate, mixture of rice husks, water contents etc. High-quality rice has been selected by color sorter, which is supplied for the domestic and international market.

(6) Procurement of Machinery and Materials Necessary for Processing

Most of the leading Rice finishing companies are affiliates of Vinafoods. These companies are large scale both their capital and trading volumes. However, the large-scale rice milling facilities overages even in these leading companies. Although, partial update of facility is done, color sorters, which are necessary to ensure the quality of export rice, have not been introduced.

Major private companies, which are affiliate of VINAFOOD 2, have a certain degree of modernized facilities. However, small local companies do not have enough budget, thus their facilities are not improved. With the modernization of rice distribution, the demand for sliding rice units is thought to be come out.

Post harvest treatment (especially drying, grading and storage) is inadequate. Therefore milled rice is low quality in Vietnam. Milling machines in Vietnam are overage even in leading companies. It caused significant degradation of milled rice qualities. Quality standard of rice for domestic consumption does not exist in Vietnam.

There is a quality standard of milled rice for export in Vietnam. Although in Vietnam, there are not high-performance inspection instruments for detecting pesticide, dioxin and other harmful residues.

Box 3:

Rubber-roll type paddy husking unit consists of 2 rubber-rolls, winnower (aspirator) and Paddy /brown-rice separator. In 1980s, JICA promoted one-pass rice milling unit with the husker to improve the post-harvest loss in South-east Asian countries, such as Indonesia, Thailand, Philippines and Myanmar and so on. Specially, head-rice recovery was improved more than 15 %, compare with abrasive type husking method. The rice business is based on the recovery of head rice. Extension of rubber-roll type husker for small and medium enterprises will contribute to Vietnamese rice industries.

Husking unit (5 inch roll)
(For Japanese husking contractors)

4.1.3 Legislative Arrangement on Food Processing

Total amount of export rice is controlled[23] by the Government. Total amount is decided by the Government every year and Vietnam Food Association allocate export ceiling to each company. Government issued Decree No. 109/2010/ND-CP and it has become effective since January 2011. Based on the decree, rice exporters in Vietnam should satisfy the qualification as follows;

- Acquisition of certificate from MOIT (Valid for 5 years).
- Possession of rice warehouse whose capacity is over 5,000 ton and milling machine whose capacity is 10 ton per hour.
- Transition period is 9 months.
- It is prohibited to export rice by companies without certification after 1st October 2011.

In addition, the government has been trying to have some official function of stockpile of

[23]Vietnamese government has a regulation for the rice export in order to secure enough rice for domestic consumption. In detail, the total amount of export should be decided based on the accurate prediction of produce and consumption.

products to rice exporter. Export companies are required to have a stockpile of rice to stabilize domestic markets by the Decree No. 109/2010/ND-CP. In particular, the exporter shall maintain at least a 10% of stockpile of the total export volume in the past six months at the time. Stockpile reserves by rice exporters are included in the reserve of the government in the broad sense, in which is a small percentage. U.S. Department of Agriculture (USDA) forecasts that the volume of rice exports in Vietnam in 2011 is 580 million ton in the milled basis. Thus, if 10% of this quantity in the six months is stockpiled, stockpile of exporters becomes approximately 300,000 ton weak. This is 1.5% of domestic consumption (19.5 million ton) per year, and just less than 10% (400 million ton) of the planned the government stockpile in 2011.

4.1.4 Logistics Network and Marketing

(1) Present Situation of Logistics Network Connecting Raw Material Production Site – Processing Site – Consumption Site

Rice distribution structure of Vietnam is a multi-stage. Excluding rice finishing and processing companies, the majority are very small-scale companies. Most of the companies involved in rice distribution belong to the private sector, except finishing companies for export rice.

Rice distribution structure is shown as follow; farmers harvest rice (paddy), and sell to collectors by cash. Collected rice is sold to leading rice milling companies, wholesalers and exporters. Most of collectors are small-scaled traders in the villages. Rice is sold to the consumers through wholesalers and retailers.

Trucks are mainly used to deliver paddy to large-scale rice milling plants. Rice is blended and bagged in the plants and transported to the exporting ports by belt conveyors and barges from the plant built along the rivers with blended and bagged. Trucks are also used for logistics of rice for domestic market.

Figure 4.12 shows the distribution system of rice in Vietnam.

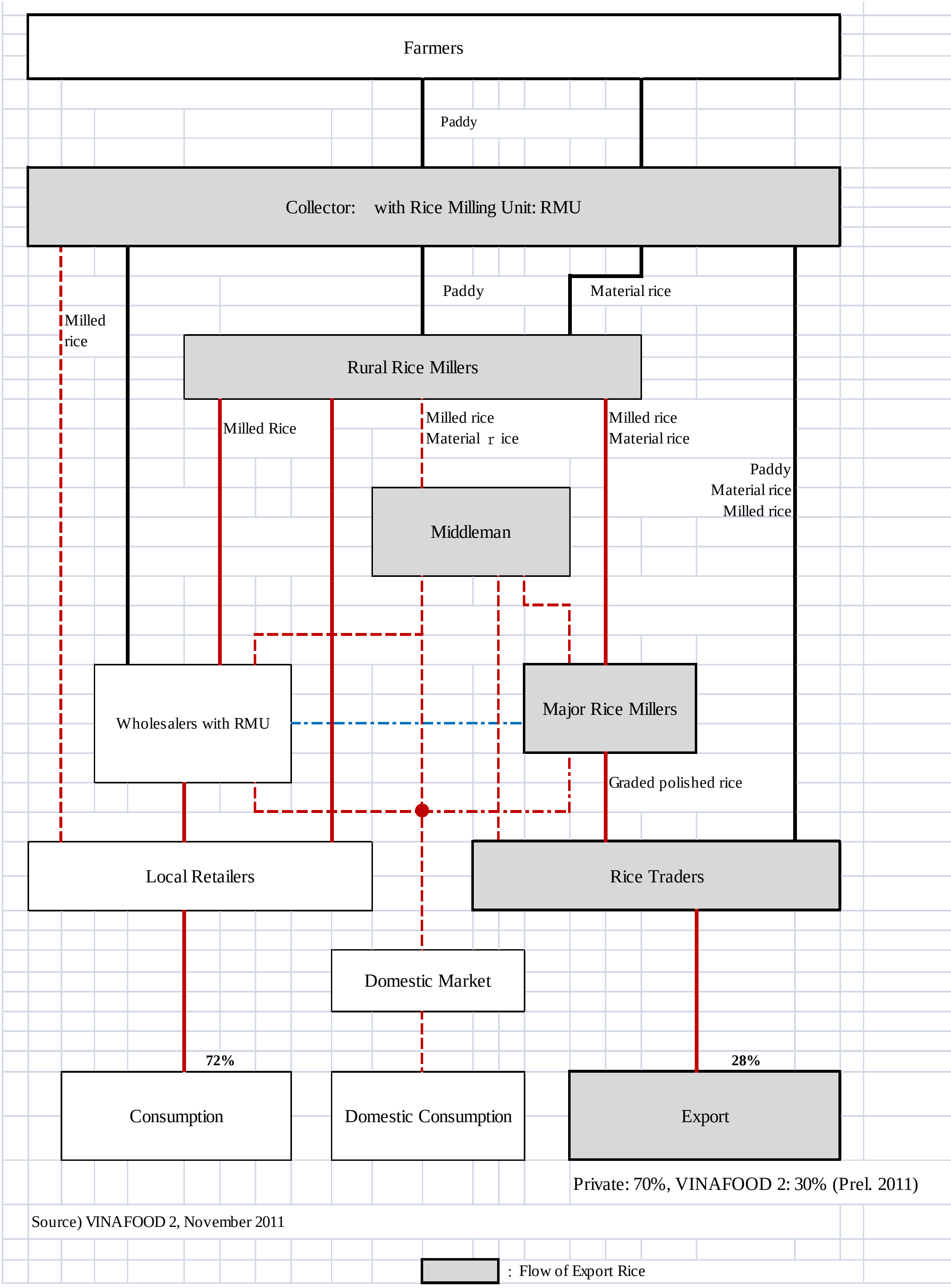


Figure 4.12 Market Network of Paddy, Material Rice and Milled Rice in Vietnam

(2) Consumers' Needs at Expecting Buyer Site (Domestic and Overseas)

Vietnamese rice for export and domestic markets are moving from the conventional low-quality rice into high-quality and good taste rice. This transition is caused by the spread of the electric rice cooker. In the future, it will be necessary to develop competitive rice products, such as instant rice or high quality aromatic rice for the Middle East Market. It is necessary to promote the branding of Vietnamese aromatic rice with the competence by Pakistani Basmati or Thailand aromatic rise and so on. In East Africa and the Middle East, there is a high demand for parboiled rice[24].

1) Domestic

Rice consumption of Vietnam domestic markets will reach more than 130kg per year (per person). According to the income increase due to the economic growth, Vietnamese consumers will seek high quality and good taste rice. In urban areas, high-quality rice has been sold by the production area or brand. In the rural area, consumers buy low quality rice and remove broken rice by hand at home. In rural areas, there still remains the traditional spill-boiling cook method for lower degree of milling rice. In urban areas, demand for high degree milled rice is growing due to spreads of electric cooker due to their spreading.

2) Overseas

According to the major private rice milling companies, the export volume of good taste rice (such as aromatic rice) or high quality (like 5% broken rice) has been increasing. Same results were obtained from interviews to the major rice suppliers (VINAFOOD 2 affiliate). Their brochures and websites appeal "high quality rice". Commitment to good taste rice production is promoted by a major private rice milling company (VINAFOOD 2 affiliate). According to the interviews with rice companies in Vietnam, the share of high quality rice will be expected to grow with a big wave of privatization from 2011 to 2012. These companies have information rice businesses in Thailand, Philippines, Indonesia and other countries, thus, they have knowledge about demands for rice in these countries.

The common demand of global rice market is good taste and high-quality milled rice, except African country which has short history for eating rice. However, there are small differences of demands between countries which have long rice eating history. For example, there are different demands for aroma and stickiness of aromatic rice among Thailand, Vietnam and Cambodia. In Japan, there were illegal resale cases of Vietnamese accident rice in 2009. Thus, Vietnamese rice had lost the trust in Japanese Market. Excluding the minimum access rice, the demand for Vietnamese rice is almost nonexistent in Japan.

(3) Retail Structure at Expecting Buyer Site (Domestic and Overseas)

There is no large-scale intervention by the government or state-owned enterprises for domestic distribution of rice in Vietnam. Rice has been distributed based on market supply and demand. Thus, rice has been widely distributed from local market to large supermarket. When considering the investment from Japan, it is an important assumption that retail sales to Japanese companies which can share the common business practices.

(4) Competitive Products at Expecting Buyer Site (Domestic and Overseas)

Major Japanese agricultural machinery manufacturers have received the configuration of cheap

[24] There are few manufacturing facilities of parboiled rice in Vietnam. Large amount of rice husk is generated as by-product waste in a large rice plant, Using these rice husk as fuel, energies can be self-sufficient for the production of parboiled rice; e.g. electricity, heat, steam etc. In Thailand, the rice husk is used as fuel has been for a long time, and electricity is generated and sold by burning rice husk. In Vietnam, it is desirable to perform energy utilization by rice husk for environmental regeneration.

Chinese-made clone or counterfeit machineries. However, the rice-related agricultural machineries have been increased their share in the Chinese market by combining a simplified low-cost tractors, and they are trying to bring the results to the Southeast Asia. Japanese post-harvest processing machineries are going into the Chinese market, and they will also advance in Vietnam. The strength of Japanese agricultural machinery is that Japan had been conducted technical cooperation with Vietnam over several decades for introduction of machineries with the high quality, reliability and durability. The market economization of Vietnamese rice sector is a great opportunity for Japanese agricultural machinery manufacturers.

Most of the Japanese rice vendors are small-scale businesses. If they enter to the Vietnamese Market, it is expected that they will be in the fierce competition with local companies and other foreign capital for securing raw materials.

Japanese rice vendors’ strengths are their relationship and trust with Japanese retailers. They also have the technology to ensure high hygiene and safety. There are technologies in Japanese venders; reduced environmental effluents in the lunch catering center called "no-wash rice" or "automatic rice cooker equipment," "rinse-free rice" are expected to invest in rice market in Vietnam.

Moreover, 10% weight of brown rice becomes the rice bran. In large rice milling factories, the amount of milling rice become 100 ton per days, and very large amount of rice bran are made as sub-product.

Rice bran oil is a fine edible vegetable oil. There are opportunities for high quality rice bran oil from Vietnam for oil extraction with refining technology of Japan. More demand for vegetable oils and pomade in global market, thus it will be considered as promising products which can export to Japanese market.

4.2 Vegetable and Fruit Based Processed Food

Promising Investment by Japanese Company :

- ✓ Introduction of good quality seed : Cooperation between Japanese big seed company and Vinaseeds
- ✓ Sales of vegetable processing machinery and equipment : Slicer, Washer, Dryer, Wrapper
- ✓ Provision of service by authorized inspection / certification institutions: Japanese inspection entities operate in Vietnam as the authorized institution by Ministry of Health, Labour and Welfare of Japan.
- ✓ Manufacture and sales of processed food: frozen hotpot for domestic market of Vietnam, frozen / dried vegetable and Japanese pickle for Japan

Major Market : Domestic market of Vietnam, Japan

4.2.1 Production

(1) Production of Raw Materials

Total production of vegetable is 12 million ton and production area is 740,000ha (2009). About 10~15 % crops are supplied for processing. Thus, 1.2~1.8 million ton is estimated to be supplied for processing.

Main production area of vegetable is Lam Dong province (Dalat), Mekong Delta and Red River Delta. In Red River Delta region, Thai Binh province and Hai Duong province are major production area. In Mekong Delta region, Tien Giang province and An Giang province are major.

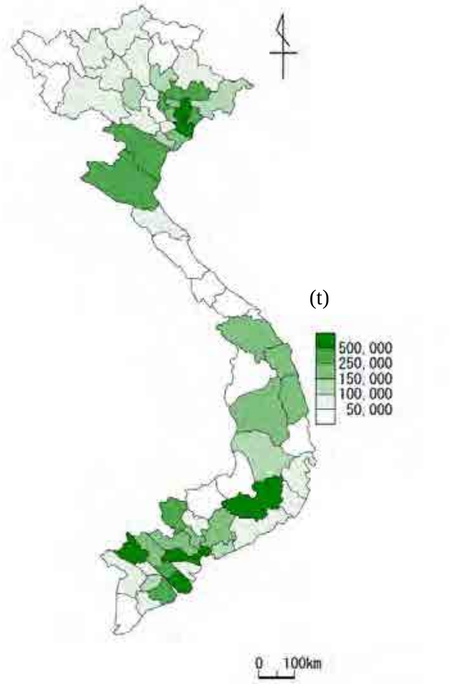


Figure 4.14 Production of Vegetable
Source：MARD (2009)

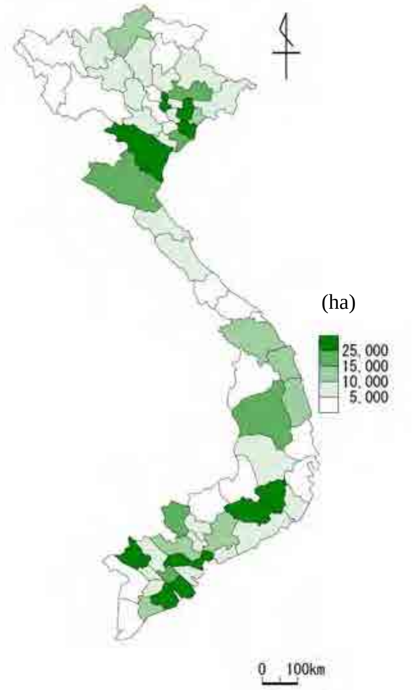


Figure 4.13 Area of Vegetable
Source：MARD (2009)

Table 4.2 Production of Vegetables Top 5

Province	Production (t)
Lam Dong	1,243,918
An Giang	802,930
Thai Binh	633,857
Hai Duong	572,887
Tien Giang	555,191
Whole Country	11,885,067

Table 4.3 Area of Vegetable Top 5

Province	Area (ha)
Lam Dong	43,202
Tien Giang	34,027
An Giang	33,835
Thanh Hoa	31,120
Soc Trang	30,808
Whole Country	735,335

Fruit and Vegetable Research Institute under VAAS has been developing varieties, however, it positioned as part of research and other technical assistances for farmers such as research on improvement in cultivation. In addition, the Institute has not introduced new varieties from abroad, thus, private companies introduce varieties except state-owned company "Vinaseeds" [25].

The production of fruit is 2.6 million ton and production area of fruit is 780,000 ha(2009). Main products are banana, pineapple, longan and lychee. Major production area of fruit is Long An, Tien Giang, Vinh Long, Ben Tre, Dong Thap, Soc Trang and other southern provinces around Mekong Delta. Exceptionally, yield of lychee is increasing in northern area.

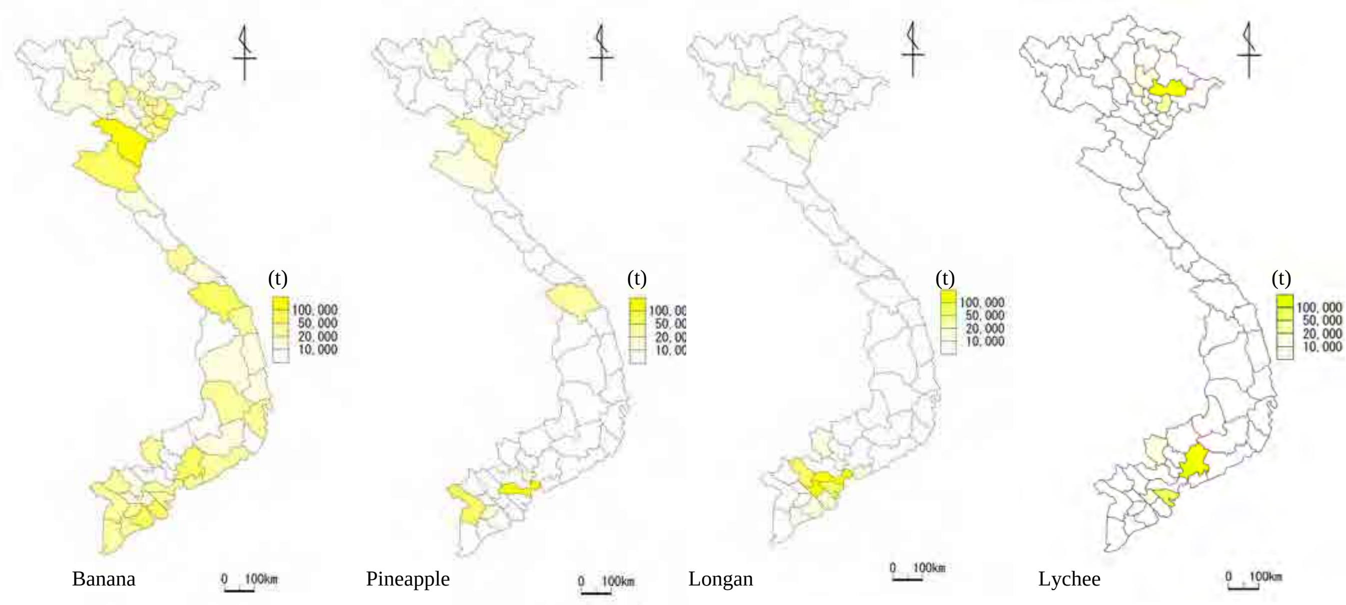


Figure 4.15 Production of Fruit

Table 4.4 Production of Fruit Top 5 (2009)

Province	Banana (t)
Thanh Hoa	132,900
Soc Trang	85,500
Dong Nai	84,900
Thai Binh	83,300
Hai Phong	69,500
Whole Country	1,660,800

Province	Pineapple (t)
Tien Giang	193,200
Kien Giang	80,900
Ninh Binh	39,600
Thanh Hoa	30,070
Quang Nam	23,800
Whole Country	502,700

Province	Longan (t)
Tien Giang	123,500
Vinh Long	100,600
Ben Tre	67,000
Dong Thap	55,500
Hung Yen	20,200
Whole Country	590,600

Province	Lychee (t)
Dong Nai	144,900
Bac Giang	116,300
Ben Tre	67,600
Hai Duong	27,300
Vinh Long	18,200
Whole Country	536,500

[25] Vinaseeds I (in North) has partnered with Japanese seeds company and import seeds of Chinese cabbage and broccoli and sell to farmers in the North. Vinaseeds is seeking to become partner with Japanese big seeds companies.

(2) Production System on Raw Material

Vegetables and fruits processing companies procure raw materials i) from their own farms, ii) through contract farming with farmers / farmers groups.

For procurement from companies' own farms, many companies abolish their farm or switch to perennial crops such as tea due to unstable income caused by recently rising management cost.

For procurement through contract farming, many companies combine individual farmers' contract with farmers group / cooperative's contract. In case of vegetable and fruit processing Company A in Lam Dong province, shows an advantage of contract such as transaction price, technical support to farmers who meet the selection criteria of Company to gather contracted farmers. Furthermore, Company A buy vegetables from candidate farmers to verify the quality, and after taste test in the Company start negotiation on the terms and conditions of contract. After that, Compamy A send technical manual to farmers and contract farming starts.

(3) Cost Structure of Raw Materials

Cost structure of major raw material (spinach)[26] is shown in Table 4.5. This is based on the interview from two (2) vegetable and fruit processing companies in Dalat. One is Vietnamese Company A which procures raw materials through contract farming. Its total area for procurement is 450 ha, and Company A contract with 500 farmers and three (3) farmers' group. Another is Company B which is Taiwan-capitalized and procures raw materials from its own farm (total area is 37 ha) and through contract farming (contract with 100 farmers). Cost of raw materials accounted for about 20 % of product price in Company A, and 40% in Company B.

Table 4.5 Cost Structure of Major Raw Materials (Spinach)

Vietnamese Company A (Contract Farming)	Taiwan Capitalized Company B (Its own Farm)
Inputs (Fertilizer, Pesticides, Seeds, Soil Improvement etc..) : 30 ~ 40% of total cost Labor Fees (Harvesting) : 30 ~ 40% of total cost *Harvesting is conducted by company's harvesting division, thus, farmers don't harvest by themselves. Others (Irrigation, Fuel, Electricity) : 5 ~ 10% of total cost *Water management fee is funded by company.	(Production Cost per 1,000m^2) - Seeds: US$ 11.75 - Fertilizer : US$ 70.5～282※1 - Pesticides : US$ 47 (Only those in list company approved can be used ; ex. Materials for Priventing Disease of Crops) - Tilling : US$ 23.5 (Mainly using tillers. Including fuel fee for machineries. Machineries have been leased by individual farmers) - Water Management : US$ 517 (2 persons x 45 days, Farm irrigation fee) - Harvesting : US$ 9.4 - Post-Havesting : Not conducted *1 : Depends on the yield required by the Company. *2 : Crop Rotation (Spinach→Sweetpotato) *3 : Farm workers are minor minority groups such as K'ho

For fruit, cost structure highly depends on tree species and age. The cost of fruit production is high during tree age is young, and typically lower in accordance with tree age. In an interview in northern Vietnam, pineapple production cost (cultivation period is from April to September in 2010) was 27 ~ 30 million VND / ha, accounted for about 30% of sales.

[26] Frozen spinach is major vegetable processed food exported to Japan.

(4) Present Situation of Production Technique, Quality Control, and Traceability

With economic growth in recent years, consumers' awareness of food safety has been increasing in Vietnam. Therefore, from 2000, many programs and projects have been implemented by donors and Vietnamese government toward the safe vegetable and fruit production. These programs and projects overlap at the IPM (Integrated Pest Management) and GAP (Good Agricultural Practice) in their tenets.

For GAP, there are major donor-supported projects nationwide as shown in Table 4.6.

Table 4.6 Main GAP Project Supported by Other Donors

Project	Donor	Target Area	Period
Reducing pesticide residues, improving yield, quality and marketing of Cucurbit and Brasslike vegetable crops in Northern Central Vietnam through improved varieties, GAP principles and farmer focused training (card.com.vn).	Australian Government, (AusAID)	Nghe An (Cabbage and Watermelon)	2007/2 –2010/1
The Food and Agricultural Products Quality Development and Control Project (FAPQDCP)	Canadian International Development Agency (CIDA)	Hanoi, Nam Dinh, Thanh Hoa, Hai Duong, Da Nang, Lam Dong, Ho Chi Minh City, Dong Nai	2008-2013
Project on improvement of quality and safety of agro products and biogas development	Asian Development Bank	Hanoi, Hai Duong, Hai Phong, Bac Giang, Phu Tho, Son La, Da Nang, Binh Thuan, Ninh Thuan, Tien Giang, Ben Tre, Tp Ho Chi Minh, Lam Dong ...	2009-2014

In this context, JICA's project "Strengthening the Capacities for the Field of Management of Vietnam's Crop Production Sector for Improving the Productivity and Quality of Crop's Products" is being conducted in northern area near Hanoi, Quang Ninh, Hung Yen, Ha Nam, Hai Phong, Hoa Binh, Thai Binh, aims at establishment of implementing system of production of safe vegetable based on VietGAP[27]. According to the experts of this project, most of the farmers do not try to follow GAP unless safe vegetable market is developed.

IPM aims to reduce the toxic chemical by restricting the use of pesticides. Department of Plant Protection under MARD provides that restrict use of pesticides, staff in plant protection stations in each district teach the proper use of pesticides to farmers.

Centered on GAP and IPM, efforts towards production of safe and high quality vegetable and fruit are currently underway, but these haven't produced adequate results. The reason is that i) legislative arrangement for these activities is still under development, ii) many consumers still do not trust in a product called safe vegetables, thus, the consumption of safe vegetables and organic vegetables is limited, therefore farmers are not motivated to follow these activities. However, some organization established "safe vegetable shop" and attract consumer with high awareness through traceability.

4.2.2 Processing

(1) Present Situation of Production Technique, Quality Control, and Traceability

In Vietnam, vegetables and fruits are processed to frozen vegetables and fruits, dried vegetables and fruits, canned vegetables and fruits. Degree of processing of these products is low. Thus,

[27] VietGAP was enacted on January 28, 2008. VietGAP is based on the ASEAN GAP enhanced for corresponding to fruits and vegetables in Vietnam. During the formation of VietGAP, there was assistance of Canada.

production technology, quality control and traceability of these processed foods mostly depend on those of the materials.

In case of the frozen / dried vegetables and fruits, which are mostly exported to Japan, processing plants acquired HACCP and ensure traceability, and follow the strict quality control standards based on the requirements from Japanese clients.

Figure 4.16 Quality Control of Frozen Vegetable Plant in Dalat
(Left : Layout of Processing Plant certified HACCP, Right : Hygiene Management of Processing Plants Worked)

(2) Major Market

Target production amount of vegetable and fruit based processed food in Vietnam was 380,000 ton for export and 100,000 ton for domestic market (2010), thus, most of vegetable and fruit based processed food is for export (80%).

90% of vegetable exported from Vietnam (value basis) is processed food. They are exported to some Asian countries (Japan, Taiwan, Hong Kong and Singapore), European countries and Canada. Frozen vegetable is main product for Japanese market. It shares over 50% of total vegetable processed products bound for Japan from Vietnam. Export volume of frozen vegetables to Japan is 5,400 ton in 2009, which accounts for one third of total vegetable and fruit exported to Japan (16,000 ton; 80% is vegetables, 20% is fruit). 47% of fruit for export in Vietnam (value) is processed food and most of them are exported to China and the Netherlands. Export volume of fine-tuned fruit[28] accounts for 60% of total export volume of fruit processed food for Japan, and 2,400 ton in 2007.

(3) Cost Structure of Processing

About cost structure of vegetables and fruits processed products, 72% of product price is cost for raw vegetables and fruits, and 10% is payment for workers. The cost structure is different for each product (e.g. canned pineapple: 40% of product price is cost for raw pineapples, 20% is payment for workers).

(4) Siting Situation of Private Sector and Intention of the Future

In Vietnam, the domestic market for vegetable / fruit processed foods is very small, and most of vegetables and fruits processing companies are also exporters of vegetable / fruit processed food. According to Vegetexco 1 (VEGETABLE AND FRUIT EXPORT IMPORT JOINT STOCK COMPANY NO.1), these are about 50 local companies with relatively large scale of production.

[28] Cut fruits and preserved fruit in syrup etc. Durian, rambutan, passion fruit, lychee etc.

Location of vegetable and fruit processing companies in Vietnam is as follows:

Table 4.7 Location of Major Exporting Companies and Processing Plants for Vegetables and Fruits

Province	No. of Company	Main Company Name	Main Products
Hanoi	4~5	-Vegetexco 1	-Pickle -Tomato Vinegar -Canned lychee -Canned Sweet Corn
Hung Yen	3~4	-Factory of Upexim Hanoi	
Hoa Binh	2	-Unimec	
Bac Giang	4~5	-Agrexport -Orient Vegetable Import-Export JSC.	
Binh Phuoc	1	-Factory of Vegetexco1	
Ninh Binh	3~4	-Dong Giau Food Stuff Compnay	
Thanh Hoa	3~4	-Factory of Upexim Hanoi	
Tien Giang	2	-Vegetigi	-Canned Fruit
Kien Giang	1~2	- Kiveco JSC	Frozen Fruit and Canned Fruit ; -Pineapple -Mango -Longan
Hau Giang	5~6	-Hau Giang Foodstuff Export JSC - Long My Foodstuff Export JSC	
Can Tho	2~3	-Song Hau Food Processing Company	
Ben Tre	3~4	-Ben Tre Import Export JSC	-Canned Coconuts
Tra Vinh	2~3	-Thai Bao Co., Ltd.	
Lam Dong	5~6	-Dalat Agrifoods Co. Ltd.	-Frozen Vegetable, Fruit -Dried Vegetable
Soc Trang	1~2	- SAFOCO Foodstuff JSC	-Frozen Egg Plant
Ho Chi Minh	4~5	-Vegetexco 2	-Canned Pineapple

Major vegetables / fruits processed food for domestic consumption is dried fruits sold in street market, fruit juices sold in local grocery stores, frozen vegetable and seafood hotpot for high income group or foreigners sold in supermarkets. Fruit juice, frozen vegetables, and raw vegetables for frozen seafood hotpot are mostly produced in vegetable and fruit processing companies in Dalat.

Major vegetables and fruit processed foods for export are canned vegetable / fruit. In the North, pickles, salted tomatoes, sweet corn and lychee are main canned food for export, and in the South, pineapple and mangoes. These are exported to Asian countries except Japan (Hong Kong, Taiwan and Singapore, etc.), and European countries. Top five (5) Vietnamese vegetable and fruit processing companies are shown in Table 4.8 and their total annual transaction value is around US $ 150 million.

Table 4.8 Vietnamese Vegetable and Fruit Processing Companies Top 5

Company	Annual Transaction Value
HAPRO	US$ 122 million*
VEGETEXCO VIETNAM	US$ 108 million
DOVECO	US$ 7 million
VEGETEXCO I – Hanoi	US$ 5 million
AGREXPORT Hanoi	US$ 5 million**

(*) Transaction Value including other products, not only processed vegetables and fruits

(**) Estimation

(5) Necessary Inspection for Export

Required testing of pesticide residues for export products is in two step as follows:

1st step: Products are tested by each company.

2nd step: Products are tested by governmental laboratory. After this process, Vietnam government issues certification for export product.

In case of Lam Dong province, DARD of Lam Dong sends samples to NAFIQUAD or QUATEST. DARD of Lam Dong issues export certification after the results of test by NAFIQUAD or QUATEST.

Figure 4.17 Inspection Facilities
(Left : Pesticide Kit used in Laboratory of Plant Protection Center under Provincial DARD,
Right : Northern Pesticide Control Center under MARD)

(6) Procurement of Machinery and Materials to be Necessary for Processing

In Vietnam, Japanese machineries are recognized as high quality products. In particular, the slicer, washing machine, dryer, and packaging machine made in Japan have high technical advantages. Currently, export volume of these machineries from Japan is very small, but exports to China have been rapidly increasing in recent years, thus, these machineries are promising export products for Vietnam on the condition that system for export and maintenance is improved.

Frozen vegetable producing company in Lam Dong province uses equipment shown the table below.

Table 4.9 Equipment in Frozen Vegetable Processing Company A in Lam Dong

	Procurement	Price	Number
Food Slicer	Imported from Taiwan	US$ 3,500～5,000	10
Dryer	Imported from Japan	US$ 10,000	1
Vacuum Pre-Cooler	Imported from USA	US$ 300,000	1
Vacuum Package Machine	Imported from Japan	US$ 7,500	1
Steamer	Imported from Taiwan	US$ 25,000~30,000	2
Washer	Vietnamese (NAM DUNG)	US$ 22,000～25,000	4

4.2.3 Legislative Arrangement on Food Processing

For legislative arrangement on food processing, there exists Decision No. 107/2008, which aims "At least 20% of vegetables, fruit trees, 25% of tea production in safe areas to focus production to satisfy safety requirements in the direction of good agricultural practice (VietGAP).

Decision No. 107/2008 also provided that "At least 30% of vegetable and fruit products and 40%

tea products for domestic market are required to be certified by VietGAP at raw material production stage and by Hazard Analysis and Critical Control Point (HACCP) at processing stage as effort toward conformity of strict standard of importing countries. However, VietGAP is under developing, and VietGAP applied area is quite lower than target in 2010.()

Table 4.10 VietGAP Implementing Area (2010)

Products	Implementing Models under VietGAP Area (ha)	Total Area (ha)	Implementing Models under VietGAP Area (%)
Vegetable	1,112.3859	603,275	0.18
Fruit	7,843.611	775,500	1.01
Tea	77.3779	128,100	0.06

Source) MARD Department of Crop Production

4.2.4 Logistics Network and Marketing

(1) Present Situation of Logistics Network Connecting Raw Material Production Site – Processing Site – Consumption Site

Most of the vegetable and fruit processing companies procure material from company own their farm or contracted farmers. Processing factories are located near the company own farm. In case of contracted farmers, most companies procure within distance of 100-200 kilometer radius of the production area.

Traditional logistic system is still common in Vietnam (farmers→buyers→local market). Modernized logistic system is going to be popular near urban cities. Most of vegetables cropped in Dalat are transported to Ho Chi Minh city using large trucks, and vegetables in Red River Delta region are transported to Hanoi. Export products produced in Dalat or Mekong Delta region are shipped from Ho Chi Minh port, products in Red River Delta region are shipped from Hai Phong port.

(2) Consumers' Needs at Expecting Buyer Site (Domestic and Overseas)

1) Domestic

Vietnamese people don't have custom to eat processed vegetables and fruits. They prefer to buy fresh vegetables and fruits for their freshness and nature taste. However, consumption of vegetables sold through modern distribution system such as supermarket has been increasing little by little.

According to the results of questionnaire survey conducted by JICA Survey Team, in Ho Chi Minh City reliability of the food sold in supermarkets is higher than in Hanoi. Compared to Ho Chi Minh city, number of supermarkets is smaller in Hanoi, thus, most of consumers buy fruits and vegetables in wet market and generally consumers do not trust in safety of food. Dalat is production site which is recognized as "Safety Production Site of Vegetables" by both Hanoi and Ho Chi Minh consumers. However, in Hanoi, predominant peoples tend to choose site for safe vegetable at nearby area.

For promising vegetable processed food, Frozen Pre-Packaged Seafood Hot Pot products occupy largest share in Vietnamese domestic market. (For example, 30% of total production for domestic market is pre-packed seafood hot pot by processing company in Dalat). Some Japanese food companies already are considering to sell frozen seafood hotpot pack in Vietnam.

2) Overseas

Potential processed food is i) Japanese Pickle, ii) Frozen / Dried Vegetable for export.

For Japanese pickle, demand for pickled ginger and cucumber is high and there is a Japanese pickle processing company for export to Japan. Also in Vietnam, demand for Japanese pickle is expected in Japanese convenience store, supermarket to be located in Vietnam. Export volume of salted vegetables including Japanese pickles from Vietnam to Japan is estimated to reach 5,000 ton in 2015.

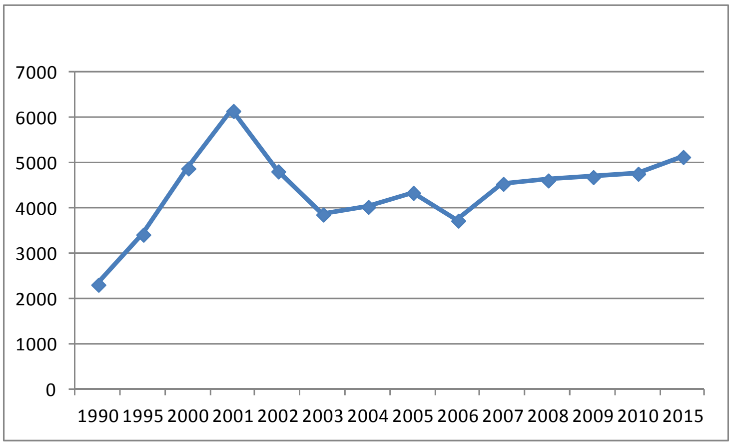


Figure 4.18 Export Volume of Salted Vegetables from Vietnam to Japan (t)

Data Source) Japan Agriculture & Livestock Industries Corporation (Estimates by the liner approximation after 2007)

About frozen vegetables for export, constrains of investment are i) difficulty in ensuring safety, ii) long-term training required for farmers to ensure quality. However, certainly there is demand in domestic market of Japan. There is an increasing demand for frozen products in China, thus, export to China is also expected.

Table 4.11 Cost Structure of Frozen Spinach

Item	Frozen Spinach (VND/kg)
Raw Materials	6,000
Processing	5,000～6,000
Package	5,000～6,000
Labor	3,000
Transportation	1,500～1,700
Price	30,000

Source) Hearing from Vietnamese Vegetable and Fruit Processing Company

In addition, the export value of frozen vegetables to Japan from Vietnam is estimated to reach US $ 8 million in 2015.

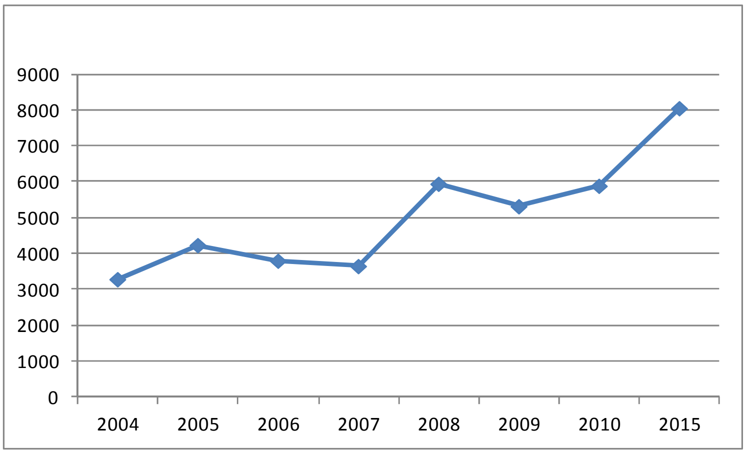


Figure 4.19 Export Value of Frozen Vegetables from Japan to Vietnam (US$ 1,000)

Data Source) World Trade Atlas (Estimates by the liner approximation after 2010)

(3) Retail Structure at Expecting Buyer Site (Domestic and Overseas)

It is the same as retail structure described in "4.1 Rice Based Processed Food".

(4) Competitiveness at Expecting Buyer Site (Domestic and Overseas)

Japanese companies have manufacturing technology of materials for hotpot such as Japanese Oden. Already, some oden packs produced in Vietnam are exported to Japan. Also, Japanese and Vietnamese have common taste in seasoning such as Ajinomoto, therefore, it is possible for Japanese companies to create a taste acceptable to Vietnamese.

For Japanese pickles, there are many business possibilities on the condition that manufacturing companies can appeal the safety of raw vegetables and salt (food manufacturers).

For frozen / dried vegetables for export, market in Japan is competitive. It is possible for frozen / dried vegetables produced in Vietnam to achieve a competitive advantage as alternative of Chinese products on the condition that price is cheaper than that of Chinese.

4.3 Fishery Based Processed Food

Promising Investment by Japanese Company :

- ✓ Catching, processing, storage and export of tuna / bonito; In 2011, Japanese JV initiated by IT giant company got the business license from Phu Yen province.
- ✓ Export of catfish: The demand in Japan has been increasing
- ✓ Operation of cold chain, cold storage, bonded warehouse: Formulation of the base of tuna catching in central region will be beneficial for logistics provider because both North/South and South/North cargo movement comes to be available, avoiding the risk of empty return haulage.
- ✓ Provision of service by authorized inspection / certification institutions: Japanese inspection entities operate in Vietnam as the authorized institution by Ministry of Health, Labour and Welfare of Japan. Their certificate is eligible to omit import physical check and can reduce the burden of import procedure.
- ✓ Manufactures of value added /frozen processed food for domestic market : Chamber of Commerce in HCM indicates that many Japanese SMEs are eager on this field.
- ✓ Sales of processing machinery: Precious filleting machine, fryer, etc.
- ✓ Practical use of sediment (applicable only for big companies): Fertilizer or feed products (assorted feed combined with rice bra), extract materials from collagen or chitosan

Major Market : European Countries, United States, Japan

4.3.1 Production

Vietnam is the top ten fishery export countries in the world. Fishery products are important commodities for Vietnam to earn foreign currency. Fishery products shares 6% of Vietnamese total exports (2009). The amount of freshwater fish farming in Vietnam is No.3 in the world, following to the Norwegian salmon and Chinese tilapia. Vietnamese catfish has become the No.1 production in the world.

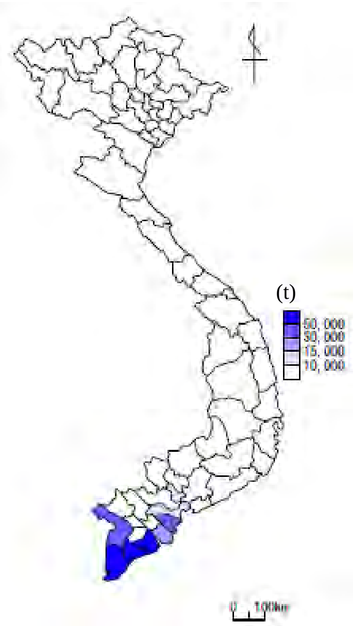


Figure 4.20 Shrimp Production

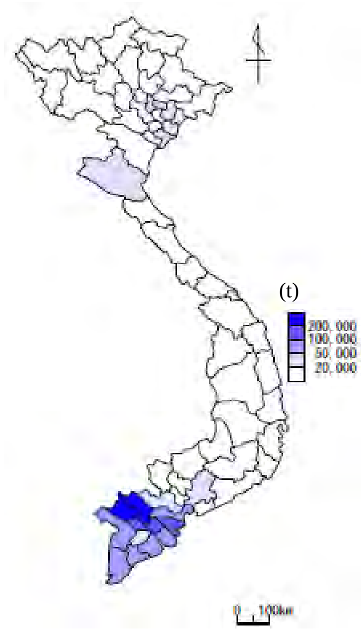


Figure 4.21 Farmed Catfish Production

Source) Statistical Yearbook (2010)

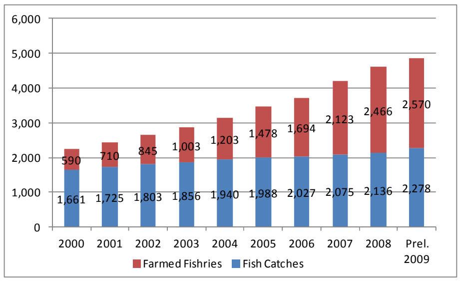


Figure 4.22 Fish Catches and Farmed Fisheries (Unit:1,000t)

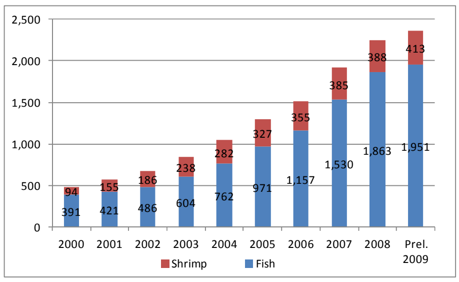


Figure 4.23 Fish and Shrimp Production (Unit:1,000t)

Main export fishery products of Vietnam are "shrimp" and "catfish". They are farmed and produced in the Mekong Delta area. Vietnam's fishery products export has a competitive advantage due to their farming cost and labor-intensive process.

The native fish in Vietnam is only limited to inshore fishing, due to their poor technique. Also, due to the tendency of overexploitation of sea water catch in recent years, reduction in fishing catch is growing concerns in Vietnam. There are high loss rate at unloading fisheries, due to the low level handling techniques of fishing and port.[29]

(1) Production of Raw Material

Although Vietnam has many kinds of fishery products, most of them are low-priced products. Also, in Vietnam, most of fishery products are produced in aquaculture farms. This is because fishing technique is poor in Vietnam. For instance, fishing boat and port are still in low level of quality, and decrease of catch due to overcatch and illegal fishing. Major fishery products for exports are shrimp and catfish produced in farms, and squid caught in the sea. MARD and other fishery related agencies intend to develop other main fishery products following shrimp and catfish, so that the expectation toward tuna is getting bigger.

For the stable development of fishery processed food, Vietnam places great importance on aquafarming for stable supply of raw materials. Most of farming area is occupied by shrimp production (nearly 20% of total in 2010). In the freshwater area of Mekong Delta region, "catfish (basa fish)" and "tilapia" are mainly produced, which occupy most of farming area. However, production amount of catfish is considered to be overwhelmingly larger than other fish.

Production of shrimp in Mekong Delta region accounts for 80% of total, most of which is produced in brackish water area in Mekong Delta. Top three provinces of shrimp production are Ca Mau (98,000 ton in 2009), Bac Lieu (65,000 ton), Soc Tran (60,000 ton), and these three provinces account for 70% of total production in Mekong Delta region.

Table 4.12 Production Area of Shrimp (Unit : ton)

	2004	2005	2006	2007	2008	Prel. 2009
Red River Delta Region	13,023	13,321	14,098	16,054	14,512	14,829
Northern Mountainous Region	123	312	355	388	294	205
Central Region	33,201	33,311	37,214	43,563	51,216	68,123
Central Mountainous Region	55	64	62	88	61	71
South East Region	12,772	14,426	15,948	14,896	15,207	17,489
Mekong Delta Region	222,643	265,761	286,837	309,531	307,070	312,415
Production in Mekong Delta	79%	81%	81%	80%	79%	76%

Source) General Statistic Office in Vietnam

Production of fish in Mekong Delta region has been increasing and accounts for 75% of total in 2009. Top three (3) provinces of fish production are An Giang (280,000 ton in 2009), Dong Thap (280,000 ton), Can Tho (190,000 ton), and these three provinces account for 60% of total production in Mekong Delta region. These provinces are freshwater area and famous for “basa” farming.

[29] Although it is needed for the ship without the refrigerator to load the ice in the port, ice making machine is small and enough ice can’t be loaded. Therefore about 30% of catch have to be disposed at the port (interview with department of aquaculture under MARD, GLOFISH2004)

Table 4.13 Production of Fish (Unit : 1,000 t)

	2004	2005	2006	2007	2008	Prel. 2009
Red River Delta Region	151,326	174,650	203,143	230,522	243,818	279,261
Northern Mountainous Region	32,199	34,595	40,042	46,617	48,590	54,857
Central Region	46,755	52,330	61,932	71,076	77,664	84,237
Central Mountainous Region	10,239	11,094	11,218	12,435	14,701	15,790
South East Region	44,671	46,248	50,579	54,352	59,531	69,236
Mekong Delta Region	476,376	652,262	790,179	1,115,253	1,419,010	1,447,673
Production in Mekong Delta	63%	67%	68%	73%	76%	74%

Source) General Statistic Office in Vietnam

Tuna is high-value added product for export. Major production provinces are Binh Dinh, Phu Yen, and Khanh Hoa province. It is estimated that export amount of tuna in 2011 is 45,000 ton, thus, present tuna catch is estimated 50,000 ton.

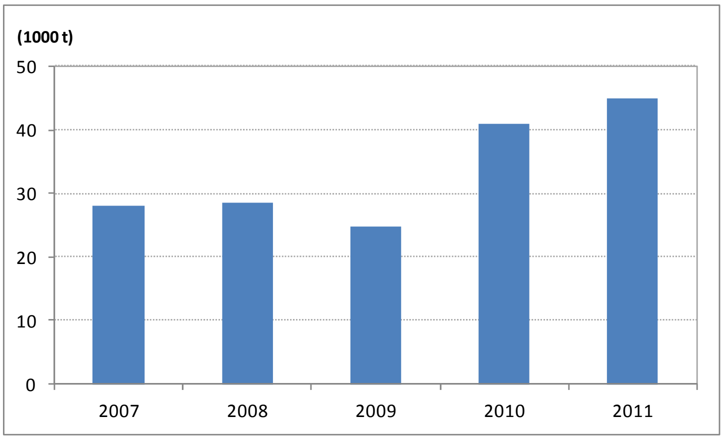


Figure 4.24 Export Amount of Tuna

Source) VASEP

(2) Production System on Raw Material

Shrimp production is considered profitable, thus, expansion of shrimp farming area has been underway through conversion of arable land, and clearing mangroves, etc. "Extensive" farming which is utilizing natural environment of the Mekong Delta is mainly conducted by individuals and small companies. Also, some farmers engage in traditional rice cum shrimp production. Merit of extensive farming is saving cost for pond construction and operation, and demerit is low productivity because shrimp are vulnerable to disease. On the other hand, catfish can be farmed in higher density than shrimp[30].

Most of farmers are small-scale and dispersed, thus it is difficult for them to get information on fertilizer, chemicals, safety of inputs and market needs. Each extensive farming area is linked by canal, thus, risk of disease transmission is high. Such risk can be managed by cooperative production, but, cooperative farming is few in Vietnam.

There can be seen "vertical integration" (fishery processing companies or retailers of fishery products run their own farm) in Vietnam. Some leading companies are oriented towards vertical integration, and running their own farm.

[30] The export price of shrimp and catfish are US $ 9-10 per kg and US $ 3 per kg, respectively. The former is about three times higher than latter.

Shrimp Farming in Soc Trang province
Shrimp is farmed while keeping natural environment. Expansion of areas are sought for through conversion of rice production.

Catfish Farming in Mekong River in Can Tho province
This farm is owned by catfish processors, who try to keep good environment in pond.

Figure 4.25 Current Situation of Farming Area

During the three months of flood period a year, ponds water is replaced in Mekong Delta region. Growth period for both shrimp and catfish is about three months and double round farming is general though it is not advisable.

In many cases, tuna is caught by individuals and sold to major exporters, most of which are Vietnamese capitals and foreign investment was restricted so far. Major exporters contract with fisherman and buy tuna directly. They are concentrated in the South.

(3) Cost Structure of Raw Materials

In case of extensive farming of shrimp, annual net income is US$1,040~US$1,950/ha. Cost of raw materials accounts for 40 ~ 60% of sales and most of raw material cost is for feed (almost 70%). Net income of shrimp production is equal to or twice of rice production. If the disease does not occur, shrimp production would be more profitable than rice production.

For tuna, productivity is still low due to small fishing boats, traditional fishing and unsanitary treatment.

4.3.2 Processing

(1) Present Situation of Production Technique, Quality Control, and Traceability

Major fishery processed foods are frozen fillets (low degree of processing). Rate of Value-Added Products subtracted through processed products (HS code 1605) divided by semi-processed products (HS code 3) is high for tuna, and relatively high for shrimp such as fried shrimp for Japan. For catfish, fillets are also major, thus, the rate of value-added products is low. In Vietnamese fishery processing, low-priced products based on low cost of labor are competitive.

Table 4.14 Value-Added Products in Commodity-Base (Unit: US$ million)

	HS3	HS1605	HS1605/HS3
Shrimp	1593	514	32%
Tra	1417	10	1%
Squid/octopus	400	88	22%
Tuna	175	117	67%

The processing industries have been paying attention to the food hygiene and safety standard like GAP, HACCP and so on. As the result, fishery processing industry is the main export industry in Vietnam. At present, the number of companies which have export license for EU is larger than that of Japan[31].

Vietnamese catfish was included in the WWF's red list of and EU worried about safety of catfish for export. Japan sees safety of shrimp as a problem and increased the number of samples for inspection. Unfortunately, most of importing countries recognize that quality and sanitary standards of Vietnamese fishery products still remain in poor level. Vietnamese processing industry regards this undesirable situation as the result from the material producing side, which is lacking the ability to keep the sanitary/safety standard.

In order to secure the safety and improve quality[32], large-scale processing companies started a vertical integration ranging from farming process to processing.

There seems to have no problem on sanitary such as workers' wear, cleaning, drainage etc., The number of workers seems large (that would be labor-intensive industry).

Box 4：
In basa fish Processing Company X which prohibits photos (the largest export company in 2010), sanitary and cleanness in factory are well-managed. Approximately half of the labors are focusing on removing skin and fat. The companies are finding the way to recycle the by-products, and it comes to be a essential issue. In spite of oily fat, the floor is not slippery because it is cleaned frequently. Since cleaning and sanitary process are frequently conducted, the smell is not so hard except landing area for material fish.

Figure 4.26 Shrimp Processing Plants
(Fifth Largest Export Value of Shrimp in 2010 among Vietnamese Companies)

According to the processors, the yield of edible parts of catfish is 35 ~ 40 %, thus, treatment of processing residue became a major issue. Some companies attempted to produce edible oils from processing residue of catfish; however, they are not acceptable to consumers because of the peculiar smell. The head and bones are processed for fertilizer and feed[33]. Vietnam doesn't have waste processing plant like Thailand. Shrimp, shells are discarded[34], which is the problem of pollution[35].

[31] Vietnamese fishery processing companies think that it is very difficult to correspond with strict import regulations of Japan. Some companies are changing market destination from Japan to EU.
[32] In conventional material procurement, it is common that broker purchases the catch from the farmers and resell to the processing companies. In Vietnam, it is difficult for securing the traceability because most of the fisherfolks are small-scaled.
[33] Some Japanese major trading companies have already been producing high quality feed which was mixture of shrimp residue and rice bran.
[34] These residues are discarded with bury in the soil.
[35] Vietnam has urged Japan to provide the technology for the reuse residues of fishery products. However, it is necessary companies which have technologies about extraction collagen from the catfish or chitosan of shrimp, to sell their products to the post-production market. Thus, it will be difficult for them to advance individually in Vietnam. It requires a comprehensive supply chain available in the vicinity of their plant for collagen and chitosan products. Some major

(2) Major Market

For Shrimp, total production is 400,000 ton, out of which 160,000 ton is for export. For catfish, total production is 1,500,000 ton, out of which 600,000 ton is for export. Major market of shrimp was Japan, but its share dropped in recent years, and outnumbered by United States. Consumers in Japan prefer Black Tiger, and Banamei in the United States. Major market of catfish is EU, but the shares dropped in 2010 due to safety problem. However, the number of countries for export is increasing, and 5 % of total was exported to Egypt in 2010. Major market of squid and octopus is Japan, EU and South Korea. Most of tuna is exported to the United States. Vietnamese tuna has less fat, which is not suitable for Japanese tastes.

Table 4.15 Major Fishery Products for Export (Unit : US$ million)

	Shrimp	Catfish	Tuna	Squid and Octopus
2005	1,372	328	81	81
2006	1,461	737	117	117
2007	1,509	979	151	151
2008				
2009	1,699	1,357	183	425
2010	2,107	1,428	293	488

Source) VASEP

(3) Cost Structure of Processing

According to interviews with fishery processing companies, cost structure of catfish and shrimp is almost the same and material costs accounts for about 70% of total production costs. For sales price, shrimp is US $ 9-10/kg and catfish is US $ 3/kg, and shrimp is three times higher than catfish.

Box 5 : Interview with Fishery Processing Companies

・Catfish Processing Company A : Largest export company of catfish in 2010
The ratio of material cost to processing cost is 7:3, and feed cost accounts for 75% of material cost and labor cost is 5% and depreciation of machinery is 3%. However, there were many workers in the factory and percentage of labor costs (5%) seemed to be inaccurate. Seemingly, 50% of workers have been engaged in removing oil and skin. About 20-30% is processed as catfish fillet and most of the rest is oil.

・Catfish Processing Company B : Third largest exporter of catfish in 2010
The ratio of material cost to processing cost is from 6.5:3.5 to 7:3. This ratio depends on the season, and Company B procured raw materials also from outside because production in owned farms was not enough during high season. Most of the processing costs are labor costs, electricity fee, water fee, and the operation cost of machineries. Company B didn't think that processing costs was heavy burden. They felt that transportation cost to Europe was rather expensive.

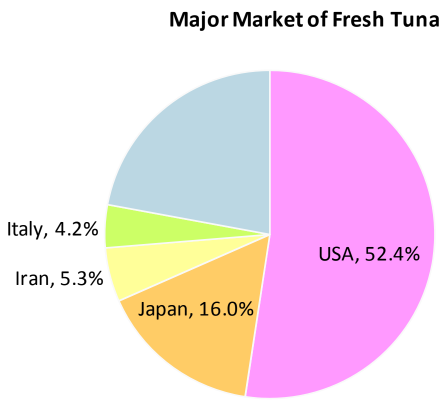
・Shrimp Processing Company A : Fifth largest exporter of shrimp in 2010
Material cost accounts for 80% of production cost of frozen shrimp and remaining 20% for processing. 50% of processing cost is labor cost. In case of high-degree processed food like fried shrimp, material costs account for 60~70% of total production cost. Processing cost includes electricity fees and water fees. Also transportation fees are levied to the Company.

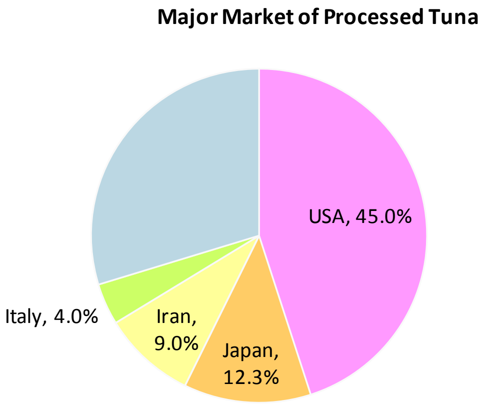
For tuna processing, export volume of processed tuna is approximately the same as that of fresh tuna, and most of fresh tuna seems to be processed into canned food etc. On the condition processed tuna weighs 60% of fresh tuna, it is estimated that about 35,000 tons of tuna is supplied for processing. Though processing cost is said to account for 40 % of sales in developed countries, raw material cost is cheaper in Vietnam, thus, processing cost is estimated at 30 % of sales.

conglomerates are expected for advance in this field.

Table 4.16 Production Amount and Value of Fresh / Processed Tuna for Export and Main Market in 2011

Fresh Tuna Amount (ton)	Value (US$ million)	Processed Tuna Amount (ton)	Value (US$ million)
23,739	140,674	21,100	65,795





(4) Quantity and Quality of Labor Force

Fish processing industry is labor-intensive, thus it is expected to create job for large population of poor people in coastal areas. Considering that monthly wage of manufacturing is lower than that of primary industry, expectedly it becomes difficult to secure adequate number of employees in the future. In Mekong Delta region, no companies interviewed pointed out the problems on the quality and quantity of labor, however, education level of labor is lower compared with other regions. Accordingly, education for workers is required. In addition, shortage of human resources for managerial post has become a common problem in food processing industry.

(5) Siting Situation of Private Sector and Intention of the Future

Fishery processing companies are concentrated in the southern Mekong Delta or around Ho Chi Minh city, which is close to raw material production area. Currently, 289 companies are members of Vietnam Association of Seafood Exporters and Producers (VASEP), and most of them are located in the areas mentioned above. From macro-economic viewpoints, relatively, Vietnamese fishery sector has been privatized and 13 fisheries companies are listed on Ho Chi Minh Stock Exchange out of 173, though only one (1) is listed on Hanoi Stock Exchange out of 168. Thus, in fisheries sector, companies have relatively adequate capital and can invest in infrastructure and other fields without government support.

For Japanese companies dealing fishery commodities, only a few companies are located in central and southern region. Most of Japanese companies are engaged in export of shrimp and catfish through consignment production by Vietnamese companies and mostly Japanese staff is in charge of safety checks. At present, it is difficult for Japanese companies to invest in production / processing fields in Vietnam and proceed to vertical integration because of unstable raw material supplies. Recently, more and more Japanese SMEs are seeking business opportunities in Vietnam due to the decline in demand in Japan and flood damage in Thailand. Although most of them are fishery processing companies, their willingness to invest in the north and central is not yet strong. Thus, southern regions become main target area for investment for the time being[36].

[36] Vietnam government hopes to attract such investment in Nha Trang or other cities to promote central Vietnam. There are two Japanese food companies using raw squid, one is in Nha Trang, other is in Da Nang.

(6) Necessary Inspection for Export

Vietnamese government is promoting the export of fishery products, but export inspection is typically conducted in accordance with the standards of importing countries. Since many Vietnamese fishery commodities are suspended in the inspection of importing countries, lack of inspection institute and technical problem of analytical methods are pointed out as issues.

(7) Procurement of Machinery and Materials to be needed for Processing

Most of Vietnamese fishery processed foods are low degree processed food, thus, human processing is more preferable for maintaining competitiveness, rather than processing by machinery. In three Vietnamese companies interviewed, there were foreign–manufactured equipment (EU, Japan), and there were no equipment made in China or Vietnam. For Japan-made equipment, freezers represented as Individual Quick Frozen (IQF) Freezers are popular, and their quality, maintenance and aftercare service were highly appreciated by Vietnamese companies. Vietnamese companies seek to enhance value-added products, thus, they have interest in introduction of high-quality equipment.

Table 4.17 Equipment List of Major Companies

Ordinary No	Name of Equipments	Quantity (unit)	Capacity	Origin
1	IQF Freezers	16	500 kg/hour	Japan
2	Contact Freezers	8	970 kg/hour	England
3	Cold Storages	3	Storing for 23,000 tons	Italy
4	Screw Compressors	26	4,800 kW/hour (counting for total 18 machines)	Japan
5	Flake-ice Machine	4	50 tons/day	France
6	Processing Waste Water System	1	1,500 m³/day	The USA
7	Sorting Machines	20	1,200 kg/hour	Belgium
8	Skinning Machines	20	1,200 kg/hour	Belgium
9	Vacuum Packing Machines	10	500 kg/hour	The USA
10	Carton Packing Machines	34	4,800 kg/hour	Japan
11	Management Productivity Systems	4	120 metric tons/day	Iceland
12	Shrink Wrapper	12		EU
13	Cooling Water Systems	6	20 m³	EU
14	Generators	2	1,500 KVA	EU
15	Automatic Flleting Lines	20 rows of table		EU & Vietnam
16	Automatic Trimming Lines	20 rows of table		EU & Vietnam
17	Ipura Antivirus System	2	500 kg/h	USA
18	Bowl Cutter	1	1000 kg/h	Australia
19	Sausage Stuffing Machine	1	500 kg/h	Australia
20	Clipping Machine	1	1000 kg/h	Germany
21	Cooking Chambers	2	504 kg/h	Czech
22	Ham Boiling Kettles	2	1000 kg/h	Czech
23	Tray Sealers	2	1000 kg/h	Germany
24	Forming Machines	2	1500 kg/h	USA
25	Fish Ball Former	1	500 kg/h	Taiwan
26	Coating and Frying Lines	2	1200 kg/h	Australia
27	Metal Detectors	2	2000 kg/h	Japan
28	Massage System - Cool	1		EU
29	Mixing Machine	1		Australia
30	Hydro - Extractor	1		Taiwan
31	Automatic Sealing Machines	2		Italia

Source) Vietnamese Big Companies' Brochure

4.3.3 Legislative Arrangement on Food Processing

For fishery processed food in Vietnam, in addition to Vietnamese standards (TCVN) for products itself, the standard / law is levied on hatcheries, fish farms, feed, and chemicals. Further, laws and standards for carrying out drug use such as antibiotics and pesticides, and banned drugs are prescribed in detail.

Adverse impacts on environment are seen as the problem on farming aquaculture production. Therefore, development of new shrimp ponds by mangrove clearing are prohibited by law at present, thus, it is difficult for foreign companies to penetrate in shrimp farming. It is observed that freshwater farming land is still on increase, but shrimp farming land was peaked in 2007. Department of Aquaculture under MARD has stated a policy that they no longer develop shrimp farming area.

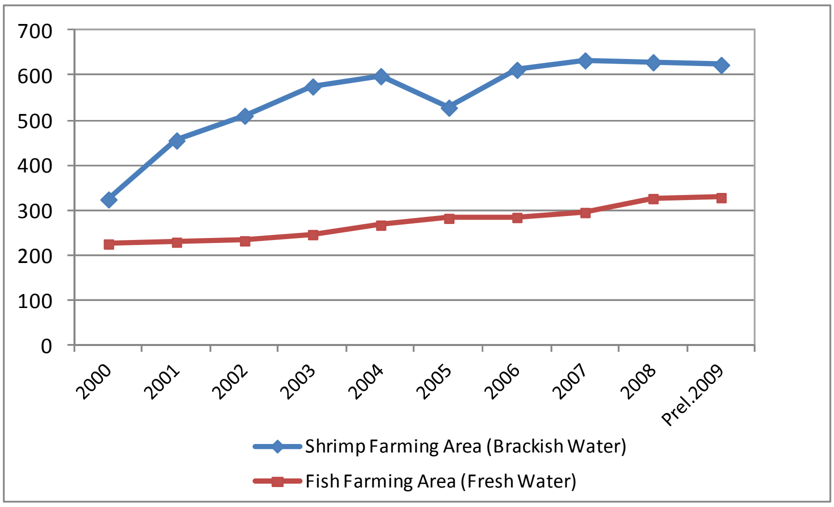


Figure 4.27 Farming Area (Unit : 1,000 ha)

Source) General Statistics Office in Vietnam

4.3.4 Logistics Network and Marketing

(1) Present Situation of Logistics Network Connecting Raw Material Production Site – Processing Site – Consumption Site

Raw materials of fishery products used to be transported by boat on river. At present, road construction progressed, but, still some communes don't have access road, thus, transport by boat on river is still major in these areas. Especially for freshwater fish, processing plants are located along the river, and the materials are transported from farms by boat on river and put into material inlet of the plants.

Basa fishes are normally carried to factories by boat on river but not by trucks because processing factories are normally located at riverside.

In the case of shrimp, wholesalers visit small-scaled farmers using their own truck and collect the shrimp on cash-on-delivery (COD) basis. Payment is carried out when picking up shrimp.

The access road is narrow. Load limit of the bridge is 10-13 t, so it is difficult to use large sized trucks

Figure 4.28 Shrimp Delivery to Processing Factory in Soc Trang province

It takes about eight (8) hours for transportation from Ca Mau to Ho Chi Minh city by truck. The most efficient method of transportation is containerized transportation. However, poor load-bearing bridges prevent containerized transportation. Thus, most of companies rely on truck transport[37].

According to the field survey, especially bridges located between Ca Mau and Bac Lieu have low capacity with the load limitation under 20 ton, which makes it difficult for heavy vehicles (which weigh over 20 t in general) to transport containers.

Table 4.18 Low Capacity Bridges in National Road No.1

Section	Number of Low Capacity Bridges and their Load Limitation			
Tan Hiep - Vihn Long	20 ton	1	23 ton	1
	22 ton	1	25 ton	3
Within Vihn Long	None			
Bac Lieu - Ca Mau	16 ton	1	18 ton	2
Soc Trang	10 ton	1 (however, new bridges is under construction neaby)		

Source) Visual Confirmation by JICA Survey Team

(2) Consumers' Needs at Expecting Buyer Site (Domestic and Overseas)

1) Domestic

In the domestic market of Vietnam, consumers prefer "river fish" rather than "sea fish". In addition, people in Vietnam don't have custom to eat frozen food and they prefer to buy fresh fishery products produced nearby. This tendency is remarkable especially in Hanoi. Some Japanese businesses are eyeing the opportunity of healthy fiehry processed food such as "frozen seafood hotpot package" on the background of growing popularity of sushi. However, development of cold chain is essential for distribution of frozen fishery commodities. Most of companies are considering new market such as Japanese supermarket to be located in Ho Chi Minh city. Therefore, cold chain development will be progressed in this area near in the future[38].

2) Overseas

In foreign markets, demand for fishery commodities is expected to grow. Needs for catfish and

[37] Not only the reasons the bad road condition but the cargo owner use the truck a lot because of the lack of the cold storage.
[38] In Vietnam, the cold storage warehouses of foreign capitals are already operated. Moreover, it is expected to construct the cold storage warehouses by state-owned enterprises.

shrimp, which are major export items of Vietnam, are considered increase firmly in the future. In particular, demand for white fish is growing worldwide, especially in Korea and China. Accordingly, the needs for catfish as processed white fish raw material are considered to be growing in other Asian countries. However, in Japan, there are few demands for "river fish" and most of Japanese consumers don’t want to buy products named "catfish". However, some trading companies are considering the possibility of using catfish as fried fish material for lunch box or school lunch etc.

For Vietnamese shrimp processed products for export, market is competitive because of low degree of processing. In addition to the traditional competitor like Thailand and Indonesia, there are new competitors such as India, and Myanmar. Therefore, it will be difficult for Vietnam to maintain current market share in the future unless it ensures the safety and stable volume of exports.

For tuna, some Japanese companies penetrated in the past, however, most of which have already withdrawn, because it is difficult to ensure quality of products due to small-scale fishing, low price variety, and limited fishing season. Actually, brand of tuna from Vietnam is not popular in Japan.

European countries consume two-third of white fish produced in the world. For shrimp, Asian countries consume more than half of production of total production in the world.

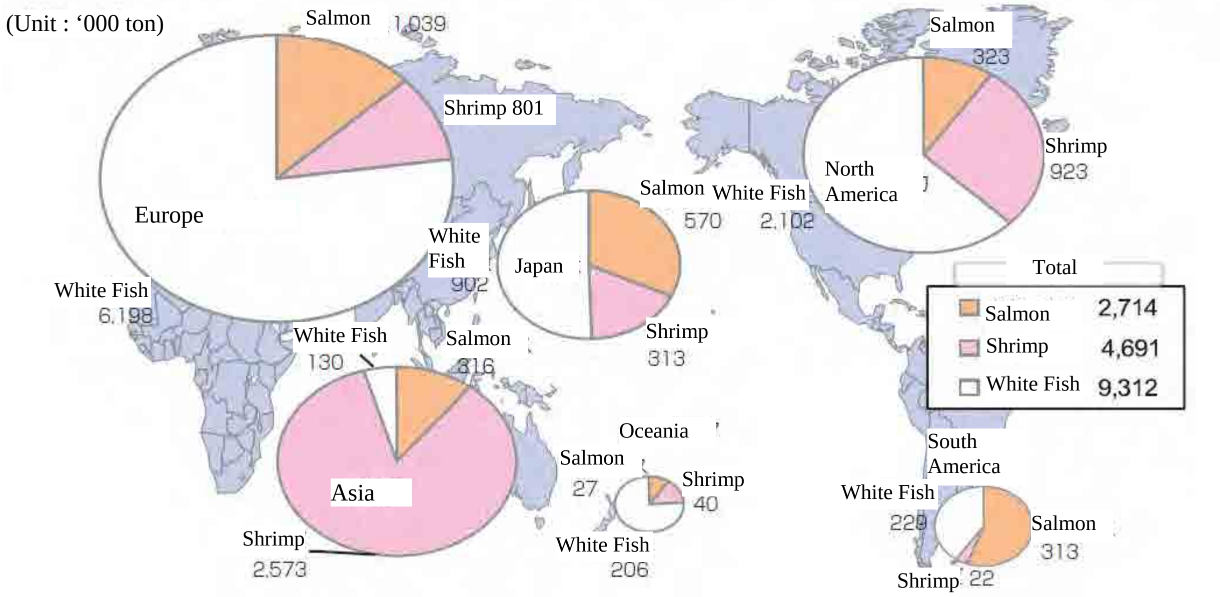


Figure 4.29 Consumption of Fishery Commodities

Source) Nippon Suisan Kaisha, Ltd.

(3) Retail Structure at Expecting Buyer Site (Domestic and Overseas)

It is same as retail structure described in “4.1 Rice Based Processed Food” and “4.2 Vegetable Based Processed Food”. Retailers dealing fishery processed product should be equipped with freezer, however, generally, traditional retailers procure fresh fishery commodities in the morning and sell them before noon, thus, they usually don’t have freezer[39].

There is "rule of thumb" that when GDP per capita exceeds US $ 3,000, more and more household buy refrigerators and they seek frozen foods which require cold chain. At present, Ho Chi Minh city seemed to reach at this stage. However, the cold chain in the north and central area is still in the planning stage. Accordingly, for the time being, it is difficult for Vietnamese companies to sell processed goods of the south in the north, which require establishment of cold-chain.

[39]During this survey, the dissolved frozen foods were often seen in retail stores of Vietnam. According to representatives of Japanese companies, there is taste deterioration of frozen foods which are sold in Vietnam by repeated freezing and thawing.

(4) Competitiveness at Expecting Buyer Site (Domestic and Overseas)

Farmed shrimp is easily affected by international market prices. Export volume of farmed shrimp is small in developed countries, and, hurdle for import of farmed shrimp is low in developed countries. On the other hand, the production and processing is largely connecting to human technology. It is possible that more and more developing countries become competitor of farmed shrimp export. Vietnam also used to export farmed shrimp with competitiveness in costs and farming conditions, however, is likely to be caught up by other countries such as Indonesia, Myanmar and India,. Therefore, in order to survive in the global market in the future, Vietnam needs to increase the production of value-added commodities and maintain the sustainability of production and sales[40]. At present, Vietnam's shrimp do not receive worldwide reputation as high quality product because of product safety. Shrimp is farmed with a lot of antibiotics, and mostly produced through extensive farming which accrelates diffusion of antibiotics in farms.

Demands for catfish are high worldwide, in Europe, United States, Middle East and Africa. Catfish is white fish and easy to cook, thus, possibly become raw material of nutritious food for children and the elderly, fish burger for young and paste for all generations. In Japan, however, people don’t want to buy products named “catfish”, thus, product development is essential for retailers and food service companies.

It is considered that the fields of processing and export of shrimp and catfish can develop without government support because major companies dealing shrimp / catfish are fund-raising capacity.

For tuna with a potential as third major export, accurate potential and catches are not confirmed at national level. VASEP reported in 2010 that 50,000 tons of tuna was caught mainly in the provinces around the central region.

[40] Shrimp materials used for snack food are necessary to leave the flavor with quick freezing. These materials are currently imported from Northern Europe with quick freezing facilities. Vietnamese shrimp is inferior in taste, thus it is thought as low-cost mass production products. (According to the Japanese import companies)

Box 6 : Tuna Catches

- Department of Aquaculture under MARD has statical data on total production of fishery commodities, but don't have data on production of each item except shrimp.
- In province level, data on tuna catches was collected.
- ALMRV (Assessment of Living Marine Resouce of Vietnam) conducted survey on tuna catches by boat type in province level, and estimated national tuna catches.
- WCPFC (Western and Central Pacific Fisheries Commission) conducted survey for VTFDC-1 (Vietnam Tuna Fishery Data Collection (2005)) and provided following data;

- Tuna Catches by Boat Type

Boat Type	Boat	Estimated Catches (ton)
Encircling Net	650 boats x 100 ton	6,500
Small Boulter	1,500 boats x 10 ton	15,000
Big Boulter	40 boats x 100 ton	4,000
Gillnet	1,500 boats x 10 ton	7,000
Others		~1,000
Total		~42,500

- Tuna Catches by Province

Province		Estimated Catches (ton)
Binh Dinh	Encircling Net :5,000 ton Boulter : 5,000 ton	10,000
Phu Yen	Small Boulter : 4,150 ton	8,000
Khanh Hoa	Boulter : 5,000 ton Gillnet : 4,000 ton	10,000
Others		10,000
Small Fish Boat		38,000
Big Fish Boat		4,000
Total		42,000

- VTFDC-2 (Vietnam Tuna Fishery Data Collection) was conducted in 2010, and it is estimated that tuna catch in three provinces in central region are 35,000 ton and total catch is about 50,000 ton.

- Tuna Catches in 2010

Province	Details	Estimated Catches (ton)
Binh Dinh	Boulter : 3,430 ton Encircling Net :7,500 ton Gillnet : 1,200 ton	12,130
Phu Yen	Boulter : 4,500 ton Encircling Net :5,000 ton Gillnet : 6,000 ton	15,500
Khanh Hoa	Boulter : 4,500 ton Encircling Net :5,000 ton Gillnet : 6,000 ton	7,600
Sub-Total		35,230
Ba Ria Vung Tau	Boulter : 4,500 ton Encircling Net :5,000 ton	5,000
North of Central Region	-	6,000
South of Central Region	-	3,000
Total		49,230

- Boulter equipped with the current Vietnamese fish boats cannot reach deeper than 20m below the surface, thus, it is impossible to catch big-scale Yellowfin Tuna and Bigete Tuna living more than 50m below the surface, which can be sold at high price.

4.4 Livestock Based Processed Food

Promising Investment by Japanese Company :

- ✓ Supply of feed(by big capitalist):Trigger of vertical integration
- ✓ Consistent business from fattening~slaughterting~proccessing: Aiming at stabilization of product quality, safety of raw materials, and cost efficiency (possibly by big traing companies).
- ✓ Construction of livestock and agriculture procceing industrial park: Promising in the northern Vietnam and Dong Nai Province with rich potential of pig.
- ✓ Production of ham and sausage for domestic market: A big potential to penetrate market (hotel and restaurant, supermarket etc.). Market penetration by joint venture of manufacturer and trading company will increase.

Major Market : Domestic market of Vietnam, Hong Kong

Pork is the vast majority of livestock in production and consumption in Vietnam. Japanese companies have shown invest for the pork and feed in recent years. According to the major trading companies; "The most promising investment in the food sector in Vietnam is livestock. Particularly, we are paying attention to the pork and its related area. Also, chicken is higher efficiency for feeding[41]. Therefore we believe that it must also increase the consumption of poultry as well as pork in the future, and we are looking into poultry production in Vietnam."

In this Survey, the possibilities of Japanese investment for dairy products were examined. As a result, it was judged that it is difficult to invest this field in Vietnam for the foreseeable future[42]. Thus, pork is thought as the promising product in livestock field in Vietnam. However, the processing technology is poor, Japanese investment is necessary. In this report, we discuss about pork and pork processed product representing livestock products.

4.4.1 Production

(1) Production of Raw Material

Livestock production in Vietnam is growing after 1990, and livestock population was doubled in all kind of animals in 10 years.

Table 4.19 Livestock Population (Unit: million heads)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Buffaloes, Cattles	7,025	6,708	6,877	7,229	7,778	8,463	9,432	9,721	9,235	8,990	8,830
Pigs	20,194	21,800	23,170	24,885	26,144	27,435	26,855	26,561	26,702	27,628	27,373
Horses	127	113	111	113	111	111	87	104	121	102	93
Goats, Sheep	544	572	622	780	1,023	1,314	1,525	1,778	1,483	1,375	1,289
Poultry	196,100	218,100	233,300	254,600	218,200	219,900	214,600	226,000	248,300	280,200	300,500

Source) Statistical Yearbook 2010

Pig is most the popularly used livestock for processed product in Vietnam. In 2010, production of pork reached to 300 million ton or 75% of total meat production in Vietnam.

41 The price of chicken is high for the reason of small production scale. (Japanese livestock processing company)

42 Reasons are (1) national company is given favorable treatment, (2) manufacturers understand that popular Japanese-brand-powder milk add a value because it is produced outside Vietnam and (3) vertical integration is one of the criteria to have high market share

Table 4.20 Production of Livestock Processed Products

					Unit : t
	2005	2007	2008	2009	2010
Buffalo	59.8	67.5	71.5	79.0	84.1
Cattles	142.1	206.1	226.7	263.4	278.9
Pigs	2,288.3	2,662.7	2,782.8	3,035.9	3,036.4
Poultry	321.9	358.8	448.2	528.5	621.1
Milk	197.7	234.4	262.1	278.2	306.7
Eggs (Million)	3,949	4,466	4,938	5,465	6,367
Honey (Mt)	13.6	15.7	10.0	11.5	12.0
Source) Statistical Yearbook 2010					

The major pig raising sites are; Ha Noi, Nghe An, and Bac Giang. It is observed that northern provinces generally have bigger population of pigs than southern provinces. Annual per capita consumption of meat is around 40 kg, which has increased by 230 % for pork and by 270 % for beef, respectively during the period of 2000-2009.

(2) Production Systems on Raw Material

Following four (4) type of pig farming is seen in Vietnam.

The first is the state farms; share of production is 4 to 5%. State Farm has played an important role in breeding and technology transferring. The second is private commercial farm production, share is at 15 % and this type is major in the provinces around Ho Chi Minh city. One commercial farm has 5~100 gilts for breeding and 10~500 pigs for fattening. The third is small-scale farmers' production, share is 80%. One farmer has 1~2 gilts for breeding and less than 10 pigs for fattening. The fourth is integration farming and was developed recently. In many cases, foreign capital was invested in integration farming and each has 2~ 20,000 heads, scale of farming is expanding.

(3) Cost Structure of Raw Materials

Cost of feed shares big proportion of pig production, 60 ~ 70%[43]. Cost of feed is higher compared to neighbor countries, and affects rather high international price of pork produced in Vietnam. In Japan, pig production cost per head is about US$ 355 (2009), out of which, cost of feed is about US$ 265, or 75 % of production cost[44].

Feed cost ratio in Vietnam was confirmed by field studies by the Japanese researchers[45]. Necessary cost of feed is tabled below.

Table 4.21 Comparison of Pig Production Costs in Rural Area and in Urban Area

Item	Rural Area (VND)	Urban Area (VND)
Piglet Price	200,000	500,000
Rearing Facilities	0	56,250
Cost of Feeds	693,000	562,800
Labor Cost[1]	300,000	135,000
Sub-Total	1,193,000	1,254,050
Slaughtering[2]	1,250,000	1,400,000
Net Income	57,000	145,950
Source) Agricultural and Marine Products Exporting Company		
1: Rural Area (1,000*300 days)、Urban Area (1,000*135 days)		
2: Rural Area (12,500×100kg)、Urban Area (14,000×100kg)		

43 Kono, Hosono, Ito; " Trends in forage industry", 2008, Study of Animal Husbandry 62-3, pp 381-385
44 National average of statistics of the production cost of fattened pig from the Ministry of Agriculture, Forestry and Fisheries of Japan Production Cost.
45 Shinobu Yoshihara, "Pig Farming Condition in Mekong Delta in Vietnam", All about swine, 13, pp17-25

4.4.2 Processing

(1) Present Situation of Production Technique, Quality Control, and Traceability

Approximately, 17,000 public/private slaughter houses exist in Vietnam, but still slaughtering is often conducted at home or on the street. According to the research in Hue, more than 10 times of bacterial contamination compared to Japan's slaughter house was found.

Quality control and traceability is the weak point of the food safety in Vietnam. However, livestock was locally produced and consumed in Vietnam traditionally, it has not been considered as a problem by local people even the meat is slightly unclean.

There are many researches about the safety of meat in Vietnam, and papers were published. According to the paper "Incentive and hygiene inspection policy on Meat Hygiene Management in Vietnam (*in Japanese*) [46]", which was published in March 2011, it was observed the microbial contamination of more than 10 times in Japan from carcasses of pigs according to the result of an epidemiological survey in the slaughter houses in Hue. This result means that the most advanced regions in the maintenance of slaughter houses in Vietnam, there are technical problems about slaughtering. In this paper, it has been estimated to increase the number of live bacteria, with considering the temperature and time to carry the meat by motorbikes which do not have the freezing facilities from slaughter houses to retail stores.

Box 7:

Table 4.22 Number of Live Bacteria on Slaughtered Pork at Huế

Unit：cfu/c㎡

	Part of Meat	Average
H-slaughter house	Intestine Side	4,660※
	Body Surface Side	8,200※※
F-slaughter house	Intestine Side	5,798
	Body Surface Side	9,565

Source）Kono and Hosono, 2011, "Incentives and Monitoring System on Meat Hygiene Management in Vietnam", Development Research, pp30-37

Number of live bacteria produced at H-slaughter house is at 4,600cfu/cm^2 on intestine side and 8,200cfu/cm^2 on body surface side, respectively, and these were less than F-slaughter house, which seems to be more dirty than H-slaughter. One of the reasons why body surface side has more bacteria than intestine side is that the pork meat is put body surface side down to the ground.

In Japan, the hygiene information on many slaughter houses is disclosed in public. The 2007 survey at 158 slaughter houses nationwide by Ministry of Health, Labour and Welfare showed that number of average live bacteria at breast and area around the anus was 352cfu/cm^2 and 172cfu/cm^2, respectively.

*cfu means "colony forming unit", which is a measure of viable bacterial or fungal numbers. The results are given as CFU/mL (colony-forming units per milliliter).

In Japan, meat hygiene laboratories of each prefecture inspect the number of live bacteria on meat. Test results can be easily viewed through the internet and other methods. On the other hand, such kind of test results are undisclosed in Vietnam. Thus consumers can not grasp the situation of microbial contamination of meat.

[46] Hiroichi Konom Hiromi Hosono, Development Studies vol 21, No3, 2011, pp 30-37

In slaughter houses in Vietnam, veterinarians stamp on the carcass as proof of slaughter inspection. For consumers, this stamp is the proof for food security of pork. This stamp is relatively functional as government's certification of food safety.

(2) Major Market

Though demand for meat and dairy products was increasing, shipment of them still remains in a narrow range. Generally, middlemen in each commune sell pig / chicken they procured in local area to another middlemen doing business in broader area. For pork, detail was described in "4.4.4 Logistics network and Marketing".

Due to foot and mouth disease, the amount is small and unstable for export, as far as the performance of the past six years. More than 80%[47] of the total export volume is for Hong Kong, followed by Malaysia, and China.

(3) Cost Structure of Processing

Meat processing cost is roughly as follows. This is based on a survey in Dalat, Lam Dong province.

i) Transportation Cost from Farmers' House to Slaughter Houses	5,000 VND
ii) Slaughtering	Pig 7,000 VND, Cattle 12,000 VND
iii) Veterinary Inspection[48]	10,000 VND
iv) Transportation from Slaughter Houses to Dalat city	8,000 VND

*Cost per Head

Figure 4.30 Slaughter House in Dalat city

(4) Siting Situation of Private Sector and Intention of the Future

Leading companies for livestock in Vietnam are VISSAN (state owned enterprise), CP Corporation (major company from Thailand), and so on[49]. (See Table 5.1)

[47] The amount of the actual export of the meats was 1.3 million ton in 2009.

[48] 90% of inspection fees by the veterinarian shall be the income of the veterinarian office in District and be used for employment of the veterinarian and operation and maintenance fee. The rest 10% shall be the income for the central government.

[49] Although region of distribution of pork is limited to a small area because of few refrigerating installation, it seems that the wider region of distribution of processed pork, the more degree of processing such as ham or sausage. For example, associated company of CP Co. Ltd, the biggest company in Thailand, runs hog farm in the suburb of Ho Chi Min city and distribute pork meat to retail sale mainly supermarket in the town, however, distribution area is limited.

Vietnamese meat is not branded, and Japanese companies do not locate now. There are a number of small pork processing companies for each region, and they supply the meat to local retailers. In addition, various forms can be seen in livestock sector; horizontal integration by feed companies, capital investment by Japanese trading company (feed, food processing and logistics) for vertical integration.

There are joint ventures of Japanese trading companies and Japanese meat processing company. They began the production and sales, such as ham and sausage in Vietnamese market. In this case, JV receive the supply of raw materials from local pork production companies. For the meat processing sector, several Japanese companies have shown their interest and they are considering investment for Vietnam. (According to the interviews with trading companies).

(5) Necessary Inspection for Export

Though most of livestock processed food don't have capacity to export, export inspection is being conducted in Regional Animal Health Center under MARD (detail is described in "4.4.3 Legislative Arrangement on Food Processing").

(6) Procurement of Machinery and Materials to be Necessary for Processing

Machineries for pork processing are mostly from Europe. For Japanese companies, mostly bring machineries from Japan, yet, these are often customized of European machineries.

4.4.3 Legislative Arrangement on Food Processing

The governing law of hygiene of livestock and safety of livestock products is 2004 Veterinary law, which are already out of fashion and is not catch up with quick decision of import ban by livestock importing countries. Toward such situation, Livestock Dept. of MARD is intending to improve the existing law in 2012.

Location of slaughter houses was determined in "Rules on Veterinary Hygiene for Slaughter Houses and Simple Animal Slaughter Houses" published in 1995 as following:

i) located in high altitude and dry well-ventilated, ii) apart from schools, hospitals, pagoda, church, office and market, iii) having enough space and fenced, iv) sanitary environment, v) slaughtering in house, shop, workspace is forbidden.

For slaughter for export, after receiving approval from Department of Animal Health (DAH) under MARD or DARD, slaughtering is conducted in slaughter houses permitted by Provincial / Municipality's People's Committee. After that, sanitary inspection is conducted in Regional Animal Health Centers. Certificates of quarantine is issued in each stage, and required to be attached in livestock. Certificate or marking seal are determined to be issued for meat after veterinary or hygiene inspection.

There is also provision for transportation of slaughtered meat. The meat for export, it is necessary to receive quarantine certificate issued by Regional Animal Health Centre or quarantine station at the national border under DAH.

4.4.4 Logistics Network and Marketing

(1) Present Situation of Logistics Network Connecting Raw Material Production Site – Processing Site – Consumption Site

Logistic system of pork was surveyed through interview to 812 enterprises nationwide. The survey entails that wholesaler and slaughter is playing an important role; the former provides marketing information and the latter manages the price, collection/distribution, and livestock/meat hygiene.

According to the survey, traditional logistic system (Farmer→ Middle man→ Slaughter→ Market) is still common in Vietnam although modernized system by big entrepreneurs is being popular nowadays.

Japanese investors are trying to penetrate feed supply business aiming for vertical integration.

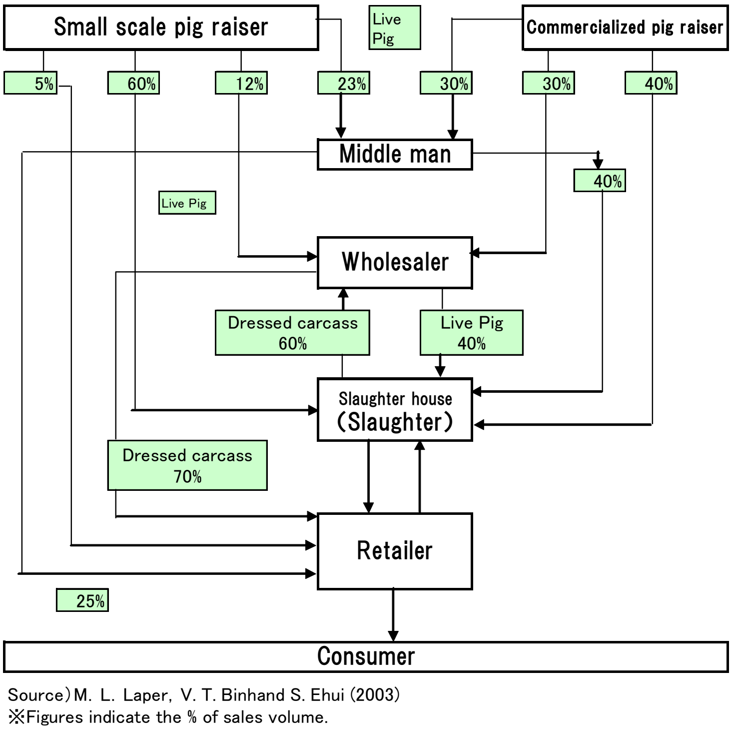


Figure 4.31 Pork Meat Logistic Network in Vietnam

The biggest distributor of meat in Vietnam is VISSAN[50], which is national mediate company. VISSAN has original channel taking on almost cargo, slaughter treatment, food processing and sale. Recently new circulation channel is being formed, for example, companies which own slaughter treatment factory (major company of this field is DOFIC in Dong Nai Province etc.) in Ho Chi Minh city or Hanoi city carry on trading with supermarket.

(2) Consumers' Needs at Expecting Buyer Site (Domestic and Overseas)

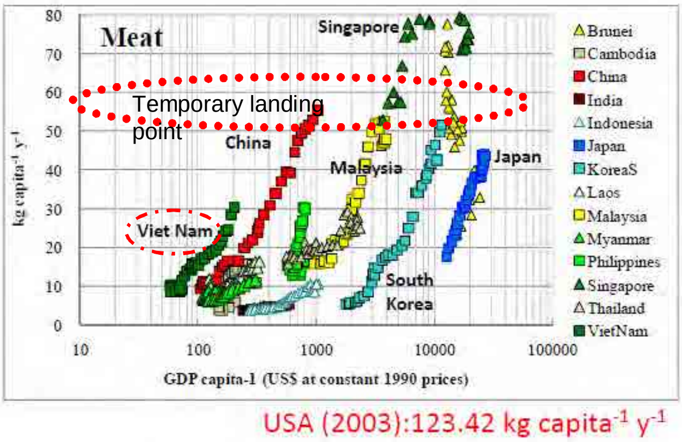
As Vietnam expands its pork production and consumption, the opportunities exist to invest in Vietnamese pork sector. The followings are the reason of this idea;

- Per capita consumption of pork is still half level of potential consumption volume.
- Investment to feed supply, deep processing (ham and sausage) will have good potential.

[50] Concerning a meat processor, VISSAN, national company under the umbrella of Ho Chi Minh city people's committee, is strong in the south area and Duc Viet, joint venture of Viet Num and German, dominate the market in the north area. These companies own an ably-managed processing factory and refrigerated truck and provide hygienic products.

- Others are; supply semen and breeding swine, and supply agricultural services and equipment that use modern pig breeding, slaughtering and processing techniques.

Prevailing food and mouth disease is one of the barrier for Japanese investment. It is also noted that old fasioned "Rules on Veterinary Hygiene for Slaughter Houses and Simple Animal Slaughter Houses" published in 1995 is no longer fit with Japan's rules on import.



Source) FAO STAD

Figure 4.32 Trend of Meat Consumption by Country

From figure above, the market scale is likely to expand at least twice as the current. As a result, also demand for feed will be doubled[51].

(3) Retail Structure at Expecting Buyer Site[52]

Pork treated in slaughter houses in the rural area is brought to local market and processed into meat there. Vietnamese people purchase meat in small lots, not in blocks. Therefore, frozen meat reels from slow sales.

Retail price of pork in Hanoi (2011) is ranging from US$ 3.50～US$ 9.50 /kg. Due to inflation, retail price of some regios were more than doubled compered to data in 2005. Chicken is more expensive than that of pork. Generally, prices in Ho Chi Minh are higher than those in Hanoi.

Table 4.23 Retail Price of Pork and Chicken in Hanoi

Regio	Supermarket	Wet Market
Heart	US$ 9.45	US$ 8.68
Kidney	US$ 6.99	US$ 5.79
Stomach	US$ 6.41	US$ 4.82
Muscular Part	US$ 7.23	US$ 5.79
Hand of Pork	US$ 3.86	US$ 3.37
Chicken	US$ 6.09	US$ 5.79

Source) Retail Price Survey conducted by JICA Survey Team16/09/2011

Vietnamese people generally prefer fresh meat in wet market, which was slaughtered in the morning. Also, ratio of households which have refrigerators has not yet reached 100 %, thus, they

[51] The major trading companies which invests the forage industries take about the same statistics as the main text and the amount of the meat consumption is expected to exceeded 20million ton in 2020 twice as much as in 2010. In addition, the forage production also increases at a 10% annual rate.

[52] As above, it was confined to the domestic market, because the export shall be avoided in the immediate future due to the foot-and-mouth disease.

don’t prefer stored meat.

(4) Competitiveness at Expecting Buyer Site

As above-mentioned, Viet Nam does not prefer the frozen meat and processed pork so much, however, the following points is considered to increase the demand of processed meat so much;

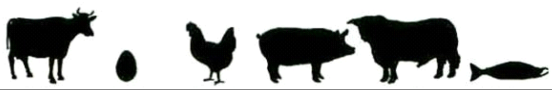
(a) Modernization of maker of edible meat

(b) Appearance of young workers as leading person of market

(c) Improvement of family income

In this section, pork meat is picked up as strategic processed food considering most recent demand and condition of production. However, chicken meat must be regarded from the point on a feed efficiency although it is expensive now, according to the Japanese giant trading companies. Dairy products would increase investment opportunity if present condition is improved.

Business opportunity for Japanese company exists in vertical integration from feed production to meat processing/distribution. Japanese businesses’ penetration in feed supply business will trigger further investments in raising pig, pork processing.



	Milk	Egg	Chicken	Pork	Beef	Fish
Volume (kg) of feed material to produce 1 kg of edible part	1.1	2.8	4.5	7.3	20.0	1.4
Nitrogen absorption rate (%)	30	30	20	10	5	40

Source）Smil (2001) Enriching the earth. The MIT Press.

Figure 4.33 Feed Efficiency by Animal

Chapter 5　Development Concept

5.1　Potential and Direction of Countermeasures

5.1.1　Procurement of Raw Materials

The following figure shows the result of evaluation about "Potential of Raw Materials", which is obtained through demand-supply analysis by provincial level (58 provinces and 5 centrally-controlled municipalities). This figure shows the potential level for i) rice, ii) vegetable and fruit, iii) fish, iv) pork, respectively. Provinces with dark colors show their high potential for productivity. In this Figure, "demand" was obtained by multiplying consumption per capita and population, thus the volume for food processing was not considered in this figure.

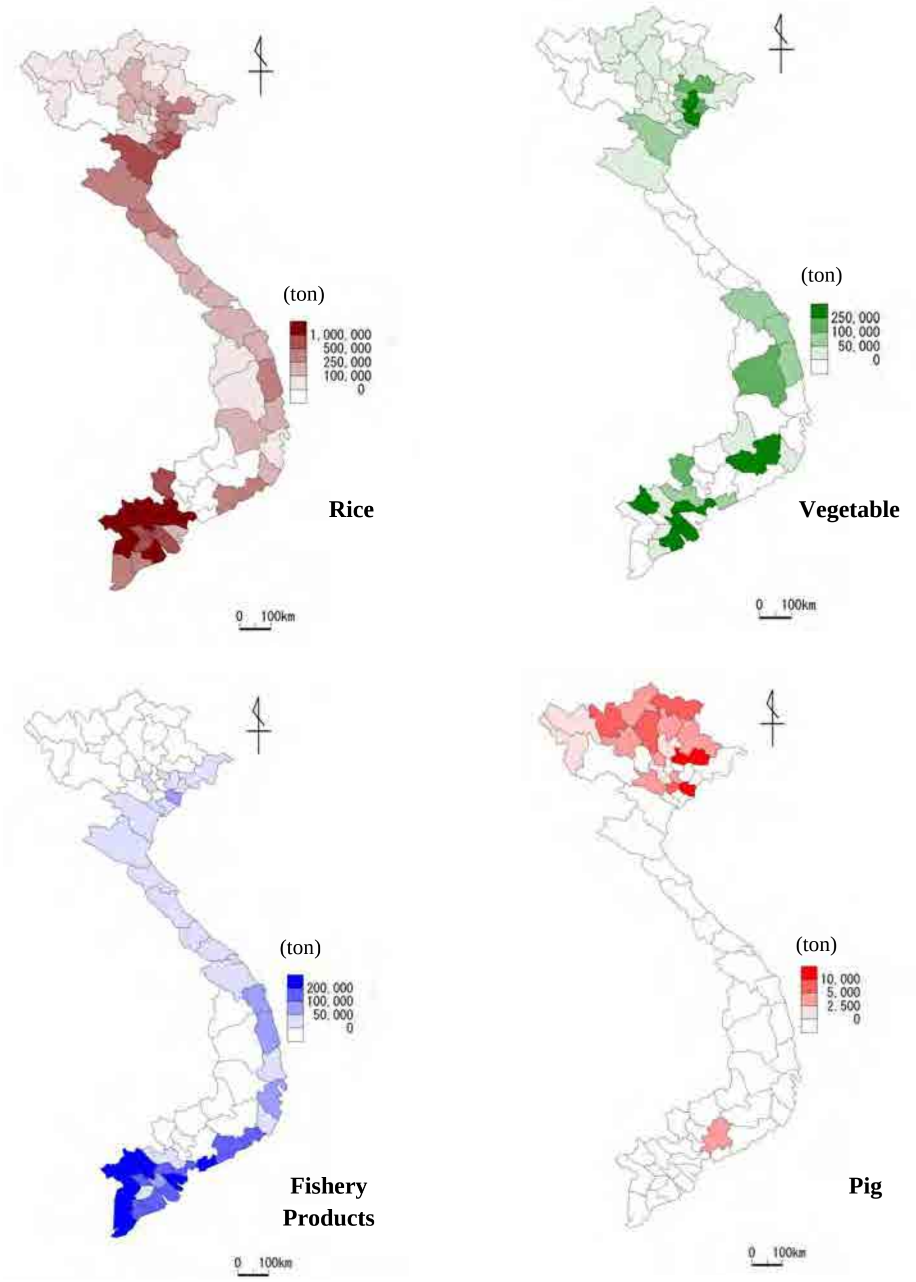


Figure 5.1　Potentially Rich Provinces

(1) Rice

Red River Delta basin and Mekong River Delta basin have the biggest potential to provide raw materials for food processing.

During our survey in November 2011, “Rice Festival” was held at Soc Trang province. Vietnamese Newspapers reported about the drastic improvement of Vietnamese rice quality in recent years. “Since the labor cost in Thailand showed the sudden rise in recent years, Vietnamese rice has increased its competitiveness and evaluation all over the world (Vietnam News, 17th Nov. 2011)”, “The major importer of Vietnam rice will be African countries. India and Pakistan will be the competing country for the rice export (Saigon News, 19th Nov. 2011)” Vietnamese rice will acquire the global status by lowering the export price of rice (Vietnam News, 19th Nov 2011)”. As mentioned by these articles, the pricing is more emphasized than the quality of rice for rice strategy of Vietnam.

Vietnam’s country strategy on rice production intends to improve the quality of rice through market mechanism and competition. Basically, Vietnam is going to widen their sales channels internationally with their strategical lower price. Thus, the Government does not have strong will to improve the quality of export rice through the improvement of rice polishing techniques (according to the interview for Japanese rice processing company and Vietnamese major state-owned enterprises). The expectation for improvement of rice quality might come from needs of consumers in Vietnamese domestic market. The consumers in metropolitan area (GNI per capita is more than US$ 3,000 such as Ho Chi Minh City) are thought to have the strong demand for the taste and freshness of rice. Therefore, small or medium-sized rice distributors in Vietnam for domestic market will need Japanese processing machineries with high-technology such as rice polishing or rice drying machine.

In terms of rice circulation in Vietnam, approximately 70 % of produced rice is supplied for domestic consumption and rest is for export product. The export volume of rice amount to 7 million ton and the market share of state-owned enterprise (Vinafoods) for the rice export showed a sudden decrease[53]. This decrease means the progress of market-oriented economic of rice business. Vinafoods possess 34 subsidiary companies which conduct the rice processing. However, the rice processing capacity of those subsidiary companies is not fulfilled the export volume of rice, which is forcing Vinafoods commit the rice processing work to 118 business related organizations. The number of medium and large sized companies and enterprises handling the processing work of export rice is considered to be 300-400. In addition, it is assumed that the number of companies will be estimated more than 10 thousand, which handle not only the processing work of export rice but also domestic circulated rice.

Moreover, consumers in Vietnam have been started to require the qualities for daily consumed rice noodles known as “Pho” with their freshness and secure in recent years[54]. Therefore, it will be increased for the demand of Japanese high quality and reliable noodle-making machineries even though high price. The current noodle-making business in Vietnam is engaged by following main organizations. i) Vinafoods affiliated companies such as Safco and Minh-Duong which are big enterprises (approximately 30 companies in the whole country) possessing the single strait system from Rice to Rice flour, Noodle and Packing. ii) Small and medium-sized noodle-making companies (approximately 100 companies in each provincial agency) which are taking charge of the rice processing from Rice flour to Noodle.

For these reasons, the selling processing machineries will be the business opportunity for Japanese enterprises concerned with rice processing. The number of target enterprises in Vietnam is 300-400 big companies for the sale of rice processing facilities. In case of the sales of high quality noodle-making machineries, 100 companies for single strait system, and 5,000 companies for compact

[53] The share in export of the government management company Vinafoods is estimated 50% in 2010 and 30% in 2011. The proportion in exports of rice of Vinafoods is calculated approximately 7 % in all the rice production in Vietnam.

[54] Website: Seven and i food systems (Flagship store: Chiyoda-ku, Tokyo) which operates the restaurant of Vietnam Foo (Pho24) in Japan.

system could be the target in Vietnamese market.

In case of rice-based vendors business, the investment will be activated by the advance of Japanese big supermarkets and convenience stores. The Japanese big supermarkets which has decided to advance in Ho Chi Minh city in 2014. They declared the policies to prepare Japonica rice for the lunch box and using only the rice made by Japanese manufacturers.

Considering these facts, possible investments and business opportunities are i) rice vendor businesses that produce rice based product and sell them to Japanese supermarket and convenience store, ii) rice powder and starch manufacturing, iii) sales of machinery (4 wheel tractor for rice (Asian type), combine-harvester etc[55].), iv) Japonica rice production for rice venders who are aiming to make business with Japanese supermarket.

(2) Vegetable and Fruit

Major potential area of vegetables is Red River Delta basin, Mekong River Delta basin and Da lat Highland in Lam Dong Province. It was believed that Dalat provides safest vegetable and many investors choose there as production site. This Survey also revealed that there exists a big potential of investment even in northern provinces as well. However, since safety of raw materials is still big issue in Vietnam and it is difficult at present to inspire demand in Japan. Reasons with details are as follows:

- Cooperative production and distribution has not yet become common in Vietnam, thus, it is difficult for Vietnamese producers to appeal safety of products to Japan where efforts toward traceability has been made.
- Remains of harmful rumors on Vietnamese products (residual defoliant) still persist, which ruin Vietnamese efforts toward safe vegetable production.
- Farm is small and scattered, so that it is difficult to supply raw materials with constant volume and equal quality. Farmers don’t want to unite due to the history of dismantlement of farmers’ organization by Doi Moi policy.
- It will take long time for building confidence between companies and farmers. In the past time, some Japanese companies had transferred technique on agricultural production and provided inputs and gradually established cooperative relationship. However, at present, there are only few Japanese SMEs that have enough capital and time for the confidence-building like mentioned above.

Thus, the investment opportunity of vegetable processed food is for domestic market. Thus, following steps are required to be taken; i) establish certification system for appealing safety of raw material vegetable to Vietnamese consumers, ii) confidence-building between consumers and producers, iii) attract FDI in vegetable processing, iv) agreement on export conditions.

(3) Fishery Product[56]

Possible raw materials which attract Japanese investor would be four kinds; viz. i) Shrimp (Ca Mau, Bac Lieu, Soc Trang), ii) Catfish (Dong Tap, An Giang, Can Tho), iii) Squid (Khanh Hoa), and iv) Tuna and Bonito (central to southern provinces), which will be processed for export purposes

[55] Among others are: Rinse-free rice polishing machinery, Rubber-roll type husking unit (Paddy-cleaner, 5 inch rubber-roll husking unit: husker with paddy-brown-rice separator), Rice cooking facilities, Rice bran-oil production & its facilities, Small rice flower milling and rice noodle machinery for domestic producers, Color-sorter, Husk burning power generator.

[56] VASEP, an union for exporter of fishery products, has 289 companies registrations and exports product by private initiative and develops fishery products. Until this point, VASEP has received a benefit from export of shrimps and catfishes but it feels strong sense of crisis because products for export have not been exceeded beyond semi-processed products. So, it considers bringing in Japanese well-developed products as soon as possible and has more incentive to developed processing industry. However, this field is considered to produce good results by strengthening a relationship between private companies.

and distributed to domestic market.

Several Japanese companies are investing to fishery sector, but most of them are traders and just subcontracting of processing to local companies. Advanced technology of Japanese company is sought for; ex. subtracting collagen/chitosan from catfish/shrimp residue, however, it has little possibility to attract them at present. VASEP is strongly requesting Japanese investor to tie up and aiming to go into deeper processing operation.

The Government of Vietnam is already taking inhibitory action for the area expansion of shrimp pond. Therefore, it is considered that the entry of shrimp exporting business conducted by Japanese trading company is not expected to enlarge its trading volume. In case of the processed shrimp, the investment to the processed goods such as minced shrimp and the mixture of other foods as an ingredient of soup, etc… could be considered. However, the arrival of aging society has resulted in the reduction of consumption in Japan. Thus, the main shrimp market for the investors would be domestic trade in Vietnam.

It is also assumed that the investment to the production of processed cat fish would increase. Currently, the processed catfish which is called “Char” such as catfish fillet and fries of white fish is imported in Japan. The frozen fabricators and fishery trading companies are also importing Char. However, there is no Japanese enterprise engaging in the Char production directory in Vietnam and most of companies obtain Char through purchasing from catfish producing company and import to Japan. Commonwealth state such as Korea, Australia and Malaysia have already introduced the catfish for the traditional fish & chips. In case of processed cat fish, the investment from fishery trading companies which handle the import of fillet and frozen commodities to Japan and small and medium-enterprise which handle deeper processed catfish products than conventional products circulated in Vietnam would be promoted in the future.

On November 15, 2011, the South Central Province People's Committee of Phu Yen Province in the south central Vietnam has issued the investment agreements for the purchasing, processing and exporting of tuna to the merged company which is composed of Vinh Sam Imex co., Ltd. and 5 Japanese enterprises. In addition, the Intellectual Property Bureau of the Ministry of Science and Technology has issued the trademark registration certificate for the tuna products in Phu Yen Province. Japanese investors are scheduled to begin operation in February 2012. Phu Yen Province has captured approximately 6,000 t of tuna per year and the profit amount to US$ 1million through the export to EU and other Southeast Asian countries. Phu Yen Province expects to acquire advanced fishing technology and resource management technology in Japan. As discussed in Chapter 4 of this report, offshore of Vietnam has not been fully utilized and the tuna resource is abundant in the region. Thus, the Japanese investment potential to those areas is considered to be very high.

(4) Livestock Product

In Vietnam, the pork is produced in sufficient quantity. However, other livestock products do not have enough production capacity to meet demand in Vietnam. Chicken and egg shortage has caused heterogeneous quality of processed products. In addition, despite having factories in Vietnam, the Japanese food processing companies are facing a situation where all ingredients are imported from other countries. Moreover, the quality of beef is not high enough and the improvement of meet quality and increasing the number of cattle breeding has become the important subject for the government of Vietnam. Therefore, the processed food except for the pork-related products could not be produced for Japanese investors in Vietnam.

Business opportunity for Japanese company exists in vertical integration from feed production to meat processing/distribution. Already some investment has made by Japan’s big capitalist. The big investment is also expected in the field of livestock/agriculture based industrial park.

The potential of raw materials (pig) is bigger in northern part, but major Japanese investment is focuses in southern part, especially in Dong Nai province. It is considered that investment on livestock field will continue, in particular, ham and sausage production will be a good target of investment once investor found competent partner in the northern area. Furthermore, Japanese investors are seeing a potential at pork product presently, as well as chicken/egg and dairy products in the future. The investment to the province which possesses the surplus pork, especially to southern Dong Nai Province is particularly active. There is an example that the meat processing companies and meet trading enterprises had advanced to Vietnam market with technical cooperation to Dong Nai Food Industrial Company. Other example shows that the biggest Japanese meat processing enterprise has acquired Vietnamese enterprises. This field can be expected for Japanese investment in the future. Because the ham and sausage makers in Japan are not only the largest meat processing companies, but also provincial or regional makers. Furthermore, there is a fact that they co-exist in Japan. Under this assumption, it is considered that the investment capacities are expected to be large in Vietnam. Especially in northern Vietnam, the investment is not well conducted in spite of its surplus potential of pork.

Table 5.1 Major Vietnamese Pork Processors

Major Processors	Business
Vietnamese Subsidiary of Thai Charoen Pokphand Group	The Vietnamese subsidiary of Thai Charoen Pokphand Group CP, CP Vietnam Livestock Co. is headquartered in Dong Nai province, processes approximately 9600 tonnes of pork, chicken and shrimp annually and sells 40 types of products through its 11 Fresh Mart stores. CP Vietnam operates a closed pork processing system covering everything from feed production and pig farming to slaughtering and processing.
Long Chau Enterprise	Long Chau of Dong Nai province invested $3.6 million in pork-processing equipment imported from the Netherlands in January 2006 and installed a closed pork processing system, which will have a capacity to butcher up to 200 pigs per hour. Long Chau operates three factories in Vietnam and also supplies feed and veterinary drugs to the pork industry.
Vissan Import Export Corp	Vissan is the biggest supplier of pork, beef and vegetables in Ho Chi Minh City and is a major processor and trader of fresh and frozen meat in Vietnam. Like CP Vietnam and Long Chau, the company has a closed pork processing system. Vissan has a wide distribution network of branches in Ha Noi and Da Nang and supermarkets and sales representative throughout the country. The company handles more than 30 000 tonnes of meat product per year, including fresh and frozen meats and processed and canned foods containing meats, seafoods and vegetables. Vissan has cold storage capabilities, and the capacity to hold approximately 10 000 hogs, butcher 2400 head per six-hour shift, produce 5000 tonnes of cold cuts per year, produce 8000 tonnes of sausage per year, and produce 5000 tonnes of canned foods per year.
Food Export Joint Stock Company (Foodex)	Foodex is constructing a $1-million food-processing factory in the northern province of Ha Tay. The factory will increase production from 900 tonnes to 3600 tonnes of pork over its first three years of operation. Hog producers in the province are seeking to increase their lean pig populations to meet the demand of the new processing plant.

Source) Website of Agriculture Canada

5.1.2 Countermeasure

(1) Rice

Most of business promotions as above will be conducted on PRIVATE - PRIVATE basis without strong support from Japanese government.

In this regard, however, securing safety of raw material (rice) is prerequisite of investment. According to the interview survey conducted in the Study, many Japanese tenant firms in the Southern region were worried about prevailing rice (especially of residual pesticides) that is produced in Mekong Delta and distributed for local market. The supermarket which will be opened in Ho Chi Minh City has an intention on procurement of rice-based food that i) they will use Japonica based products, and ii) they will buy from Japanese company locating in Vietnam. Therefore, securing safe

Japonica rice in Vietnam is deemed to be important for investment promotion. Most probably, Japan's support needs to consider for preparing a demonstration farm to disseminate production management of safe rice to target farmers.

(2) Vegetable and Fruit

For Japanese companies, procurement of safe and good quality raw material is a critical issue. However, reliable production areas are very few in Vietnam. Therefore, it is necessary for promoting Japanese business investment to establish safe vegetables production areas and make efforts toward confidence-building between producers and consumers through ODA.

Firstly, it is necessary to ensure the sustainability of existing JICA’s project namely “Strengthening the Capacities for the Field of Management of Vietnam's Crop Production Sector for Improving the Productivity and Quality of Crop's Product in Vietnam”, being conducted in three provinces (Hung yen, Ha Nam, Quang Ninh) in the Northern region. Since farmers have learnt know-how of safe vegetable production in the previous stage of the Project, successive capacity building to enhance distribution and marketing will be necessary. The goal of the Project is to form “bland”, so that farmer-consumer communication should be strengthened.

Secondly, Japan’s contribution to establishing the base of vegetable production should be conducted. Since, there are many potentially rich provinces in the Northern area, Japan’s support should be harmonized with NRDP. Vietnamese government has been implementing NRDP since 2010, which aims at improvement of social and economic circumstances in rural area through commune led participatory planning and implementation. NRDP is to improve agricultural productivity, to improve farm income through the industrialization of agriculture, furthermore, fostering commercial farmers through linkages with domestic and foreign investors. This plan has possibility of contribution to building basic infrastructure for promoting Japan’s investment.

(3) Fishery Product

It will be possible to expect more investment from Japan without any government supports. However, since the investment activities will be boosted through supporting the following fields.

Japan’s ODA strengthening capability of safety inspection laboratory in Ho Chi Minh and Can Tho has recently started in late 2011. However, since the project aims to establish SPS Center in three years time, most of trained persons will be assigned to central government but not to provincial offices. Taking into consideration the prospectus of the Project, it is obvious that the number of inspection laboratory for export inspection run short. Since many of Japanese investors are involved in exporting shrimp to Japan, Japanese government’s support to increase number of trusted laboratory will be aspired.

Distribution of fishery products from production site to export point is critical from viewpoint of safety and export competitiveness. At present, many containers for export with 25-35 ton can not carried through road to export point because the bridges on the way have no durability for container weight. Strengthening weight durability of bridges is actually counted as most urgent issue for fishery processing industry and distributer.

Vietnam has abundant resources of tuna. One Japanese JV has recently obtained a business license in Phu Yen Province and it is expected that such investment will continue in the future. In this regard, Vietnam needs to develop tuna catch/process base where safe catch/process/storage and distribution should be conducted. The concept seems quite reasonable for Japan as well because Japan needs to import tuna from abroad to meet its big domestic demand.

(4) Livestock Product

It is considered that investment on livestock field will continue. This area will keep growing as

Vietnamese economy has grown.

Some materials for livestock processed foods (ex. juvenile for sausages) need to be imported from Japan. However, importing such materials / tools is difficult because of differences between Vietnamese standards and international standards. The standards of processed food in Japan is internationally accepted and known as one of most trusted standards. It is necessary for Vietnamese government to acquire the knowhow to establish such a trusted standard to enhance export and attract Japanese investors. In fact, introducing common standards with Japan is welcomed by Japanese investors, because they can produce the products of same quality as Japan. By so doing, they can import the product from Vietnam and sell it to consumers in Japan with more profitable manner.

It is necessary to attract Japanese investors in the north Vietnam where few businesses in food processing have been operated. In the north, some competent partner companies have appeared, thus, near in the future, there will be many companies which can attract Japanese investment strongly in livestock processing fields[57]. However, for the processing and distribution of livestock processed foods, farmers, traders and food processing companies have low technique, thus, assistance of technical training in the private sector / government will be necessary.

There is a big risk in investment for livestock to increase production of egg and poultry. Japanese investors have two() choices, one is investment in this field with brands of Japan as most trustable product (based on the result of questionnaire survey to consumers in Hanoi and Ho Chi Minh city conducted by JICA Survey Team) and getting profit as leading investors, second is considering investments based on the movement of other competitors[58]. Risk of investment in eggs and poultry production is not trauma of bird flu. The real risk is in little assistance from Vietnamese government to promote exports of chicken and egg to other countries[59].

[57] Main reasons are; (1) hams and sausages produced in South area go into circulation in Northern area and consumption in the Northern area are boosted up strongly, (2) Surplus of pork which is raw ingredients at except for Dong Nai province does not exist but there are so many pork in the Northern area and main mass retailer expand the area to Northern area, which causes to increase the number of big markets that deal with processing products.

[58] Production on poultry and eggs is not Agriculture but Industry. About one-million-poultry feed in chicken farming are generalized and market of poultry would be saturated if those poultry are sold in market. It means only one or two antecessor could get benefit. Investors come under the pressure to select becoming first or second pioneer or entering the market after saturation, which requires investors to feed its way into export, policy of the Vietnam Government is important on success of business.

[59] For example, the Chinese government supports the export of eggs and poultry through lobbying activities. Those activities are very important for investors because they can make a huge invest to the market under the support of the Government. In Japan, Action of " Mr. Edano, Minister of Economy, Trade and Industry, required the Chinese government deregulatory import of Japanese food product" (26, November 2011, Yomiuri newspaper) is considered as quite natural.

Vietnamese Major Milk Producing Companies

Two Top		
Vietnam Dairy Products JSC (Vinamilk) Capital: Vietnam(Listed on the Share Exchange : State own 48%) Item: Milk, Yogurt, Powder Milk(DIELAC),Condensed Milk(Ong Tho),Cheese Location : Ho Chi Minh Sales : US$ 467 million (2008)	compete for top share ⟺	Dutch Lady Vietnam Food and Beverage Company Capital: Vietnam, Netherlands Item: Milk, Powder Milk(Friso), Yogurt(YoMost) Location : Binh Duong
Midsize		
Dong Tam Nutrition Food JSC Capital: Vietnam Item: Milk Beverage(NUTIVA), Powder Milk (NUTI) Location : Ho Chi Minh Sales : US$ 14.91 million (2008) Biggest supplier of nutrition product	compete for top share of specific item	Hanoi Milk JSC Capital: Vietnam (Listed on the Share Exchange) Item: Milk Beverage(IZZI), Yogurt(Yotuti) Location : Hanoi Sales : US$ 19.72 million (2008) Expanding share in north
Tan Viet Xuan JSC Capital: Vietnam Item: Milk Beverage,Condensed Milk Location : Ho Chi Minh Also producing breeding cattle		Moc Chau Dairy Cow and Breeding Cattle JSC Capital: Vietnam (state-owned) Item: Milk Beverage, Cheese Location : Son La Also producing breeding cattle
HANCOFOOD JSC Capital: Vietnam Item: Powder Milk Location : Ho Chi Minh Also producing breeding cattle		International Dairy Product JSC (IDP) Capital: Vietnam Item: Milk Beverage (Ba Vi), Yogurt(Ba Vi) Location : Hanoi Products' name "Ba Vi" is name of Milk production area in Hanoi
		Anco Milk Capital: Vietnam Item: Milk Beverage, Yogurt Location : Hanoi Acuired Nestle plant in 2007
Foreign Capital		
Lothamilk JSC Capital: Vietnam･Taiwan Item: Milk Beverage, Yogurt Location : Dong Nai Ho Chi Minh is major market for fresh milk.	further market liberalization is condition for share expansion	Nestle Vietnam Capital: Switzerland Item: Powder Milk (Nestle Gau) Location : Dong Nai
Dalat Milk JSC Capital: Vietnam, South Korea Item: Fresh Milk Location : Lam Dong		F&N Vietnam Foods Capital: Singapore Item: Dairy Products (Daisy) Location : Binh Duong Acquired by Vinamilk

It is not easy to compete with VinaMilk, which is biggest company of dairy products in Vietnam[60].

5.2 Size and Location of Food Processing

5.2.1 Potential

This survey aims to contribute to the development objectives of Vietnam while there is a policy implication for the restoration of Japanese economy with the promotion of investment from Japanese enterprises. Therefore, the scale and location of food processing factories should be considered from

60 As shown the above figure, Vina Milk Company, the government shares 48 % of their stocks, has the widest marketing network in overwhelming scale of sales. Furthermore, it has top share of the all their products. The government supports its advertisement indirectly through promotion on uptake of dairy product.

both side.

As one of countermeasures for unstable raw material production and few food processing especially in north, Vietnamese government has launched New Rural Development Project (NRDP). NRDP was formulated based on the result of pilot project implemented in 11 communes. It is recommended that Japan's cooperation to NRDP should be discussed in a formal manner but to implement Japan's ODA effectively, assistance to the northern provinces is of great effect. Japan's assistance should aim and head for forming vegetable production base where the future investment is anticipated.

For tuna fishing, which has been a promising future in the field of fisheries, it is said that resources are concentrated in two regions in central and southern of Vietnam. Phu Yen province, where Japanese company obtained a business license, is located in south central of Vietnam. This not only is great investment opportunity in the sense of securing Japan's tuna resources, but also has played a big contribution to make it up development objectives of Vietnam.

The problems and challenges to Vietnam's current tuna fishing are shown below;

- Equipment for longline in the fishing vessels in Vietnam now only reach about 20 meters depth from the surface. Thus, large yellow fin tuna which stay in deep sea (more than 50 meters below the surface) or bigeye tuna which is sold at high prices cannot be caught. In addition, percentage of child of the local tuna caught by local fishery is now lower 5% and its retention period of most fishes caught are very short.

- Because of no developed cold-chain, Vietnamese fishers cannot implement deep-sea fishing. 200-mile economic zone is used only about one-tenth of its effective use. Coastal fish catches are declining year by year because they are already taken horsetail.

- The environment of landings harbors, dealing with Tuna which is not cured long time is very poor sanitation, causing marine pollution from wastewater and residue. Moreover, on under the food hygiene, food poisoning, histamine and shellfish poisoning are easy to spread.

Access to tuna resources in Vietnam brings a major economic effect on Japanese companies in Vietnam (see Chapter 6).

For pork production, Dong Nai province has attracted many Japanese companies. Dong Nai province is only one province in southern region which have potential (production amount minus consumption amount) for pig production as shown in Figure 5.1. Especially, Dong Nai Food Industrial Company (DOFICO), which is mother company of biggest domestic feed supplier "Proconco", is promising partners for foreign companies. DOFICO has intention to construct pilot farm in vast area and accelerate partnership with Japanese businesses for vertical integration. DOFICO has 4,000 ha land for agricultural businesses and has interests in partnership project with Japanese businesses there.

5.2.2 Countermeasure

Assistance for NRDP was described in "5.1.2 Countermeasure".

The ODA project shall not compete with investment from private sector. Investment in Phu Yen province has being proceeded recently. The proposed tuna production base should cope with environmental issues surrounding Vietnamese fish processing facilities, such as waste water/drainage problem, and food poisoning caused by unfavorable treatment of caught fish. Additionally, it should be also the base of disseminating sanitary fish processing to neighboring fish port and fish market. Also, it contributes to regional economy and the Project per se shall be the requisite specified in the master plan in question.

For livestock processing, in order to develop livestock industry in northern provinces and promote further pig production in Dong Nai province, JICA's investment finance for the pilot farm will be appreciated to DOFICO with know-how and equipment from feed supply to processing. In the pilot farm, DOFICO will conduct training for livestock farmers in terms of know-how on production and processing. Farmers from northern provinces will be subsidized by Japanese government; they will be guided and lectured by the Japanese experts. It also contributes to the formation of human networks and the new business opportunities for through North-South communication.

5.3 Infrastructure

5.3.1 Potential

The lack of distribution infrastructure and necessity of maintenance is common problem for all stakeholders of processed food. Vietnamese government is advancing building of infrastructure steadily with getting support of various donors. In the previous section, problems on distribution infrastructure were pointed out as i) the strength of bridge is low and a weight limit exists, so that a large vehicle cannot pass even a trunk road, ii) cold chain is not consolidated.

Japan's support on infrastructure building is outnumbered to other donors in Vietnam so that a lot of specialists are familiar with the condition about processing place-to-market road. Furthermore, many STEP projects such as Can Tho bridge construction are highly regarded in Vietnam. Repair and functional enhancement of many bridges are experienced through "Urgent Bridges Construction Project for Rural Development" in the Philippines and it will be used as a model. Currently, some major transportation route includes the bridges with less than 20 t weight limit, and it make difficult for large-sized vehicles to pass (generally, large-sized vehicle is over 20t in itself). To achieve low-cost transportation, it is desirable to design the strength of bridges which withstand 40 feet container loaded vehicle.

As for cold chain building, a case that one company has fitted out cold chain by their own effort and it became a source of competitive power at present, can be observed. In particular, a Japanese distributer is establishes its status by their own effort. Therefore, it is not necessary to put government fund in this field.

5.3.2 Countermeasure

As for repair and functional enhancement of bridge concerned, it is difficult to cover enormous bridges from the origin of raw materials to export terminal. Trunk lines with a lot of trade quantity will be given priority. In this Survey, in the interest of time, only the investigation of an export route of marine product, Ho Chi Minh- Bac Lieu -Ca Mau could be conducted, but such as Dalat -Nha Trang, a route of vegetables and other routes for the stockbreeding processing are still remained uninvestigated. Therefore after this Survey, project formation survey on the bridge reinforcement will be necessary.

5.4 Legislative Arrangement

5.4.1 Potential

About the food safety in Vietnam, international standards are formed in the form of VietGAP, HACCP, ISO, and so on. However, Vietnam has not caught up with the changing speed of food safety standard of the foreign countries.

The Vietnam side already notices this problem and is trying to revise irregular consent of the former legal system and establish a new institutional setup in 1-2 years[61]. Therefore, it is the most suitable timing for Japanese government to offer the legislation support with dispatching Japanese

[61] For example, " National Action Plan for the Food Security and Food Hygiene" of the Food Security Basic Act will be revised in 2011 and Animal Husbandry Promotion Act and New Rural Plan will be renovated from 2011 to 2012.

experts for the purpose of establishing ideal law for both countries.

The following two points are the field with many requests by Japanese tenant firms in Vietnam. It is possible to contribute to the business of Japanese tenant firms in Vietnam and to the establishment of a base calling for new investment from Japan.

a. Institutional reinforcement of standard authentication system

The project aims to contribute to Japanese investors in terms of importing raw materials and advantaging the convenience of production unit through reflecting Japanese JAS to Vietnamese food standard.

b. Institutional reform on bonded cargos

The project aims to establish the system to advance the convenience of import cargos of investors (raw materials and parts for Vietnam factories, etc.) and export cargo (overseas stock of seasonal export product). The project also develops the system to do necessary import/export at necessary time through utilization of bonded warehouses. In particular, it is necessary to simplify the procedure of import and export of Japanese companies through introduction of Japanese NACCS (Nippon Automated Cargo and Port Consolidated System) with grant.

5.4.2 Countermeasure

a. Institutional reinforcement of standard authentication system

The project intends to reflect Japanese food standards to Vietnamese standards, which are going to be formed under new regime from 2012. This causes the advantages for Japanese companies because they can produce the same quality with Japanese products in Vietnam’s factories. This scheme is similar to the on-going project, namely the "Project on Strengthening the System and Operation Standards and Conformance", which is targeting industrial goods (electronic parts). This can be applied to the processed food field as a prototype and the food standards in the field of fishry and livestock products (these are expected of a lot of investment in the future) will be formed.

b. Institutional reform on bonded goods

Since legislative setup on bonded warehouse is undeveloped and inarticulate in Vietnam, it is necessary to check it in a customhouse every time. The project will fit the laws of Japan. Actually, Japanese experts will be dispatched to Vietnam for the project.

For example, present Vietnamese law requires the submission of all movement records in bonded facilities. Proposed law by this project will require last movement record only and other movement is recorded by independent registration. Further, there are many requests for improvement on bonded warehouse as follows:

* Flexible operation of bonded warehouse system

Acquisition of bonded operation is difficult and taking long time. Also, Vietnamese bond approval requires to register the users and cargos in advance. Since food product is usually seasonal, flows of freight are not stable and there are "off-season". However, it is very difficult to fill the empty spaces with other freight at the time. If bond status is returned, the re-acquisition is more difficult.

* Processing management by distributor

It is proposed that distributors keep an export goods in "the bonded warehouse where temperature-controlled bonded warehouses is possible" by the importer name. When ordered, the distributors are able to process and export their cargos according to the order of the clients. In this system, it is expected for Japanese SMEs can concentrate only to the quality control with limited staff.

* Simplification of bond handling system

Bond stock by non-resident is admitted institutionally (nominally) in Vietnam. If bond handling system is simplified, the user's advantage becomes very high. Further, (if liabilities risk and the name problem on quality authorization document can be solved.) payment of bonded cargos becomes possible by the time when the freight name was transferred from importer to distributor.

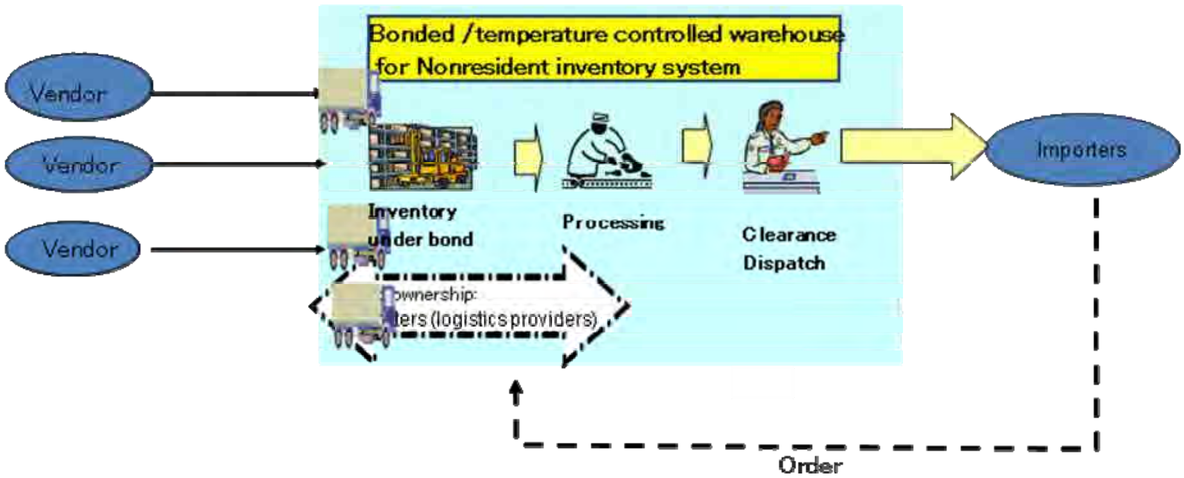


Figure 5.2 Alternate Importing, Bonded / Temperature Controlled Warehouse

Chapter 6 Potential Project

6.1 Strategic Processed Food

6.1.1 Japanese Investors' Opinion

Here is an example of promising processed foods raised by Japanese investors based on the interviews.

Table 6.1 Promising Processed Foods Attracting Japanese Investors and Condition of Investment

	Promising Processed Foods	Market	Condition of Investment	Respondents
(1) Rice Processed Food	✓ High quality milled rice ✓ Japonica rice ✓ Japonica rice processed foods ✓ Manufacturing rice processed foods -Liquor (Sake) -Sweet Sake (Mirin) -Instant Rice -Rice bran-oil	✓ Domestim market of Vietnam ✓ Japanese supermarket, convenience store, Japanese restaurant, Vietnamese supermarket ✓ Japanese supermarket ✓ Domestic market of Vietnam, Japan, Russia, Middle East, Japanese Food Shop	✓ Negotiation with Vinafoods etc. ✓ Opening of Japanese supermarket / convenience store ✓ Closed market, Safety of raw material	Japonica rice production /processing company (1) Rice Vendor (2), Starch manufacturing company (1) Rice powder manufacturing company (1), Wine manufacturing company (2), Trading Company (2)
(2) Vegetable Processed Food	✓ Frozen vegetable ✓ Dried vegetable ✓ Japanese pickle ✓ Frozen Hotpot for domestic market	✓ Export to Japan ✓ Japanese supermarket ✓ Vietnamese supermarket	✓ Safety / quality of raw material ✓ Development of inspection / testing system ✓ Quick response to safety standard ✓ Lack of suitable sites for Japanese vegetable ✓ Lot production	Cut Vegetable Manufacturing Company (1), Frozen vegetable manufacturing company (2), Japanese pickle processing company (1) Trading Company (2)
(3) Fishery Processed Food	✓ Frozen shrimp ✓ Shrimp / Catfish Processing Food ✓ Practical use of sediment (only for big companies);Extract collagen, chitosan ✓ Squeed ✓ Tuna ✓ Bonito	✓ Export to Japan ✓ Domestic market of Vietnam	✓ Safety of processing, low quality and low price, Safety of raw material ✓ Japanese preference, Image of Catfish ✓ Lot production ✓ Development of pre-inspection system before export ✓ Decrease in catch ✓ Quality, restricting fishing, inadequate port and facilities, the ship ✓ Establishment of Cold-Chain	Frozen Shrimp Importer (1), Catfish Feeding Equipment Manufacture (1) Trading Company (5) Freezing Machinery Manufacturing Company (1) Forwarder (2)
(4) Livelihood Processed Food	✓ Feed Supply ✓ Canned Pork ✓ Frozen / Cut Pork ✓ Ham and Sausage ✓ Supply agricultural service / equipment, slaughtering / processing technique	✓ Domestim market of Vietnam ✓ In the future, Lao, Cambodia, expanding target market	✓ Development of inspection / testing system ✓ Securing of consistency of food safety standard between Vietnam and Japan. ✓ Simplifying import procedure on necessary raw materials from Japan. ✓ Stable procurement of raw material ✓ Establishment of Cold-Chain	Livestock Manufacturing Company (2) Trading Company (5) Seasoning manufacturing Company (1)

6.2 Potential Project

Potential projects for promotion of strategic processed food creation and foreign direct investment from Japanese food businesses, which seems to be effective through ODA are summarized as follows:

6.2.1 Pilot Project on Securing Safe Japonica Rice Production and Processing

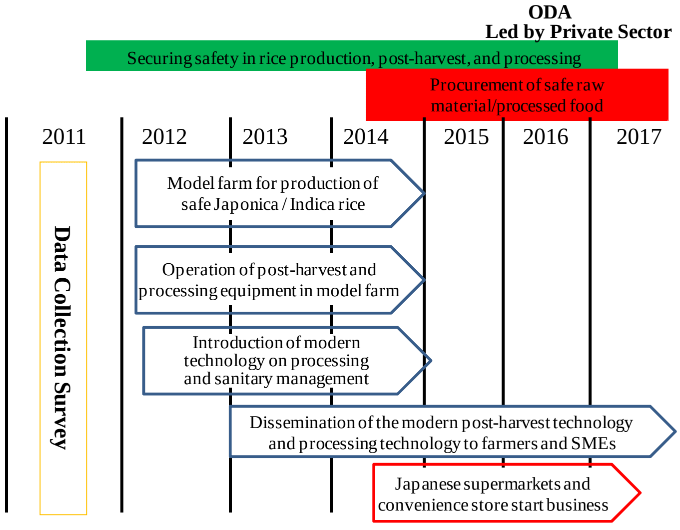
Project Name	Pilot Project on Securing Safe Japonica Rice Production and Processing
Processed Food Category	Rice Processed Food
Scheme[62]	Technical Assistance
Background and Necessity of Project	Mekong delta region is the main rice production area, which supplies rice not only to northern and central Vietnam for domestic consumption, but also to overseas for export. However, the inspection of the rice for domestic consumption is not conducted, and all information disclosed in trade is variety and percentage of broken rice. The export inspection of rice is conducted based on the contract, thus, the remaining chemicals and/or mold toxin is inspected only when the contract require. In fact, Japanese investor brewing sweet-sake (mirin) and liquor (shochu) and etc., confirm that the contamination of residual pesticide in Vietnamese rice exceeds Japanese standard. The milling technology and rice processing technology is still inadequate, and it makes difficult to ensure safety of rice at the stage of post-harvest and processing. At this moment, Japanese big supermarket and convenience stores are planning to launch in Ho Chi Minh, and safety of rice is the first issue. Considering such situation, it is urgent issue to transfer the safe rice cultivation technology, good post-harvest technology to prevent deterioration and reduce post-harvest-loss. In addition, the sanitary management and modern technology for processing rice noodle and rice paper are also necessary to be transferred.
Related ODA project	Strengthening the Capacities for the Field of Management of Vietnam's Crop Production Sector for Improving the Productivity and Quality of Crop's Products (2010〜2013)

Project Purpose	✓ Establishment of safe Japonica rice production system ✓ Improvement of quality and safety of rice processed food through introduction of Japanese post-harvest technology to reduce post-harvest loss and sanitary management for processing, rice-flour-mill and noodle (paper) processing technology
Project Area	Farm and Research Institution related to SIAEP and/or VINAFOOD 2 (Ho Chi Minh, Can Tho)
Activities	✓ Establishment of model farm and model facilities of safe Japonica and Indica rice

[62] In Vietnam, "PPP scheme" is not selected as an examination object for this study because of many defect of the scheme. There are not big investments to "PPP" in Vietnam because detailed law between the government and private company concerning an interest during period and risk share dose not exist. According to PM Decision No.72, percentage of the financial commitment of the government to PPP is maximum 30%, which disturbs involves of investors. In order to solve this situation, Bui Quang Vinh, Minister of MPI, closed on an announcement of prime minister in the beginning of November, 2011 as the Instruction No. 1792, approach the government to revise the support scheme of PPP and suggested that PPP should be promoted giving many incentives to the private sectors.

	✓ Operation of postharvest machinery and equipment and the mechanized farm and post-harvest processing facilities, and dissemination of Japanese post-harvest / rice processing technology to the farmers and SMEs. ✓ Dissemination of the sanitary management and Japanese modern rice flour mill and rice noodle (paper) manufacturing technology to SMEs.
Beneficiaries	Vietnamese Side: Rice producers, Small and medium rice traders concerned, small and medium rice-flour / rice noodle / rice paper manufacturer, rice business concerned Japanese Side: Supermarket to be located in Vietnam, convenience store, rice business concerned (agricultural machinery manufacturers, rice cooking venders)
Input from Japan	Japanese Expert : 50 M/M (cultivation management, mechanized farming, post-harvest technology) Machinery & Equipment (M&E) : Agricultural machinery of rice, postharvest machinery and equipment, rice processing machinery
Approximate Cost	JP¥300 million (Experts: JP¥150 million,M&E:JP¥150 million)
Period	2012~2014
Implementation System	Vietnamese Side: Department of Crop Production under MARD, SIAEP, VINAFOOD 2
Donor Coordination	Independent

Impact	Vietnamese Side: ✓ Farmers' income growth through sales of good quality paddy ✓ Improvement of hulling and milling technology Japanese Side: ✓ Provision of japonica rice and japonica rice processing food to Japanese supermarket to be located in Vietnam ✓ Increase of business opportunity on agricultural machinery, rice processing machinery
Operation and maintenance system	Ensure Sustainability: Operation, maintenance and management after project is conducted by SIAEP. Ensure Scalability: SIAEP will be in charge of providing extension services to produces (farmer) and local government staff on post-harvest technology and rice processing technology
Possibility of Japanese Business Penetration	Business Opportunity: ✓ Rice brewery ✓ Rice cooking vender, ✓ Rice flour mill, noodle machinery manufacturing ✓ Agricultural machinery manufacturing (tractor, combine- harvester, rice husking machinery, other post-harvest equipment) Target: ✓ Japanese supermarkets and convenience stores to be located in Ho Chi Minh ✓ local rice millers (Husking contractors) ✓ Small and medium scale rice flour millers, rice noodle and paper manufacturers


ODA
Led by Private Sector
Securing safety in rice production, post-harvest, and processing
Procurement of safe raw material/processed food
2011
2012
2013
2014
2015
2016
2017
Data Collection Survey
Model farm for production of safe Japonica / Indica rice
Operation of post-harvest and processing equipment in model farm
Introduction of modern technology on processing and sanitary management
Dissemination of the modern post-harvest technology and processing technology to farmers and SMEs
Japanese supermarkets and convenience store start business

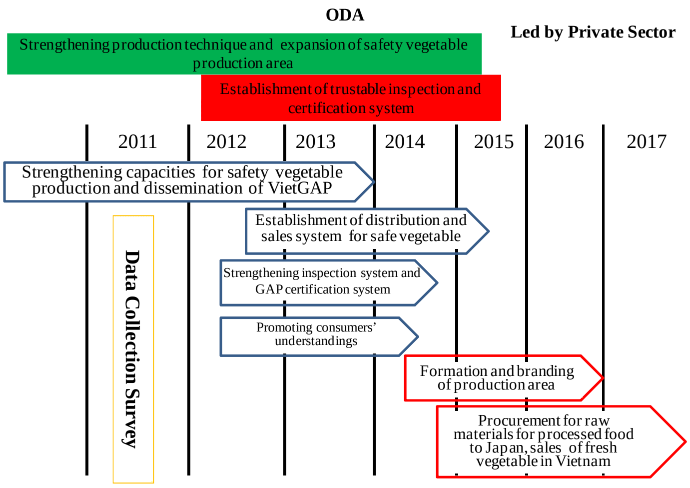
6.2.2 Improvement of Distribution System of Safe Vegetables

Project Name	Strengthening the Capacities for the Field of Management of Vietnam's Crop Distribution Sector for Improving the Quality of Crop's Products
Processed Food Category	Vegetable Processed Food
Scheme	Technical Assistance
Background and Necessity of Project	next page
Related ODA project	✓ Strengthening the Capacities for the Field of Management of Vietnam's Crop Production Sector for Improving the Productivity and Quality of Crop's Products (2010-2013) ✓ Regional Development with People's Participation based on Japanese experience of Roadside Station in Minamiboso City-Vitalization by Formulation Selling Outlet of Reliable Vegetables- (2010-2013)

Project Purpose	Building distribution system for delivering safe vegetable and relationship of confidence between producers and consumers in order to ensure stable production of good quality safe vegetable.
Project Area	Project site of “Strengthening the Capacities for the Field of Management of Vietnam's Crop Production Sector for Improving the Productivity and Quality of Crop's Products” (Hung Yen, Ha Nam, Hoa Binh, Quan Ninh, Thai Binh, Hai Phong)
Activities	In parallel with “Strengthening the Capacities for the Field of Management of Vietnam's Crop Production Sector for Improving the Productivity and Quality of Crop's Products”, support indirectly for building distribution and sales system for safe and good quality products, and in result of the support, promote expansion of safe vegetable production area. 1. Promoting establishment of cooperative collection and shipment including hygiene / quality management, cooperative delivery and sales, and cooperation with retailer. 2. Providing indirect support for the detailed design of VietGAP and promoting understanding of VietGAP of consumers with a view to strengthening certification system. 3. Raising awareness through Public Release: food education, visits to production areas by consumers, and networking event between producers and consumers
Beneficiaries	Vietnamese Side: Consumer in Hanoi, Producers who provide products to consumers in Hanoi Japanese Side: Vegetable processing companies to be located in Vietnam
Input from Japan	Japanese Expert: 35M/M (Team Leader/Advanced distribution system, collect and shipment, strengthening certification system, PR expert, sanitary control) Equipment : collect and shipment house, goods necessary for extension and advertisement
Approximate Cost	JP¥ 200 million
Period	2012-2014

Implementation System	Vietnamese Side : MARD Department of Crop Production, DARD in project site, representative of district / commune / cooperative
Donor Coordination	✓ ADB "Project on improvement of quality and safety of agricultural products and biogas development" ✓ CIDA "The Food and Agricultural Products Quality Development and Control Project"

Important Assumptions / Pre-Conditions	✓ In the targeted provinces, local governments continue policy promoting awareness about safe crops and improvement of production technique. ✓ Farmers continue efforts toward sustainable production of safe crops with good quality at least in the pilot project areas. ✓ In the targeted province, other organization or agencies do not encourage the use of chemical fertilizers and pesticides
Impact	Vietnamese Side : ✓ Shipping and sales of safe vegetable ✓ Conducting regularly scheduled meeting for networking between consumer and production area of safe vegetable ✓ Increase in purchase volume of safe vegetable and securing consumer's health Japanese Side : ✓ Procurement of safe and high-quality raw vegetable for processing
Operation and maintenance system	Ensure Sustainability: Lead by DARD, district and commune department of agriculture and rural development determined oversight for the distribution and marketing of safe vegetables. Ensure Scalability: Lead by DARD, targeted provinces prepare extension plan on distribution system of safe vegetables and provide extension service.
Possibility of Japanese Business Penetration	Business Scale and Opportunity : ✓ Sales of safe and good quality fresh Japanese vegetable for domestic market of Vietnam ✓ Procurement of raw materials with safety and good quality for vegetable processed food Target : ✓ Vietnamese consumers (Fresh vegetable, Frozen seafood hotpot), Japanese consumers (Frozen / dried vegetables) ✓ Logistic company (Promoting distribution from north to south)



【Background and Necessity of Project】

<u>Necessity for Vietnamese Side</u>

MARD is promoting "safe vegetables program" on the wake of large-scale food poisoning caused by vegetable ingredients in the Mekong Delta in 1995. In 2011, the area of safe vegetables and organic vegetable supplied for Hanoi is 3,200 ha, which are well below the target value of 12,000 ~ 14,000 ha in 2010. In Hanoi, there are about 30 safe vegetable retailing shops partnered with the safe vegetable producers, and supermarkets are selling safe vegetables. In addition, the base of "safe vegetable program" come from GAP and IPM, thus, in 2008, MARD issued decision to apply VietGAP, which are basically customized from ASEAN GAP.

In this context, JICA project "Strengthening the Capacities for the Field of Management of Vietnam's Crop Production Sector for Improving the Productivity and Quality of Crop's Products" is being conducted in northern area near Hanoi, Quang Ninh, Hung Yen, Ha Nam, Hai Phong, Hoa Binh, Thai Binh, which aims at establishment of implementing system of production of safe vegetable based on VietGAP. In addition to the pilot site of the above project, production areas of safe vegetables and organic vegetables are gradually increasing. Most of them are at commune level and small scale and produce vegetables following technical guidelines based on GAP. Moreover, some organizations established "safe vegetable shop" and provided vegetables produced in the above area, supported by consumer with high awareness.

However, many consumers still do not trust in products so-called as safe vegetable, thus, the consumption of such vegetables is limited. The biggest reason for distrust is the misrepresentation of the region by some retailer. Most of safe vegetable producers are small farmers, thus cannot manage such incidents. Up to now, misrepresentation of GAP has not yet happened, however, most of consumers don't know GAP and the notion that GAP represents safety. Since, VietGAP is still under development, it is necessary to build distribution system for delivering safe vegetables to consumers safely, strengthen the certification system, and finally build confidence between producers and consumers.

Figure 6.1 Production, Distribution, Retailing of Safe Vegetable

Necessity for Japanese Side

As the result of questionnaire about processed food, Hanoi consumers trust in Japanese foodstuff of almost in all categories (on the other hand, in Ho Chi Minh, American foods are supported). For Japanese companies, procurement of safe and good quality raw materials is critical issue, thus, procurement of safe fresh vegetable as raw materials and sales of part of them to Hanoi consumer is promising business built upon trustable sale and distribution by Japanese companies. In this case, names of companies work as certificate.

Some Japanese companies visited safe vegetable production areas in northern provinces near Hanoi and asked local agencies to grow Japanese vegetable at the sites they thought promising. Furthermore, some safe vegetable production areas grow Japanese vegetable on trial voluntarily considering potential of good taste of Japanese vegetable. Consumers' demand for Japanese safe and good quality vegetable is high, thus, it is necessary to support indirectly expansion of production area as mentioned above through strengthening capacities for the field of management of Vietnam's crop production and distribution and sales as preparation of investment in vegetable processing industry.

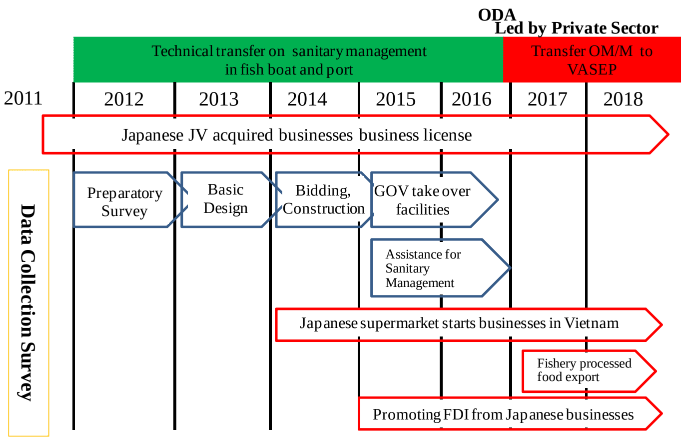
6.2.3 Project for Dissemination of Fishery Port Sanitary Management and Establishment of Tuna Supply Base in Da Nang

Project Name	Project for dissemination of fishery port sanitary management and establishment of tuna supply base in Da Nang
Processed Food Category	Fishery Processed Food
Scheme	Yen Loan (or Grant Aid for Fisheries)
Background and Necessity of Project	Next page
Related ODA project	✓ The Project for Strengthening Inspection System to Ensure Safety of Agricultural and Fishery Food in Vietnam (2012~2014) ✓ The Project for Construction of Oceanic Farming Development Research Center in Nha Trang (2002~2004) ✓ The Study on Integrated Development Strategy for Da Nang City and Its Neighboring Area (2008~2010)

Project Purpose	Dissemination of sanitary management for fishery boat, port. Establishment of the base of tuna catch and processing.
Project Area	Da Nang
Activities	Construction of pier (slip yard, boat slip, etc.), fish treatment and processing site, retail site, ice making plant, cooling place, freezing place, etc.
Beneficiaries	Vietnamese Side: Fisherman (5,000), tourism industry around the site, retail industry Japanese Side: Supermarket to be located in Vietnam, forwarding business
Input from Japan	Equipment and Facilities, Engineering Service, Training
Approximate Cost	JP¥1.8~3.0 billion
Period	2013
Implementation System	Vietnamese Side: Department of Aquaculture under MARD, VASEP
Donor Coordination	None

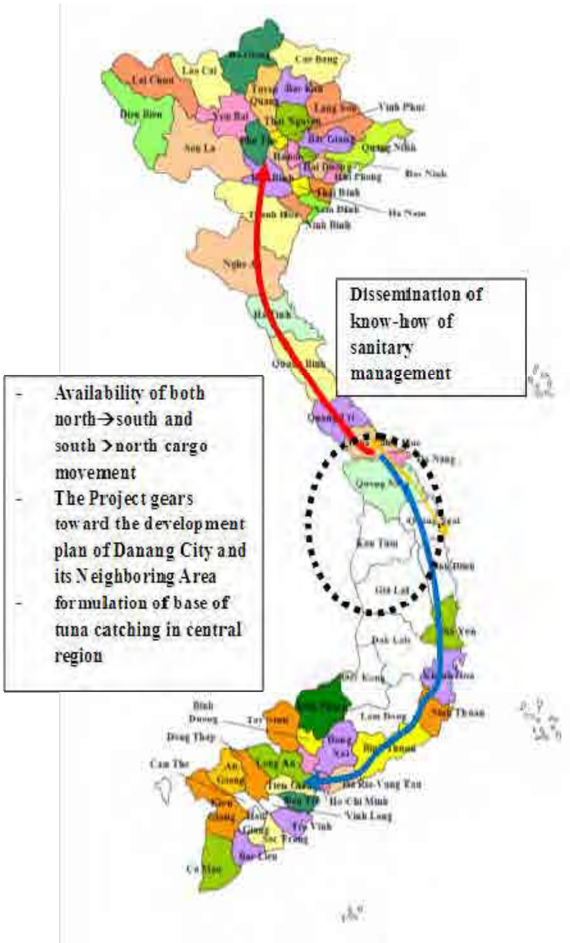
Important Assumptions / Pre-Conditions	No political interference on site selection. Consensus building among Fishery Division, NAFIQAD, Local government, VASEP etc.
Impact	Vietnamese Side : ✓ Improve quality of exporting products (improve sanitary / hygiene management, increase yield of fish) ✓ Increase fishermen's' income through introduction of bigger fishery boat, higher yield, and development of fishery processing industry ✓ Effective utilization of marine resources through introduction of bigger fishery boat ✓ Trigger industrial development (the project is coincident to the result of Master Plan Study of Central Province conducted by JICA) ✓ Dissemination of know-how of sanitary management to nearby fishery port. ✓ Settling environmental problem through rehabilitation of fishery port such as settlement of sea pollution Japanese Side : ✓ Satisfying products lines of supermarket to be located in Vietnam ✓ Availability of both north→south and south→north cargo movement brought by formulation of base of tuna catching in central region. ✓ Synergy effect with SPS project conducted by JICA through development transit point for distribution of sample of inspection

Operation and maintenance system	Ensure Sustainability: Department of Aquaculture under MARD needs to tie up with People's Committee of Da Nang. Ensure Scalability: Operation of constructed facilities needs to be turned over to VASEP or other suitable private sector after several years' government operation.
Possibility of Japanese Business Penetration	Business Opportunity: ✓ Wholesaler: sell tuna products to Japanese supermarkets ✓ Distributor: tuna and tuna products to bring to Hanoi and Ho Chi Minh. ✓ Japan to secure tuna demand. Target: ✓ Japanese supermarket to be located in Hanoi and Ho Chi Minh. ✓ Japanese tuna related business enterprises ✓ Japanese distributer who own cold storage system in Vietnam.



【Background and Necessity of Project】

Necessity for Vietnamese Side



1. Upgrading Quality of Fishery Products and Fishermen's' Income Growth through Securing Safety

- Inadequate treatment of products in fish port has brought about serious food poisoning and it was also pointed out by JICA Expert on SPS. Also, Vietnam has a variety of fishery products, but only 70% are marketed due to the loss by unsanitary treatment of product.

- Exports to EU stagnated due to bad sanitary condition in fish boat and fish port which didn't satisfy HACCP standard. In Phan Thiet port in Binh Thuan province and Vung Tau port in South, improvement of sanitary condition in production stage was required from European countries and now sanitary management in fish boat and fish port was improved(the Survey confirmed). However, in most of fish port in Vietnam, fish has been treated under unsanitary / unsafe condition.

2. Trigger Industrial Development

- Based on the "Study on Integrated Development Strategy for Da Nang City and Its Neighboring Area" by JICA, central region has progressed to new city development stage which puts importance on preservation of environment, MICE[63] addition to tourist business.

- Fishery catches in Vietnam has been decreasing due to shortage of resources in the sea around and lack of production condition necessary for accessing resources offshore.

- There are bonito and tuna from central region to southern region in Vietnam and these catches are exported to United States. The species is yellow fin tuna and albacore tuna.

- Japanese Business has licensed on tuna production / processing / storage / export in November 2011 in Phu Yen province.

Necessity for Japanese Side

- Japanese big supermarkets are planning to open new shops in Vietnam, and they want to procure fishery products which satisfy safety and quality and stable supply.

[63] Meeting, Incentive Travel, Convention and Exhibition/Event. Inclusive term for business events which are expected to bring a lot of communication.

- Availability of both north→south and south→north cargo movement brought by formulation of base of tuna catching in central region for distributors.

- Formation of new business opportunities through establishment of cold-chain for north→south and south→north and active distribution of processed food.

- Establishment of the base of tuna catch and processing.

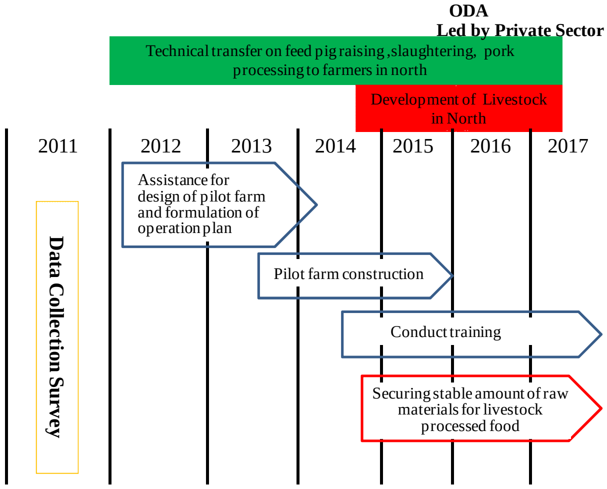
6.2.4 Livestock Pilot Project in Dong Nai Province

Project Name	Livestock Pilot Project in Dong Nai Province
Processed Food Category	Livestock Processed Food
Scheme	JICA’s Private Sector Investment Finance + Dispatching of Expert
Background and Necessity of Project	Next page
Related ODA project	JICA’s Private Sector Investment Finance in 2011 “Industrial Human Resources Development Project in Vietnam”.

Project Purpose	Fostering contracted farmers at site, Livestock development realized through training of pig raisers in northern provinces.
Project Area	DOFICO owned land in Dong Nai Province.
Activities	In order to develop livestock industry in northern provinces, JICA's investment finance for the pilot farm will be provided to Dong Nai Food Industrial Company (DOFICO), which will conduct training for livestock farmers on sanitation/hygiene management know-how on feeding, slaughtering, processing and forwarding of pigs. Major trainee will be identified as neighboring contracted farmers. Farmers from northern provinces will be subsidized by the Japanese government, and they will be guided and lectured by the Japanese expert. To apply to this finance, Special Purpose Company will be formed by DOFICO, Vietnamese Government and Japanese investors. Possible Japanese investors include; trading company, forwarding company, and meat processing company.
Beneficiaries	Vietnamese Side: Special Purpose Company to be established in project, farmers Japanese Side: Business which invested / will invest in Dong Nai province, livestock processing company to be located in Vietnam, supermarket , rice-cooking venders
Input from Japan	JICA Expert: 1 persons x 2 years (Design and Operation Plan)(1) in charge of design of pilot farm and business operation, 1 persons x 2 years (Training Program and Training Implementation)
Approximate Cost	Investment finance (approx. JP¥300million)
Period	2012-2016
Implementation System	Dong Nai Provincial People’s Committee, DOFICO, Japanese companies related to DOFICO
Donor Coordination	None

Important Assumptions / Pre-Conditions	Formulation of Special Purpose Company (SPC) Land will be granted for the Project from DOFICO
Impact	Vietnamese Side : ✓ Enhancement of livestock development in northern province and appeal to potential investors. ✓ Stable supply of pig from contracted raisers. ✓ Quality increase (sanitation and hygiene) of pig ✓ Acquirement of know-how on Japanese advanced processing technology and operation system Japanese Side : ✓ Securing stable manufacturing and safety of food through improvement of quality of raw materials ✓ Smoothening of business expansion through networking with trainee
Operation and maintenance system	Ensure Sustainability: Planned SPC will be in charge of this matter. Ensure Scalability: Planned SPC will be in charge of this matter.
Possibility of Japanese Business Penetration	Business Opportunity: ✓ The size of the Project will be discussed among SPC members. ✓ By fostering capable human resources, Japanese pork processing companies will find business opportunities in northern Provinces. Target: ✓ Farmers and middlemen in Dong Nai Province who are connecting to DOFICO’s livestock business. ✓ Local government officials, farmer’s organization, middlemen, livestock

	processing companies in northern Provinces.



【Background and Necessity of Project】

As explained in the Chapter 4, processing of pork needs better sanitary / hygiene management from fattening to processing / forwarding. Hence, the necessity of the Project has twofold, both are essential condition to attract the investor to this field.

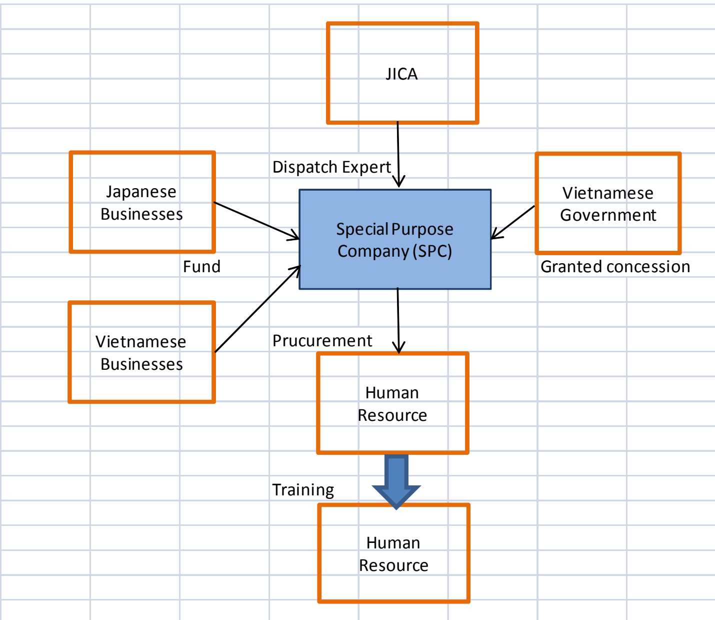
In the northern Province, it is necessary to demonstrate a series of process (from fattening to processing/forwarding) because farmers, traders, and manufacturers have never seen entire process and they have no idea how to produce safety products. Also for southern Province, especially in Dong Nai Province, farmers need to know better way of fattening pigs to secure homogeneous law material.

JICA will provide investment finance to SPC to be established funded by DOFICO in Dong Nai province where Japanese businesses concentrated, Japanese Businesses, local governments, and construct pilot farm to demonstrate a series of process. Japanese Expert in charge of design of pilot farm and business operation will be dispatched before construction, and Japanese Expert in charge of training program formulation/implementation will be dispatched after construction.

SPC's income is to be derived from i) sales of pork, processed food, residual product, ii) commission fee from specific training organizations / region, iii) Sales of feed to trainees, iv) breeding and contracted farming

Newly established JICA's investment finance for private sector is based on the following conditions;

- The project is along with development strategy of Vietnam
- The project has high development impact
- The project is feasible as private sector business
- The project can not achieve business viability through the finance or investment from private



This project is implemented by the private sector for human resource development, and the target is small-scale farmers group / local government staff, not big companies or farmers group. Thus, Development effectiveness is high, but profitability is low, and the Project satisfies above conditions.

Targets for training are local farmers and distributors, especially, JICA Expert put importance on farmers group and local government staff in North.

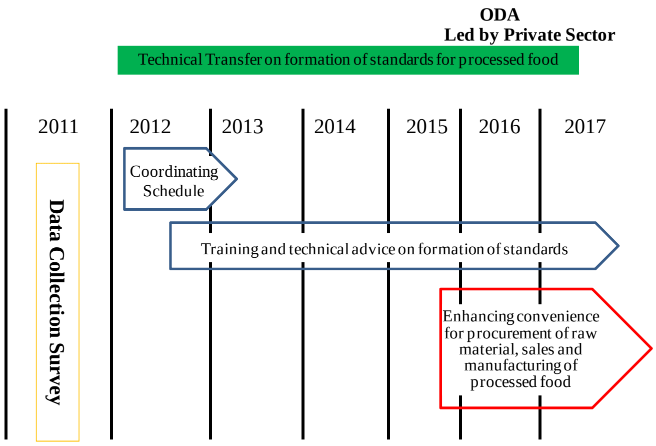
6.2.5 Project on Strengthening the System and Operation on Processed Food Standards and Conformance

Project Name	Project on Strengthening the System and Operation on Processed Food Standards and Conformance
Processed Food Category	All kind of Processed Food
Scheme	Technical Assistance
Background and Necessity of Project	Vietnam Government is trying to strengthen entire legislative framework for processed food. Since 2009, Japanese government has been providing assistance to Vietnam through a similar project in the field of electronic component. The standards of processed food in Japan is internationally accepted and known as one of most trusted standards. It is necessary for Vietnamese government to acquire the knowhow to establish such trusted standards to enhance export and attract Japanese investors. In fact, introducing common standards with Japan is welcomed by Japanese investors, because they can produce the products of same quality as Japan. By so doing, they can import the product from Vietnam and sell it to consumers in Japan with more profitable manner.
Related ODA project	Project on Strengthening the System and Operation Standards and Conformance being implemented at present for STAMEQ, Directorate of Standards, Metrology and Quality.

Project Purpose	Fostering contracted farmers at site, Livestock development realized through training of pig raisers in northern provinces.
Project Area	Hanoi
Activities	Starting 2012, a new institutional setup to prepare processed foods standard will be launched. MARD, DOH, and MOI will be the working body of new setup. The Project aims to dispatch Japanese experts to MARD for five years (same as STAMEQ project) and support staffs to establish processed food standards, especially in livestock related processed food.
Beneficiaries	Vietnamese Side: Vietnamese companies dealing processed food for export to Japan Japanese Side: Business concerned (especially, livestock / fishery processing)
Input from Japan	JICA Expert : 100M/M (chief advisor, project coordinator, experts in specific field of processed food (short time assignment))
Approximate Cost	Approx. JP¥300million
Period	2012-2017
Implementation System	Departments in charge of food standards under MARD
Donor Coordination	EU country such as France/Germany (because they have advanced knowhow in livestock processing)

Important Assumptions / Pre-Conditions	✓ Formal request from Vietnamese government and enlist to Country Assistance Program. ✓ Establishment of processed food standards starts from 2012 with above mentioned institutional framework.
Impact	Vietnamese Side : ✓ Increase export to Japan brought about by communization of food standards. ✓ Progress of Japan-Vietnam Economic Partnership Agreement ✓ Formulation of international food standards Japanese Side : ✓ FDI increase by Japanese food processing manufactures. ✓ Increasing globalization of Japanese products through unifying standards. ✓ Simplification of procedure on import and export of raw materials ✓ Commonalizeing processing machinery and manufacturing equipment
Operation and maintenance system	Ensure Sustainability: Vietnam can simply upgrade and improve the system by following Japan’s do.

	Ensure Scalability: Nothing in particular.
Possibility of Japanese Business Penetration	✓ Easy start of business operation by Japanese investors. ✓ Vietnam's strategic positioning for Japanese companies increase.

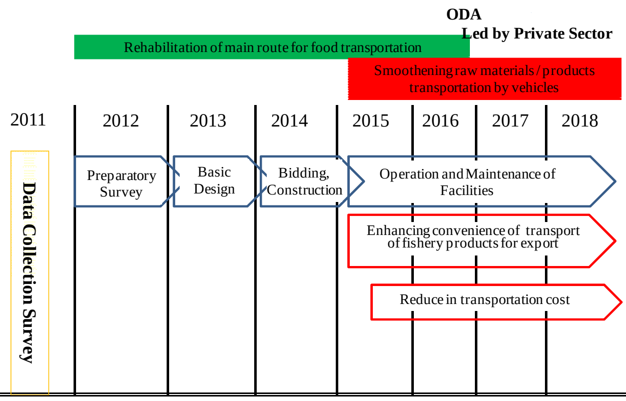


6.2.6 Bridge Rehabilitation Project for Main Logistics Corridor

Project Name	Bridge Rehabilitation Project for Main Logistics Corridor
Processed Food Category	All kind of Processed Food
Scheme	Yen Loan
Background and Necessity of Project	Next page
Related ODA project	Road construction/rehabilitation project by Japan ODA

Project Purpose	Streamlining food product/material transportation practice by installing Japanese technology for upgrading weight limit for bridge formulation rehabilitation
Project Area	i) Bac Lieu - Ca Mau, ii) Cai Lay - Vinh Long, iii) Dalat - Nha Trang
Activities	Upgrading weight limit on low-capacity bridges which locates along with corridor connecting production base and export port as following site・Bac Lieu-Ca Mau ・Cai Lay-Vinh Long ・ Dalat-Nha Trang
Beneficiaries	Japanese entities particularly for fishery manufacture, exporter, and logistics providers
Input from Japan	Yen Loan + Consulting Service
Approximate Cost	Depend on the result of preparatory survey
Period	2014-2018
Implementation System	Vietnamese Side: Directory of road of Vietnam under MOT
Donor Coordination	None

Important Assumptions / Pre-Conditions	There is no significant change in legal system.
Impact	Vietnamese Side : ✓ Development of fishery processing industry through increase in competitiveness of Vietnamese products' export. ✓ Job creation and income growth ✓ Regional development through increase of distribution and contribution to formation of national network Japanese Side : ✓ Reduce of import freight cost ✓ Solve transshipment problem ✓ Promoting establishment of cold-chain of frozen food
Operation and maintenance system	Ensure sustainability: Operating management/maintenance organization based on DRVN determined standard Ensure scalability: Nothing in particular
Possibility of Japanese Business Penetration	Business Opportunity: ✓ Shrimp, Catfish exporter/manufacture ✓ Japanese companies to be located in Vietnam Target: ✓ Importers of Vietnamese fishery products



【Background and Necessity of Project】

Necessity for Vietnam

Delivery in large lot is the most effective solution for logistics cost reduction so that transporting full-loaded large sized truck is ultimate solution for all over the word at any time. In order to do this, road and bridge infrastructure should be developed. Compared with road development which has been progressed, bridge rehabilitation is likely to be in slow pace even in the trunk lines, including small/medium sized bridges.

Low capacity-bridge disturbs smooth full loaded large trucks delivery, resulting in the high logistics cost. Unfortunately, the number of low-capacity bridges is so large nationwide. Considering the budget limitation, the bridge rehabilitation of trunk line should be prioritized. Bac Lieu-Ca Mau, Cai Lay-Vinh Long, Dalat-Nha Trang are regarded as target routes because they are the main transportation routes for fish / vegetable / fruit. Currently, even in such trunk lines, low-capacity bridges exist and they are bottleneck of full-loaded 40 feet container delivery, thus, transshipment problem occurs such as 20 for feet container delivery. Especially in Bac Lieu-Ca Mau, there are bridges with less than 20 ton weight limit, and they make difficult for large-sized vehicles to pass (generally, large-sized vehicle is over 20ton in itself). To achieve low-cost transportation, it is desirable to design the strength of bridges which withstand 40 feet container loaded vehicle.

Since the most important advantage of Vietnamese food items is ‘inexpensive’, logistic cost is likely to affect on export competitiveness. In this line, it is undoubtedly that rehabilitation of low capacity bridges is critical.

Necessity for Japan

Since a lot of Japanese entities currently purchase shrimps and fishery products from southern region, logistics cost reduction is critical issue. Similarly with local exporters, Japanese investors have also strong desire to realize full load 40 ft container deliveries for export, avoiding transload operation.

Avoiding transload operation is not only effective for cost reduction, but also sanitary standard upgrade. This is because cargo can avoid touching unsanitary air or labors.

Additionally, container delivery is also effective for cold chain development[64].

Bridge in Nation Highway No. 1 (until August 2011)

TT	Management Unit	Bridge Name	NH	Location	Length	Span Structure	Load		Year of construction	Damage Status	Prority	Estimation (million VN dong)	No belong to any project	Note
							Design	Real						
1	RRMU VII	Cot Chuoi 2	1	1539+806	12.2	Reinforced Concrete		18t	1973	- Plaform with many cracks - Cross connection is not active	2	8,000.0	*	
2	RRMU VII	Y Loi	1	1563+226	7.95	Reinforced Concrete		22t	Widening in 1999	Plaform with many cracks, protection concrete layer is broken. Weak loading capacity	2	6,000.0	*	
3	RRMU VII	Suoi Sop	1	1717+892	34.95	Prestress Concrete		20t	Before 1975	Large deflection while heavy truck running	2	5,000.0	*	
4	RRMU VII	Tan Minh	1	1754+080	25.95	Reinforced Concrete		25t	1975	Large deflection while heavy truck running	2	6,000.0	*	

RRMU VII: Regional Road Management Unit VII
Exchage rate: 1 USD = 21,011 VN dong
1 Japaness Yen = 276,12 VN dong

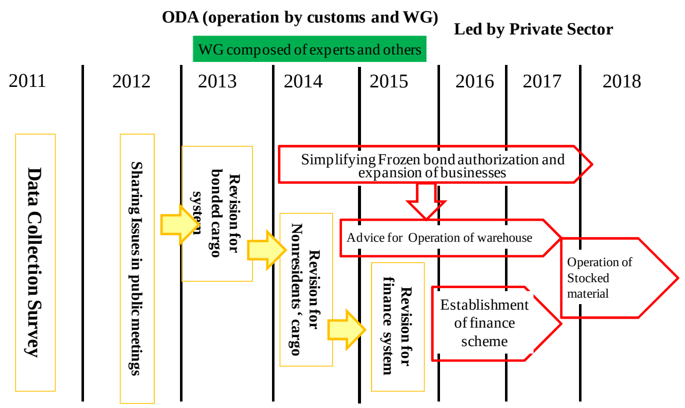
64 The net weight of frozen goods is likely to become small actually because the weight of ice includes. In addition, refer container equips temperature control devices so that demand for heavy weight transportation is stronger than general goods, resulting from the fact that cargo loading is forced to reduce for space/weight worth of temperature control equipment.

6.2.7 Institutional Reform for Bonded Cargo System

Project Name	Institutional Reform for Bonded Cargo System
Processed Food Category	All kind of Processed Food
Scheme	Technical Assistance
Background and Necessity of Project	Next page
Related ODA project	Training system strengthen project for improving customs officer's capability(2010 ～2012)

Project Purpose	Improvement for institutional framework on bonded cargo handling
Project Area	Hanoi (Customs)
Activities	✓ Promote relationship among concerning parties by counterparts for feasible ✓ Propose feasible action plans／advice for facilitated bonded cargo/warehouse system
Beneficiaries	Vietnamese Side: Logistics providers, Exporters Japanese Side: Japanese Exporter/manufacture, forwarding business
Input from Japan	JICA Expert:12M/M
Approximate Cost	JP¥ 36 Million
Period	2012-2014
Implementation System	Vietnamese Side: Directory of customs under Ministry of finance
Donor Coordination	None

Important Assumptions / Pre-Conditions	Agreement at Japan-Vietnam Cooperative Initiative
Impact	Vietnamese Side : ✓ Increase in export opportunity for SME exporter and job creation and income growth ✓ Regional development through increase of distribution and contribution to formation of national network ✓ Improvement in financial status of local producer Japanese Side : ✓ Simplification of procedure on export freight ✓ Increase in convenience on distribution system for SMEs
Possibility of Japanese Business Penetration	Business Opportunity: ✓ Japanese manufacture/exporter ✓ Japanese companies to be located in Vietnam Target : ✓ Importers of Vietnamese fishery products



【Background and Necessity of Project】

i) Incentive for SME exporters

Export in small lot tends to use service of warehouse operator because they need time to accumulate cargo to some degree where the full-load container shipment is available. This warehouse facility is favorable to get approval for handling export cargo as bonded warehouse. Unfortunately, very little number of warehouse operators is providing bonded-warehouse service for food products even in HCM area.

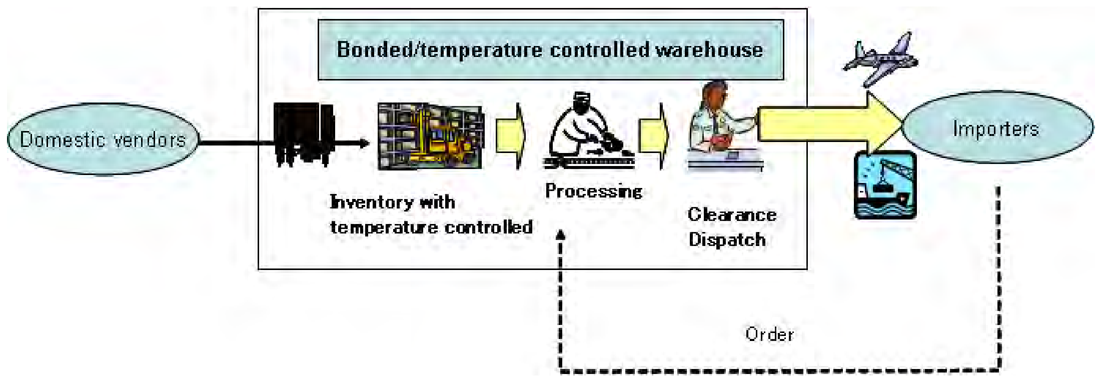
This is mainly because institutional and operational/frameworks for bonded warehouse are not user-friendly and it cost much to get business license from customs authority. In the case of agriculture/fishery materials, peak season is limited so that it is difficult to use such facility constantly in annual basis, resulting in the difficulty to withdraw license fee for bonded warehouse status. Thus, logistics operators are likely to be negative for bonded warhorse business for agricultural products. Consequently, SMEs lead to facing constrains for export because it is not easy for them to arrange outside warehouse until cargo lot grows enough for shipment.

ii) Processing and value add logistics service (next page illustration ”basic pattern)

Bonded warehouse system can make it easy for exporters to keep/hold inventory. If bonded warehouse service is feasible and practical, logistics providers certainly seek business chance; value add service including inventory, labeling, repacking and related processing.

Service users enable to dispatch their cargo Just-In-Time basis by using value added service. If they make use of air shipment, business opportunity will be able to expand to small lot/ time dedicated service as like Internet shop

Basis pattern/ bonded/temperature controlled warehouse, providing value add processing operation



iii) Improvement finance situation of material producers (Next page illustration: option 1)

Since Vietnamese customs regulation adopt the policy “of non resident inventory scheme”, it is feasible for importers/warehouse operator to transfer cargo ownership from manufactures to them when cargo inbound to warehouse. This means that manufactures can receive payment when they delivered cargo to warehouse.[65]

This scheme still includes issues to be resolved; like credit, the name of cargo certification,

[65] This service is already provided as the name of “logistics finance service “in Japan and other nations.

payment and remittance. The realization of "Non resident inventory scheme" enables to improve manufacture's finance situation. This is certainly beneficial for Vietnamese agricultural material manufactures.

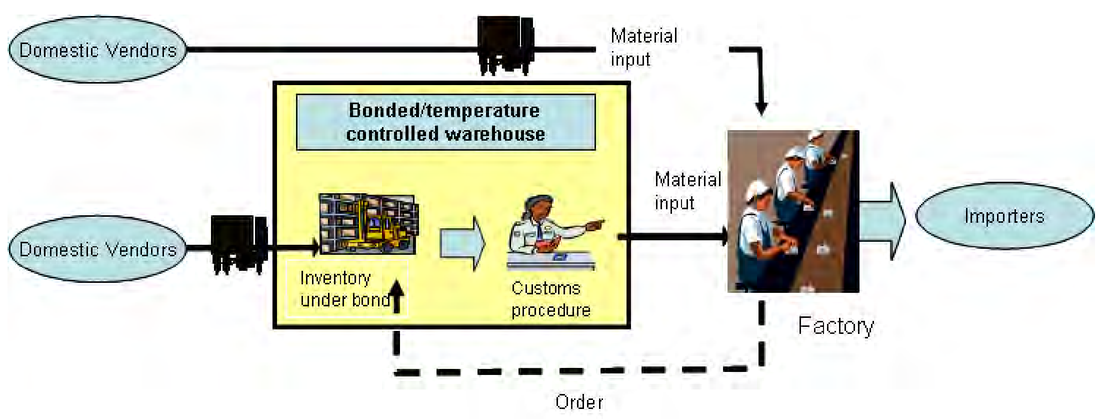
iv) Promotion of import material usage (Next page illustration: option 2)

Since Vietnamese processing industry depend on import materials, developed bonded warehouse which enables large volume inventory is surely effective way to facilitate customs procedure and material procurement cost reduction.

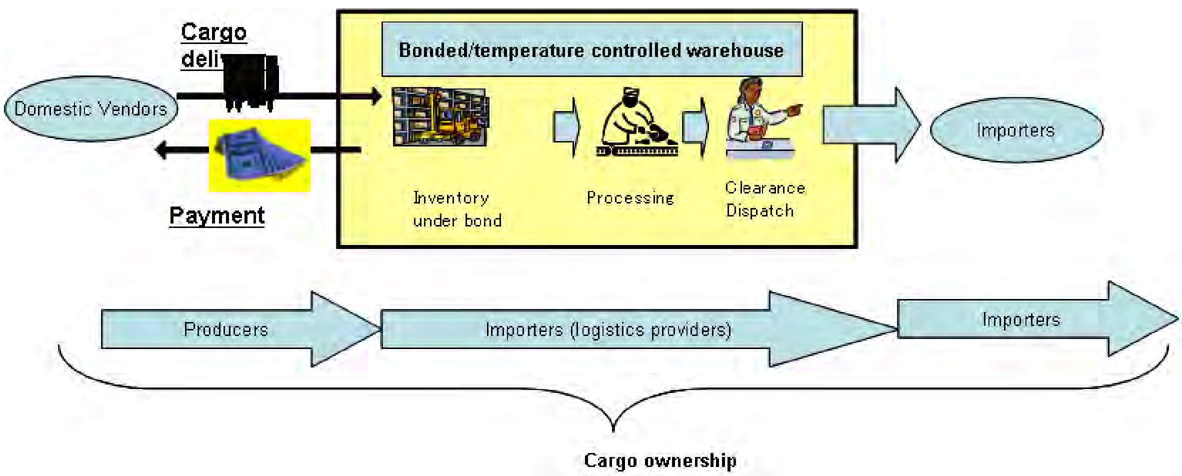
Along with activating SME investment, small lot production and processing on commission scheme are prosperous. Moreover, relating operations of trade, distribution, and logistics are forecasted to outsource. The value add logistics service mentioned at above ii) is beneficial for small lot business.

Ultimately, it comes to be practical to purchase best materials from global market at reasonable cost.

Option 1: Bonded/temperature controlled warehouse, providing "Non resident inventory" and logistics finance service



Option 2: Bonded/temperature controlled warehouse, targeting promotion on import material usage



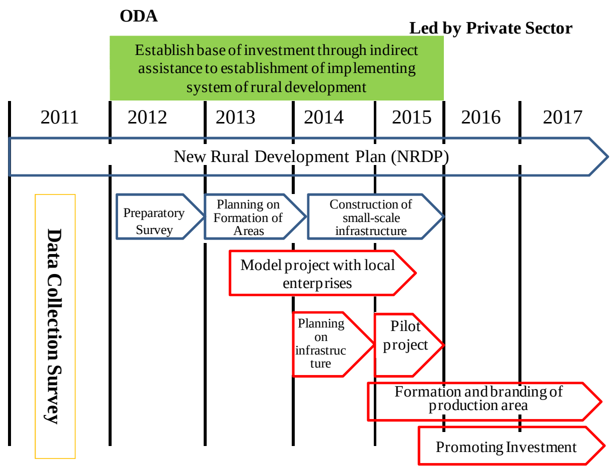
6.2.8 Project for Strengthening Implementation System for Rural Development and Calling for Investment in Food Industry in the Northern Region

Project Name	Project for Strengthening Implementation System for Rural Development and Calling for Investment in Food Industry in the Northern Region
Processed Food Category	All kind of Processed Food
Scheme	Yen Loan
Background and Necessity of Project	Next page
Related ODA project	Northwest Region Rural Development Project (2010~2015) Project for Sustainable Forest Management in the Northwest Watershed Area (2010~2015) Project on Capacity Development on Artisan Craft Promotion for Socio-economic Development in Rural Area(2008~2011)

Project Purpose	Development model in rural area is established through planning and constructing small-scale infrastructure mainly lead by communes. Furthermore, through planning on improvement of agricultural business environment for calling investment in agriculture and rural sector, pilot project, joint project between farmers and company, rural area development model with high social and economic effects are established.
Project Area	northern province near Hanoi
Activities	✓ Support commune led planning on development of local brand on agricultural and rural sector ✓ Improving small-scale infrastructure necessary for development of local brand based on farmers' needs ✓ Building linkage model project between local enterprises and farmers(support indirectly quality management and contracted production) ✓ Formulation of plan on improvement of business environment for calling Japanese investment in agriculture and rural sector, conduct pilot project
Beneficiaries	Vietnamese Side: People living in northern province near Hanoi Japanese Side: Food processing countries to be located in Vietnam
Input from Japan	Yen Loan + Consulting Service
Approximate Cost	JP¥ 2 billion
Period	2013～2015
Implementation System	Vietnamese Side : MARD Department of Planning and Investment, DARD,District Peoples' Committee, Commune Peoples' Committee
Donor Coordination	SIDA "Chia Se Poverty Alleviation Programme"

Important Assumptions / Pre-Conditions	✓ Central ministries and local government put a priority on agricultural food industry for calling investment.

	✓ There is no big change in social economical circumstances in targeted province. ✓ Prices of agricultural products do not fall significantly
Impact	Vietnamese Side : ✓ Enhancement of formulation and implementation of participatory development plan ✓ Building basic infrastructure before and after development project ✓ Promoting economic development in northern provinces near Hanoi Japanese Side : ✓ Building base for calling investment from Japanese food processing companies to be located in Vietnam
Operation and maintenance system	Ensure Sustainability:Determine implementing organization (Project Management Unit) and operation and maintenance and management organization such as taskforce including provincial DARD, district, and commune peoples' committee. Ensure Scalability:TOT (Training of Tutors) to the provincial DARD, district / commune People's Committee
Possibility of Japanese Business Penetration	Business Scale and Opportunity: ✓ Japanese companies operating in Vietnam ✓ Japanese companies which will be penetrate Target, Scale of Market, Payout Time : ✓ Processed food companies import from Vietnam



【Background and Necessity of Projects】

Necessity for Vietnamese Side

New Rural Development Plan (NRDP) is based on the Decision of Prime Minister No.800/ QD-TTg issued in June, 2010, and has being conducted aiming at improvement of social and economic circumstances in rural area through commune led participatory planning and implementation. NRDP has 19 criterias (planning, transport, irrigation, electricity, domestic water supply, health station, rural market, school, residential house, income, poor household, labor pattern, form of productive organization, education, health care, culture, clean and nice environment, socio-political system), and set targets for each criteria[66]. NRDP also has specific objectives as follows: “By 2015, 20% of the communes reach the criteria, and by 2020, 50% of the communes reach the criteria”. NRDP is to improve agricultural productivity, improve farm income through the industrialization of agriculture, furthermore, fostering commercial farmers through linkages with domestic and foreign investors.

According to SIDA which assisted Vietnamese government in a series of activities to formulate NRDP, and officer of MPI which is implementing organization, NRDP was formulated based on the result of pilot projects conducted in 11 communes from 2009. NRDP has not referred lessons learned from many projects which had been conducted by each development partner, thus, it needs reviewing by JICA and other donors.

Necessity for Japanese Side

As mentioned above, raw material production area for processed food is concentrated in the southern region. However, northern region including Hanoi has suitable conditions especially for vegetable production. In northern region, many varieties of vegetables have been produced and big local market has been established.

NRDP adopted bottom-up development processes (ex. the Commune People’s Committees are to conduct planning and to collect comments from the community and submit the plans to the District People’s Committees). In NRDP, establishment of land use plan and plan for development of socio-economic-environmental infrastructure are to be formulated, and Japanese government can contribute to promoting investments from Japan through indirect assistance to this field. NRDP has possibility of contribution to building basic infrastructure for promoting Japan’s investment. Firstly, through indirect support to the planning of effective use of resources including land-use planning, make clear i) direction of infrastructure development to form a model of participatory development in rural villages,, ii) direction of the infrastructure needed to attract investors.

[66]For example, “Rate of commune road, inter-commune road is asphalted or concreted that obtains technical standard issued by Ministry of Transport”

6.2.9 PRIVATE - PRIVATE Project

Project	Contents
Sales of Agricultural Machinery	Especially, 4-wheel tractor with equipment for paddy fields, rice combine-harvester, rubber-role type husking unit are hopeful.
Sales of Japonica rice, Japonica rice processed food (e.g. boxed lunch) for Japanese supermarket which will be located in Vietnam	Big Japanese supermarket (which will be located in Ho Chi Minh) plans to procure the processed Japonica rice foods from Japanese companies in Vietnam.
Rice wine, liquor (Shochu), Sweet-sake (Mirin), Instant-rice, Rice-bran-oil processing and export (EU, Russia, Middle East, Other Asian countries)	The popularity of Japanese food is spreading, and exports to Europe will increase (by Japanese rice processing company in Ho Chi Minh). Russia and Vietnam will conclude FTA in 2012, and export to Russia will increase. Instant rice for Middle East, rice bran-oil for Japan are promising.
Introduction of Japanese high quality seeds (nursery growing service, sales of good Japanese seed)	VinaSeeds I is eager to cooperate with Japanese big seed company and import Japanese high quality seeds.
Authorized Inspection / certification service by private sector	There is no inspection institution authorized by Japanese Ministry of Health, Labour and Welfare. Furthermore, the end of governmental inspection centers are not working well. Thus, inspection institutions which can respond to Japanese Positive List System for Agricultural Chemical Residues in Foods have big business opportunity.
Sales of Secondary Processing Machinery, Providing Secondary Processing Service (promising for rice, vegetable, fish processed food)	Promising machineries are as follows: Rice processed food: small rice flour milling machines, rice noodle machines Vegetable processed food: slicers, washers, dryers, wrappers Fishery processed food: ponds purification equipments, precious filleting machines
Frozen Seafood Hotpot for Domestic Market of Vietnam, Frozen / Dried Vegetable and Japanese Pickle for export to Japan	Some Japanese businesses are considering commercialization of frozen seafood hotpot package. It will promote the investment in high degree of processing of fish from Japanese companies. Frozen vegetable export to Japan from Vietnam will continue steadily. For Japanese pickles, it is necessary for companies to procure salt from Nha Trang because salt of another area contains bacteria. There is a Japanese company which succeeded in business dealing Japanese pickles. Furthermore, Korean companies are producing Korean pickles in Ho Chi Minh.
Catching, processing, storage and export of tuna / skipjack	There are two tuna fishing area; one is in the central region, other is in the south region. Vietnam government changed its policy to issue business licenses concerning tuna to foreign investors. In 2011, Japanese JV organized by major IT retailing company got the first business license as Japanese companies from Phu Yen province.
Establishment of Cold Storage and Cold Storage Service	Most of Japanese companies feel necessity of investment for cold storage. However, it seems that there may be some difficulty for this business. There seems to be a business opportunity in the confluence of economic corridor near Da Nang. The first-mover advantage will be obtained by the company which advanced Vietnamese cold storage market at first.
Development of Cold Chain	In the field of fish and livestock processing, it is assumed to exist that the demand for development of cold-chain. A Major Japanese logistics company monopolizes the cold chain business of Japanese companies in Vietnam. There is a problem of traffic volume; freight traffic of North-South is extremely lower than that of South-North.
Bonded Warehouse	Deregulation, revision of the system on bonded warehouse will promote investment from many logistics companies.
Catfish Export	Shrimp export market is becoming saturated. Catfish export to Japan has been increasing every year, and new markets have been progressing as baby food and school food service. Japan already imports 20-30 t of catfish per year.
Manufacturing High Degree of Fish Processed Food Fish Processed Food (Fry, Paste) Export to European Countries	Degree of processing of Vietnamese fishery processed food is low, such as fillet, drying. Thus, it is supposed that export amount of fish processed food by Myanmar and African countries surpass Vietnamese one. Vietnamese companies are anxious for transferring high degree processing technology from Japanese companies. Japanese companies dealing high degree processing food of fish (e.g. fish ball) located in rural area in Japan are considering investment in food business in Vietnam. Their target is domestic market of Vietnam (by Japan

	Chamber of Commerce in Ho Chi Minh).
Practical Use of Residues from Fishery food (Only for Large Company)	i) Fertilizer or feed products (assorted feed combined with rice bran oil) ii) Extracted materials from collagen or chitosan
Feed Supply as Trigger for Vertical Integration of livestock industries	As already seen in the movement of a major trading company, there is a movement aimed at vertical integration, including the livestock feed business in partnership with leading companies in Vietnam.
Artificial Insemination Services for Cows and Cattle	Particularly good cattle and cow can be fattened in northern Vietnam, Artificial insemination services using Japanese technology have business opportunities.
Modernized Forwarding Operation (Supermarket, Convenience Store)	It seems that many Japanese supermarkets and convenience stores will be located in the near future.
Restaurant (Japanese Food, Sushi)	The market is becoming saturated in Japanese restaurant. However, Japanese restaurants can be stable business if they can continuously provide fresh fishery products and friendly services.

Source) Interview conducted by Survey Team

Survey of food processing industry in Vietnam

Quastionare : *Please fill the form (gray area) and overwrite this file to answer.*

1. About basic information of the company.

(1) Company Name	
(2) Name of Respondent	
(3) Contact	[Address] [Tel] [E-Mail]
(4) Foundation	/ (yyyy/MM : year / month)
(5) Employees*	
(6) Business Summary	[Main Products / Main Sales Items]
	[Annual Production / Amount of Dealing] (ex. Processed food of rice: 10 ton/year)
	[Main Market] (ex. Local Supermarket)

* The companies fall into the category of shosha (trading company) or wholesaler are requested to indicate the number of persons who are belonging to the section in charge.

2. About food material procurement of your company.

(1) Please fill the checkbox for appropriate items for food material supplier of your company.

(You can select multiple items for this question)

☐[1] Private farm of your company (Cultivation area: ha)

☐[2] Contract farming with local farmers or farmers group

☐[3] Contract with local wholesaler or buyer

☐[4] Contract with local food processing company

☐[5] From abroad (Country Name:)

☐[6] Other (Write specifically)

(2) Please write procurement quantity of three main food materials of your company (in descending order).

If it is alright, please write the cultivation area (or number of livestock / aquaculture) also.

*1 Please select the item number of question (1). (ex. [1] Private farm of your company -[6] Others)

*2 Please select the item number; [1] North Vietnam, [2] Central Vietnam, [3] South Vietnam, or [4] Other country (with Name). (ex. [4] China).

Item	Procurement quantity per year	Annual cultivation area (ha)/ Number of livestock / Number of aquaculture	Suppliers*1	Region*2
	t	Select Unit	Select	Select
	t	Select Unit	Select	Select
	t	Select Unit	Select	Select

(2)-1 Please select the region which your company want to increase the procurement of food materials.

(You can select multiple items for this question)

☐[1] North Vietnam (District: province)

☐[2] Central Vietnam (District: province)

☐[3] South Vietnam (District: province)

☐[4] ASEAN countries (except Vietnam) ☐[5] European countries

☐[6] Japan ☐[7] China

☐[8] United States ☐[9] Other country (Name:)

(3) Does your company have any problem about quality or quantity irregularity of food materials for stable procurement ? If there are problems, please write the reason specifically.

[1] There are problems of material irregularity [2] Not so much problem [3] No Problem

Please select the number for most similar situation. Select:

Please write the reason of material irregularity:

(4) If you have problems with the safety of food materials, please write here specifically.

(5) If you need support for procurement of food materials or production by Japanese Government, please write here specifically.

3. About food processing of your company.

(1) Please specifically point out items which are prohibited in Vietnam, though which are allowed in Japan. (ex: food materials, food additives, law, rules, etc.)

Items	What is the inconvenience at Vietnam?
[1]	
[2]	
[3]	

(2) Are there any problems with food (or material) safety inspection in Vietnam?

How does your company consider about establishment of food inspection agency which is authorized by Japanese Government* for export products?

(Food safety authorities in Japanese Government: Ministry of Health, Labor and Welfare)

[1] There are problems with food inspection [2]Not so much problem [3] No Problem

Please select the number for most similar situation. Select:

How does your company consider about establishment of food inspection agency in Vietnam?

(3) Are there any problems of safety certification for food materials or processed food in Vietnam? How do you consider about establishment of food safety agency which supported by Japanese Government?

[1] There are problems with food safety certification [2]Not so much problem [3] No Problem

Please select the number for most similar situation. Select:

How does your company consider about establishment of food safety agency in Vietnam?

4. About logistic and marketing of food products.

(1) Please answer the selling area and percentage of your company's products. (Sort by sales volume)

Products	Selling Area				
	Vietnam			Overseas (Country name)	
	North	Central	South		
ex. ham	30%	10%	40%	20%	Japan
	%	%	%	%	
	%	%	%	%	
	%	%	%	%	

(1)-1 Please fill the checkbox for area where your company want to increase sales amount.
(You can select multiple items for this question)

☐[1] North Vietnam (District: province)
☐[2] Central Vietnam (District: province)
☐[3] South Vietnam (District: province)
☐[4] ASEAN countries (except Vietnam) ☐[5] European countries
☐[6] Japan ☐[7] China
☐[8] United States ☐[9] Other country (Name:)

(2) What is the problem of domestic truck transportation for shipment of materials or products in Vietnam?
(You can select multiple items for this question)

☐[1] No development of cold chain ☐[2] Uncertainty of transportation time
☐[3] Uncertainty of arrival time ☐[4] Impossibility of tracing shipments
☐[5] Loss or damage of shipments ☐[6] No existence of heavy truck
☐[7] No existence of retail transportation
☐[8] No deveropment or limitation of transportation network (for wide area)
☐[9] No problems

(2)-1 Please show the route facing problems.

Departure point of the route ( )
Arrival point of the route ( )

What are the problems of this route?

(3) How does your company think about the introduction of cold chain in Vietnam?

(You can check only <u>ONE ITEM</u> for this question)

☐ [1] We do not need cold chain.

☐ [2] We shall use cold chain in the future.

☐ [3] We need cold chain, but there are problems at now.

☐ [4] We already developed private cold chain in Vietnam by our company.

☐ [5] We are considering the introduction of cold chain by outsourcing, but contractor has problem.

(3)-1 Please show the route facing problems of cold chain.

Departure point of the route ( )

Arrival point of the route ( )

What are the problems of this route?

(3)-2 Please answer the cargo capacity for cold chain of your company.

(You can check only <u>ONE ITEM</u> for this question)

☐[1] There is enough capacity for preparing cold chain trucks in all area.

☐[2] There is enough capacity for preparing cold chain trucks in some area.

☐[3] Do not have enough cargo for full-truck load currently, but have expectation of cargo increase for arranging full-truck load

☐[4] Do not have enough cargo for full-trcuk load currently, and no expectation of cargo inraease for arranging full-truck load

(3)-3 Please answer the usage of refrigerated truck (for cold chain) of your company.

(You can check only <u>ONE ITEM</u> for this question)

☐[1] We allow the usage of refrigerated truck with mixed cargo of other companies.

☐[2] Private usage of refrigerated truck is desirable (depending on conditions).

☐[3] Do not think about the mixed cargo with other companies.

(3)-3-1 (Question for who checked “[2] Private usage of refrigerated truck is desirable...”)

What is the condition to introduce the private transportation for cold chain?

Condition:

(3)-3-2 (Question for who checked “[3] Do not think about the joint usage...”:)

Please write the reason why your company needs private transportation.

Reason:

(3)-4 Please fill the checkbox of regions where your company needs to build cold storage warehouse.
If you can show the place name, please write. (You can check and write only ONE ITEM for this question)

☐[1] Near large city ( ) ☐[2] Near small or medium city ( )
☐[3] North Vietnam ( ) ☐[4] Central Vietnam ( )
☐[5] South Vietnam ( ) ☐[6] Near the harbor or airport ( )

(3)-5 Please answer the usage of cold storage warehouse by your company.

☐[1] We allow the joint usage of warehouse with other companies.
☐[2] Private usage of warehouse is desirable (depending on conditions).
☐[3] Do not think about the joint usage of warehouse with other companies.

(3)-5-1 (Question for who checked “[2] Private usage of warehouse is desirable...”)
What is the condition for introduction of private warehouse?

Condition:

(3)-5-2 (Question for who checked “[3] Do not think about the joint usage...”)
Please write the reason.

Reason:

(4) Does your company use maritime transportation for international export or import?
Which port is used for shipping? Please fill the checkbox.
(You can select multiple items for this question)

☐ [1] No usage of maritime transportation
☐ [2] Saigon Port ☐ [3] Hai Phong Port ☐ [4] Da Nang Port
☐ [5] Other port in Central Vietnam (Name: port)

(4)-1 Does your company use air transportation service or have possibility of use in the future?
Please fill the checkbox. (You can check only <u>ONE ITEM</u> for this question)

☐ [1] No usage of air transportation
☐ [2] Have possibility of use air transportation in the future
☐ [3] Air transportation is already in use

(4)-1-1 (Question for who checked "[2] Have possibility of use air transportation in the future...")
What condition is required for usage of air transportation? (You can select multiple items for this question)

☐[1] To make product quality better using air transportation
☐[2] When flight frequency and route is suitable for the needs of the company
☐[3] Request for short-term delivery
☐[4] Request for retail delivery
☐[5] Other reason (Write specifically:)

(4)-1-2 (Question for who checked "[3] Air transportation is already in use...")
What is the problem of air transportation service? (You can select multiple items for this question)

☐[1] Screening deadline and pickup time for cargo takes long time.
☐[2] Customs clearence and quarantine takes long time.
☐[3] Limitation of transportation time by traffic regulation in the city.
☐[4] Problem for ensuring stable space.
☐[5] Low quality of cargo handling in air terminal.
☐[6] Facilities of temperature management is not enough or inconvinient.
☐[7] Other problems (Write specifically:)

5. Please answer the hopeful processed food item or field with high potential for business expansion of your company. If there is a problem for commercialization, please write below.

Items	Problem for commercialization

6. We will send the feedback of this survey for the companies which requires the results.
(You can check only ONE ITEM for this question)

Does your company require the feedback of this survey?	☐ Yes	☐ No

This is the end of the question.

Click the save icon to save the data.

Thank you very much for your kind cooperation!

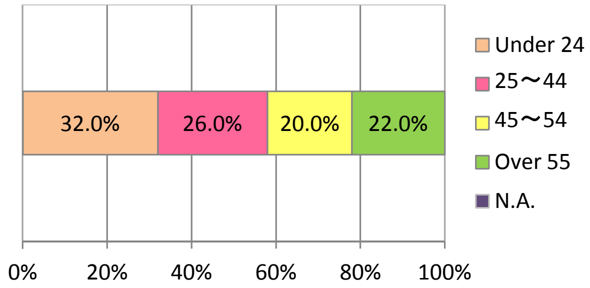
Cảm ơn nhiều !!

Questionnaire of Citizens about Processed Food <Hanoi>

1. Attribution of Respondent

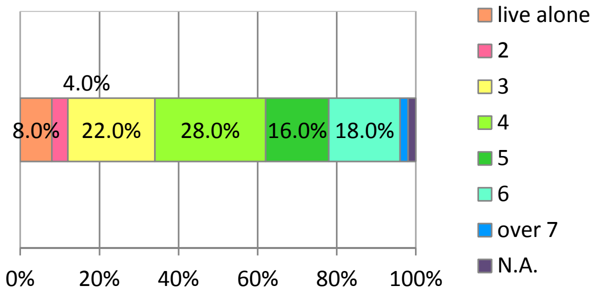
1-1. Age

		%	%(exclude "N.A."
Under 24	16	32.0%	32.0%
25～44	13	26.0%	26.0%
45～54	10	20.0%	20.0%
Over 55	11	22.0%	22.0%
N.A.	0	0.0%	
Total	50	100.0%	100.0%



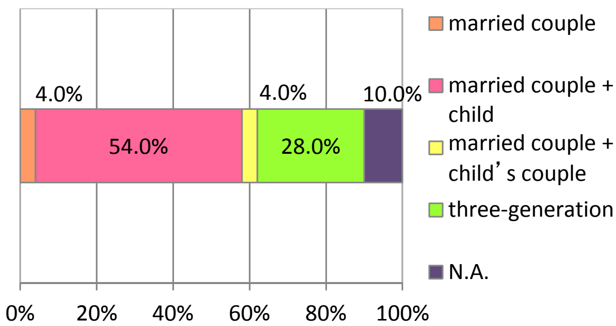
1-2. Number of family living together

		%	%(exclude "N.A."
live alone	4	8.0%	8.2%
2	2	4.0%	4.1%
3	11	22.0%	22.4%
4	14	28.0%	28.6%
5	8	16.0%	16.3%
6	9	18.0%	18.4%
over 7	1	2.0%	2.0%
N.A.	1	2.0%	
Total	50	100.0%	100.0%



1-3. Household Structrue

		%	%(exclude "N.A."
married couple	2	4.0%	4.4%
married couple + child	27	54.0%	60.0%
married couple + child's couple	2	4.0%	4.4%
three-generation	14	28.0%	31.1%
N.A.	5	10.0%	
Total	50	100.0%	100.0%



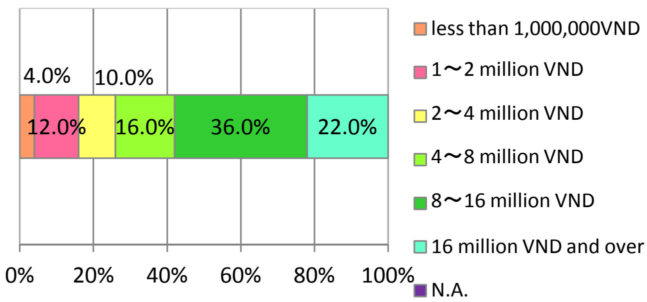
1-4. Main Income Source

Officer : 23　Farmer : 4　Part-time : 3　Driver : 2

Chef : 1　Doctor : 1　Pension : 1

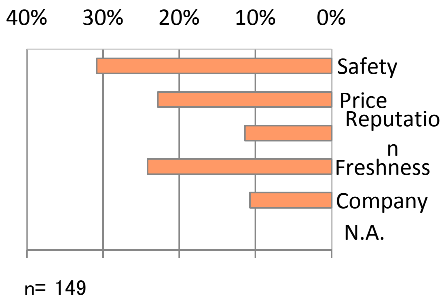
1-5. Monthly Income

		%	%(exclude "N.
less than 1,000,000VND	2	4.0%	4.0%
1～2 million VND	6	12.0%	12.0%
2～4 million VND	5	10.0%	10.0%
4～8 million VND	8	16.0%	16.0%
8～16 million VND	18	36.0%	36.0%
16 million VND and over	11	22.0%	22.0%
N.A.	0	0	
Total	50	100.0%	100.0%



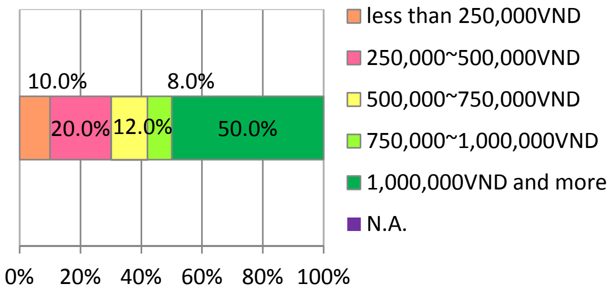
2. What do you pay attention to when you buy processed food?
Please pick up three (3) items according to importance for you. (multiple answers allowed)

		%	%(exclude "N.A.")
Safety	46	30.9%	30.9%
Price	34	22.8%	22.8%
Reputation	17	11.4%	11.4%
Freshness	36	24.2%	24.2%
Manufacturing Company	16	10.7%	10.7%
N.A.	0	0	
Total	149	100.0%	100.0%



3. How much do you spend on processed food per month?

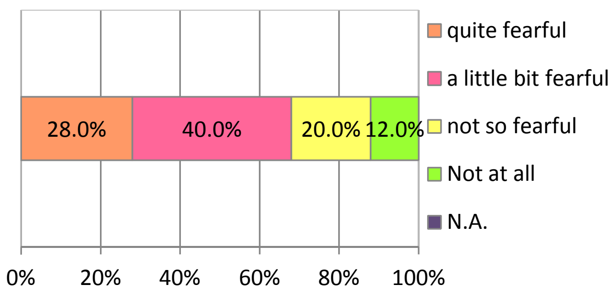
		%	%(exclude "N.A
less than 250,000VND	5	10.0%	10.0%
250,000~500,000VND	10	20.0%	20.0%
500,000~750,000VND	6	12.0%	12.0%
750,000~1,000,000VND	4	8.0%	8.0%
1,000,000VND and more	25	50.0%	50.0%
N.A.	0	0.0%	
Total	50	100.0%	100.0%



4. About safety of Vietnamese processed foods

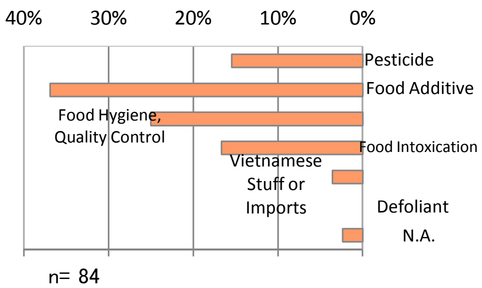
4-1. Do you feel fear of food safety?

		%	%(exclude "N.A
quite fearful	14	28.0%	28.0%
a little bit fearful	20	40.0%	40.0%
not so fearful	10	20.0%	20.0%
Not at all	6	12.0%	12.0%
N.A.	0	0.0%	
Total	50	100.0%	100.0%



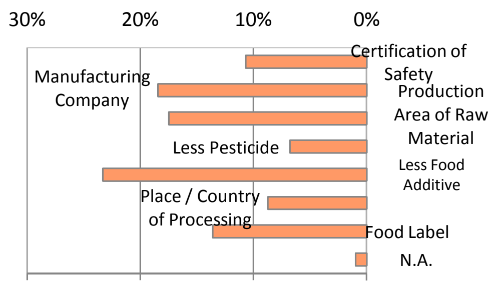
4-2. What is fear of food safety for you? (multiple answers allowed)

		%	%(exclude "N.A
Pesticide	13	15.5%	15.9%
Food Additive	31	36.9%	37.8%
Food Hygiene, Quality C	21	25.0%	25.6%
Food Intoxication	14	16.7%	17.1%
Vietnamese Stuff or Imp	3	3.6%	3.7%
Defoliant	0	0.0%	0.0%
N.A.	2	2.4%	
Total	84	100.0%	100.0%



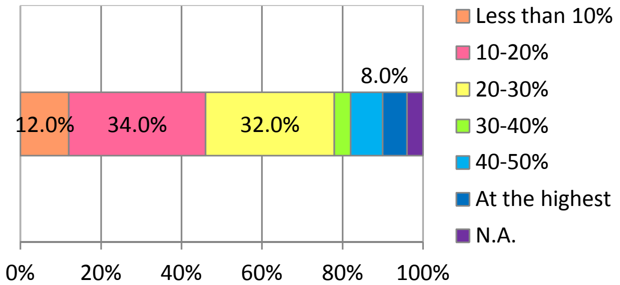
4-3. What is determination of safe food for you?

		%	%(exclude "N.A
Certification of Safety	11	10.7%	10.8%
Manufacturing	19	18.4%	18.6%
Production Area of Raw Material	18	17.5%	17.6%
Less Pesticide	7	6.8%	6.9%
Less Food Additive	24	23.3%	23.5%
Place / Country of Proc	9	8.7%	8.8%
Food Label	14	13.6%	13.7%
N.A.	1	1.0%	
Total	103	100.0%	100.0%



4-4. How much are you willing to pay for safe food compared with other food?

		%	%(exclude "N.A.
Less than 10%	6	12.0%	12.5%
10-20%	17	34.0%	35.4%
20-30%	16	32.0%	33.3%
30-40%	2	4.0%	4.2%
40-50%	4	8.0%	8.3%
At the highest	3	6.0%	6.3%
N.A.	2	4.0%	
Total	50	100.0%	100.0%



5. Safe food / Unsafe food

5-1. What is safe processed food for you?

Seafood:27(Fish:10、shrimp:11) Meat:16(sosage:8、Smoke Chicken:2) Vegetable:7

Yoghurt:4 Milk:2 Fastfood:1、Manufactured by well-known company:1

No toxic additive:1 Meet the required standards of Ministry of Health:1

5-2. What is unsafe processed food for you?

Vegetable:23、 Meat:22 Fruit:6、 Seafood:11、 Jam:3、Including preservative, food additive:2、 unsanitary processing :1

6. About production area of safe raw material of processed foods

6-1. Which area produce safe raw material of processed foods in Vietnam?

【Rice Processing Food】
Thai Binh:14(Vu Thu1、Tien Xuong1、Tien Hai1, Dong Hung1)、Dien Bien:8
Nam Dinh:6(Truc Ninh1、Xuan Truong1、Hai Hau1)
Hai Duong:4、Soc Son within Hanoi:2、central region:1、all coun:2、Lai Chau:1、Ha Tinh:1、Mountainous area:1

【Vegetable Processing Food】
Hanoi:13(うち、Dong Anh4)、Vinh Phuc:3、Thai Binh:3、Hung Yen:2 Rural Area:2
Hai Duong:1、 Bac Ninh:1、 Thai Nguyen:1、Da lat:1、Hoa Binh:1、Bac Giang:1

【Fruits Processing Food】
Hung Yen:9、Hanoi:5、Bac Giang:3、Thai Binh:3、Hai Duong:2、Hoa Binh:2
Binh Duong:1、Long An:1、Binh Phuoc:1、Dong Nai:1、Thai Nguyen:1

【Meat Processing Food】
Vinh Phuc:3、Nam Dinh:3、Hanoi:3、Bac Ninh:2、Thai Nguyen:1、Hung Yen:1、Bac Kan:1、Bac Giang:1

【Fishery Processing Food】
Nghe AnCua Lo:4、Hai Phuong:3、Thanh Hoa:3、Hanoi:3、Thai Binh:3、Nam Dinh:1、Nha Trang:1

【Milk】
Hanoi 20 (Bavi: 16)、Son La:14(Moc Chau:12)、Nghe An:1

6-2. Which area produce safe raw material of processed foods outside Vietnam?

【Rice Processing Food】
Japan：13、Other ASEAN Countries：11、European Countries：4、United States：3

【Vegetable Processing Food】
Japan：18、Other ASEAN Countries：6、United States：3、European Countries：2、China1

【Fruits Processing Food】
Japan：16、European Countries：11、United States：9、Other ASEAN Countries：4、China2、Other（New Zealand 4）

【Meat Processing Food】
Japan：13、European Countries：13、United States：9、Other ASEAN Countries：3、Other（Australia 3）

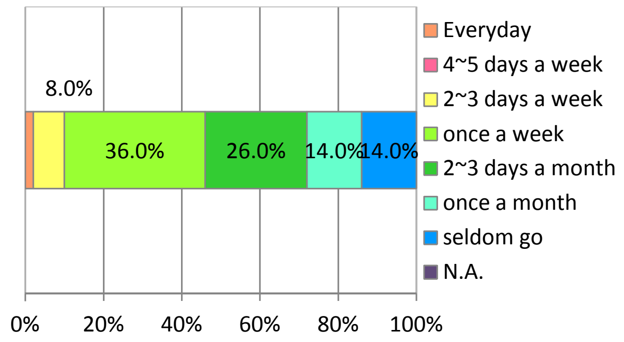
【Fishery Processing Food】
Japan：13、European Countries：4、Other ASEAN Countries：3、United States：3、China：1

【Milk】
United States：17、Japan：16、European Countries：11

7. About frequency of buying foods in market

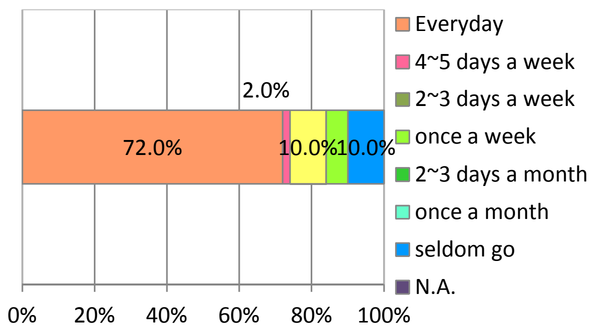
7-1. How often do you go to supermarket?

		%	%（exclude ″N.A.″
Everyday	1	2.0%	2.0%
4~5 days a week	0	0.0%	0.0%
2~3 days a week	4	8.0%	8.0%
once a week	18	36.0%	36.0%
2~3 days a month	13	26.0%	26.0%
once a month	7	14.0%	14.0%
seldom go	7	14.0%	14.0%
N.A.	0	0	
Total	50	100.0%	100.0%



7-2. How often do you go to wet market?

		%	%（exclude ″N.A
Everyday	36	72.0%	72.0%
4~5 days a week	1	2.0%	2.0%
2~3 days a week	5	10.0%	10.0%
once a week	3	6.0%	6.0%
2~3 days a month	0	0.0%	0.0%
once a month	0	0.0%	0.0%
seldom go	5	10.0%	10.0%
N.A.	0	0	
Total	50	100.0%	100.0%



Questionnaire of Citizens about Processed Food ＜Ho Chi Minh＞

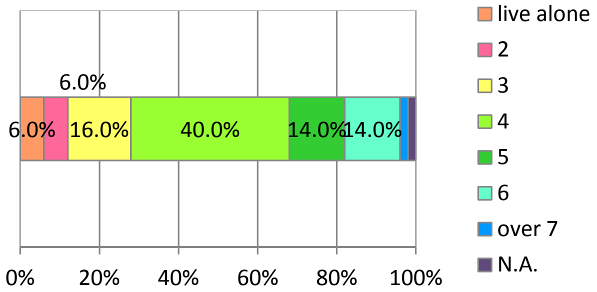
1. Attribution of Respondent

1-1. Age

		%	%(exclude ″N./
Under 24	14	28.0%	28.0%
25～44	14	28.0%	28.0%
45～54	12	24.0%	24.0%
Over 55	10	20.0%	20.0%
N.A.	0	0.0%	
Total	50	100.0%	100.0%

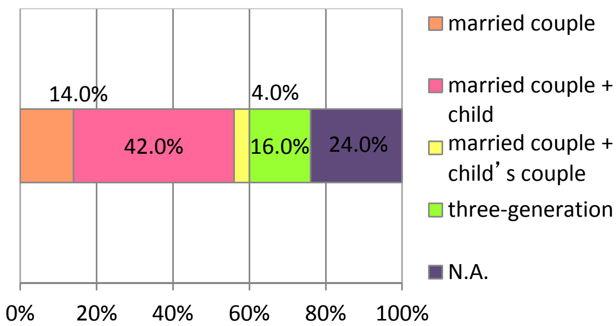
1-2. Number of family living together

		%	%(exclude ″N.A.″
live alone	3	6.0%	6.1%
2	3	6.0%	6.1%
3	8	16.0%	16.3%
4	20	40.0%	40.8%
5	7	14.0%	14.3%
6	7	14.0%	14.3%
over 7	1	2.0%	2.0%
N.A.	1	2.0%	
Total	50	100.0%	100.0%



1-3. Household Structrue

		%	%(exclude ″N.A.″
married couple	7	14.0%	18.4%
married couple + child	21	42.0%	55.3%
married couple + child's couple	2	4.0%	5.3%
three-generation	8	16.0%	21.1%
N.A.	12	24.0%	
Total	50	100.0%	100.0%



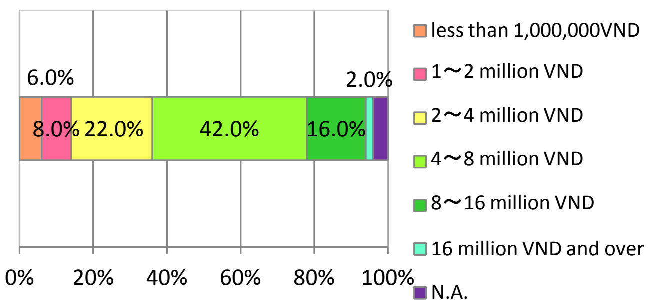
1-4. Main Income Source

Officer : 8　Teacher : 4　Part-time : 1　Driver : 1

Chef : 1　Business : 25　Pension : 4　Housewife : 3

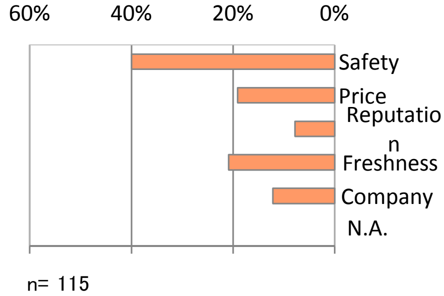
1-5. Monthly Income

		%	%(exclude ″N..
less than 1,000,000VND	3	6.0%	6.3%
1～2 million VND	4	8.0%	8.3%
2～4 million VND	11	22.0%	22.9%
4～8 million VND	21	42.0%	43.8%
8～16 million VND	8	16.0%	16.7%
16 million VND and over	1	2.0%	2.1%
N.A.	2	4.0%	
Total	50	100.0%	100.0%



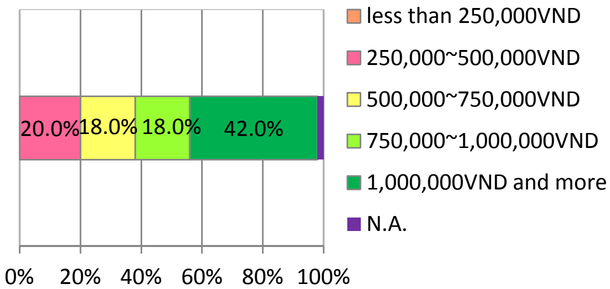
2. What do you pay attention to when you buy processed food?
Please pick up three (3) items according to importance for you. (multiple answers allowed)

		%	%（exclude "N.A."）
Safety	46	40.0%	40.0%
Price	22	19.1%	19.1%
Reputation	9	7.8%	7.8%
Freshness	24	20.9%	20.9%
Manufacturing Company	14	12.2%	12.2%
N.A.	0	0	
Total	115	100.0%	100.0%



3. How much do you spend on processed food per month?

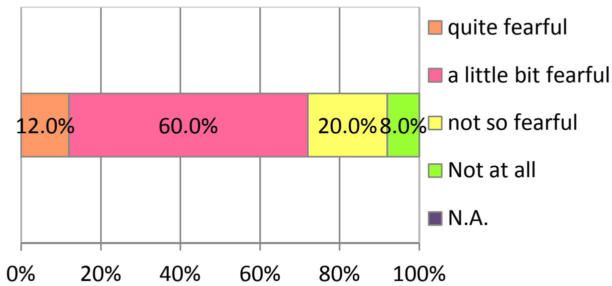
		%	%（exclude "N.A
less than 250,000VND	0	0.0%	0.0%
250,000~500,000VND	10	20.0%	20.4%
500,000~750,000VND	9	18.0%	18.4%
750,000~1,000,000VND	9	18.0%	18.4%
1,000,000VND and more	21	42.0%	42.9%
N.A.	1	2.0%	
Total	50	100.0%	100.0%



4. About safety of Vietnamese processed foods

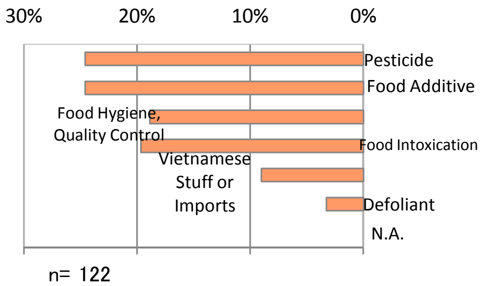
4-1. Do you feel fear of food safety?

		%	%（exclude "N.A
quite fearful	6	12.0%	12.0%
a little bit fearful	30	60.0%	60.0%
not so fearful	10	20.0%	20.0%
Not at all	4	8.0%	8.0%
N.A.	0	0.0%	
Total	50	100.0%	100.0%



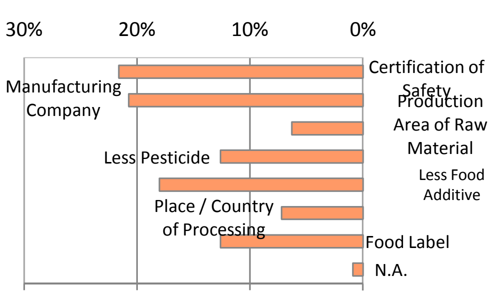
4-2. What is fear of food safety for you? (multiple answers allowed)

		%	%（exclude "N.A
Pesticide	30	24.6%	24.6%
Food Additive	30	24.6%	24.6%
Food Hygiene, Quality C	23	18.9%	18.9%
Food Intoxication	24	19.7%	19.7%
Vietnamese Stuff or Imp	11	9.0%	9.0%
Defoliant	4	3.3%	3.3%
N.A.	0	0.0%	
Total	122	100.0%	100.0%



4-3. What is determination of safe food for you?

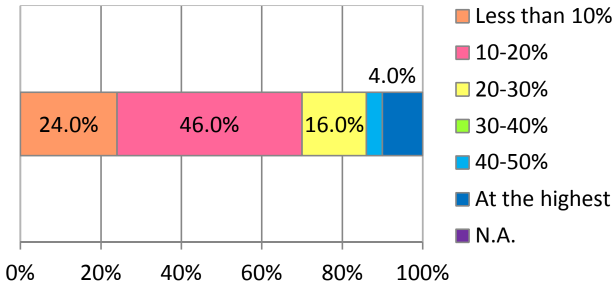
		%	%(exclude "N.A
Certification of Safety	24	21.6%	21.8%
Manufacturing	23	20.7%	20.9%
Production Area of Raw Material	7	6.3%	6.4%
Less Pesticide	14	12.6%	12.7%
Less Food Additive	20	18.0%	18.2%
Place / Country of Proc	8	7.2%	7.3%
Food Label	14	12.6%	12.7%
N.A.	1	0.9%	
Total	111	100.0%	100.0%



n= 111

4-4. How much are you willing to pay for safe food compared with other food?

		%	%(exclude "N.A.'
Less than 10%	12	24.0%	24.0%
10-20%	23	46.0%	46.0%
20-30%	8	16.0%	16.0%
30-40%	0	0.0%	0.0%
40-50%	2	4.0%	4.0%
At the highest	5	10.0%	10.0%
N.A.	0	0.0%	
Total	50	100.0%	100.0%



5. Safe food / Unsafe food

5-1. What is safe processed food for you?

Canned Food: 13 (Fish canned food: 3, produced by VISSAN: 2, sold in open market : 1)

Brands Food: 10 (well advertized in the supermarket: 2) Traceability: 7 Hygienic: 5

Meet the required standard of Ministry of Health: 4 Labeled date of produce, expire date: 4

No Food Additive: 2 No Pesticide: 1 Good Reputation: 1 No Chemical Preserve: 1

5-2. What is unsafe processed food for you?

No Brands: 10, No Traceability: 10, sold in wet market : 6, unsanitary food: 6, meat : 5, many food additive: 4. Fish:4, Vegetable: 3

6. About production area of safe raw material of processed foods

6-1. Which area produce safe raw material of processed foods in Vietnam?

【Rice Processing Food】

Long An: 20(Can Duoc: 4)	Mekong Delta Region: 14	Tien Giang : 5
Thai Binh : 5	An Giang: 3	Da Lat:2
Phu Yen : 2	Vinh Long : 1	Dong Thap: 1
Can Tho: 1	Red River Delta: 1	

【Vegetable Processing Food】

Lam Dong: 15(Da Lat:12)	Ho Chi Minh : 1	Contry Area: 1	Long An : 1

【Fruits Processing Food】

Lam Dong : 11 (Da Lat:9)	Mekong Delta Region: 6	Dong Nai: 2

【Meat Processing Food】

Dong Nai : 6 (Bien Hoa: 2)	Ho Chi Minh: 4	Long An: 3	Dak Lak: 1

【Fishery Processing Food】

Khanh Hoa : 13 (Nha Trang: 10)	Ba Ria - Vung Tau : 8	Ca Mau: 4	Central Region: 3
Phu Yen: 2	An Giang: 1	Vinh Long: 1	

【Milk】

Dong Nai : 26 (Long Thanh: 19)	Ho Chi Minh : 3	Hanoi: 2	Lai Chau: 1	Son La:1

6-2. Which area produce safe raw material of processed foods outside Vietnam?

【Rice Processing Food】
Other ASEAN Countries:25、Japan:10、United States:2、European Countries:1、China:1

【Vegetable Processing Food】
United States:11、European Countries:11、Japan:10、Other ASEAN Countries:3、China:1、Others(Korea):1

【Fruits Processing Food】
United States:20、European Countries:11、Japan:6、Other ASEAN Countries:2、China:1

【Meat Processing Food】
United States:13、Japan:10、European Countries:8、Other ASEAN Countries:2、Other(Australia 2)

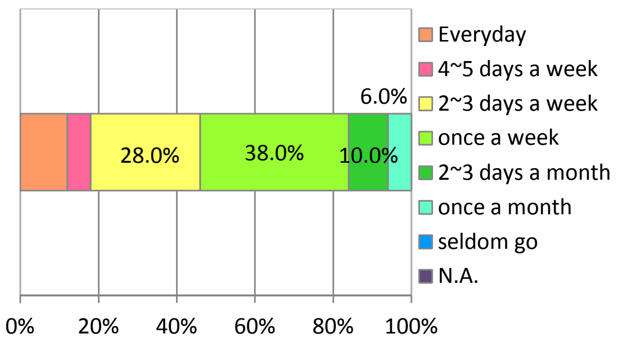
【Fishery Processing Food】
Japan:27、European Countries:3、United States:2、Other ASEAN Countries:1、China:1

【Milk】
United States:22、European Countries:15、Japan:7、Other ASEAN Countries:1

7. About frequency of buying foods in market

7-1. How often do you go to supermarket?

		%	%(exclude "N.A."
Everyday	6	12.0%	12.0%
4~5 days a week	3	6.0%	6.0%
2~3 days a week	14	28.0%	28.0%
once a week	19	38.0%	38.0%
2~3 days a month	5	10.0%	10.0%
once a month	3	6.0%	6.0%
seldom go	0	0.0%	0.0%
N.A.	0	0	
Total	50	100.0%	100.0%



7-2. How often do you go to wet market?

		%	%(exclude "N.A
Everyday	24	48.0%	48.0%
4~5 days a week	4	8.0%	8.0%
2~3 days a week	8	16.0%	16.0%
once a week	3	6.0%	6.0%
2~3 days a month	0	0.0%	0.0%
once a month	0	0.0%	0.0%
seldom go	11	22.0%	22.0%
N.A.	0	0	
Total	50	100.0%	100.0%