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Analysis of vegetable value chain in Thai Binh province



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I. Abstract

Thai Binh province is well – known as the first province in the whole country reached productivity of rice 5 tons/ha. It also is reminded as name “homeland of 5 tons”, “Thai Binh rice homeland”. However, according to provincial statistics in 2004, area and yield of rice are reducing gradually after the year 2001 (in 2001 area of rice was reduced from 173,338 ha down to 168,555 ha in 2004), area of vegetable has oriented increasingly (in 2001 area of vegetable was 23,500 ha, occupying 24.2% compare to 27,908 ha, occupying 29% agricultural land area). Total of vegetable yield was also augmented from 462,585 tons in 2001 up to 608,673 tons in 2004. The districts having big vegetable area are Hung Ha (5,628 and Vu Thu (4,875 ha).

Surveying in the two districts are Vu Thu and Thai Thuy has shown the high differences of vegetable production and consumption situation. In Vu Thu district, vegetable are widely produced in many communes that cause much difficulty in consuming and weakness in vegetable purchasing system of dealers. There is channel of vegetable selling to Da Nang city but it is only operated in one commune. In Thai Thuy district, specialized areas are established more clearly, a part of vegetable is processed in two factories for export. Many vegetable areas are contracted between factories and households.

Both of Thai Thuy and Vu Thu do not have concentrated vegetable trade center. Almost vegetable are consumed by small and retail system.

II. Objective

- Examining the scale and characteristics of vegetable production and circulation this province.
- Examining structure of value chain, main circulation channels, scale and operation characteristics of participating stakeholders.
- Analyzing the difficulty in production and circulation of vegetable and showing orientation of suitable interference.

III. Methods of study

III.1. Methods of information collection

In the implementation process, we use both of primary and secondary information sources:

- The primary information source: collecting available report, documents and figures related to vegetable value chain in this province.
- Secondary information source: Applying the method of commodity researches aim at collecting through accessing and interviewing the stakeholders (by questionnaire). Expert meeting method is also used, Experts come from many of researched section, and this is basic for selection the area of study.

III.2. Method of selecting area of study

Areas of study are selected base on available information about vegetable value chain, statistical figures and reference expert’s ideas especially consultancy of local stakeholders. The two districts are selected including Vu Thu and Thai Thuy. Each district has owned characteristics.

Vu Thu district:

- Diversification of channels and stakeholders participating value chain.
- Vegetable is the decisive plant in production system with concentrated area, contributing an important part to the socio economic development and life in the locality.
- The linkage of internal value chain stakeholders to big external province market such as Ha Noi and southern province.

Thai Thuy district:

- The strongly development of crops in the recent years.
- It has vegetable export channel.
- The model of contract of vegetable consumption between foodstuffs Export Company with farmers through cooperative develops strongly.

III.3. Method of actual implement

In order to implement this study, we deploy according to below steps:

Step 1: Identifying the scale and characteristic of vegetable production through statistical figures and quickly diagnosed information so as to evaluate production and the production concentrated area in the province. The characteristics of each production area aim at classifying area following to production characteristics and kind of products.

Step 2: Describing processing operation and commercial systems of fresh vegetable. Organizing the expert conference to collect information about processing operation in province. Identifying concentrated commercial area as the scale, characteristics and market structure. Then, we estimate the scale of production and vegetable consumption structure of province.

Step 3: Surveying stakeholders in the value chain in order to evaluate their scale, operation characteristics. Analyzing and assessing the change of price and quality of product in transaction process as well as the form and type of contract between stakeholders. Describing the evolution of price through stakeholders in the value chain.

Step 4: Evaluating the role of vegetable production in the economic condition of households involving solution employment and development economy in the region through household survey.

Step 5: Summarizing, analyzing and writing reports.

IV. The general situation

II.1. Overview of Thai Binh province

Geographic location

Thai Binh is a coastal province, located in the red river delta and directly impacted by economic growth triangle: Ha Noi, Hai Phong and Quang Ninh.

Thai Binh located in northern latitude 20.17 – 20.44 and eastern longitude 106.06-106.39. It is bounded by:

- Hung Yen, Hai Duong and Hai Phong city in the northern.
- Nam Dinh and Ha Nam in the western and southwestern.
- Northern Ocean bay in the eastern.

Natural characteristics

- **Land**

Total of natural land area is 153,596 ha. In which, annual crop area is 94,287 ha, used pond and lake 6,018 ha. The soil in Thai Binh province is fertile because it is aggrandized alluvium by Thai Binh and Red river system. Most of land is improved to grow 3 –4 seasons per year. The land area that can be grown winter crops is 40,000 ha. Beside to rice area, land is very suitable to food crop (such as potato, cucumber, salad, onion, groundnut, soybean and capsicum), short term industrial crop (jute, mulberry, rush), tropical food crops (orange, apple, guava, litchi, longan, banana) and bonsais, flowers...

- **Topography**

Thai Binh is a delta province; topography is fairly flat, slope less than 1%, changed from 1 –2 m higher than sea water level and gradually slopes from northwesterners to southeastern.

- **Climate**

Thai Binh province located in tropical monsoon, the decree on average of the year is 23 – 34⁰C (the lowest decree is 4⁰C and highest decree is 38⁰C).

- **River and cannal**

Thai Binh province is bounded by a closed river and sea system. Coastal sea's length is over 50 km. Four big river flow through this province; Hoa River in the northern and northeastern (35.5 km), Luoc River in the northern and northeastern (it is a small branch of the red river with 53 km length), Lower section of the red river in western and southern (67 km), Tra Ly river flow from western to eastern is the first branch of the red river with 65 km length. It also has 5 big door of river (Van Uc, Diem Dien, Ba Lat, Tra Ly, Lan). All of river is affected by tide a change, in the summer water level is rapidly increasing, big water flow, high alluvium content. In the winter, the water flow is reduced much, low alluvium and salt water deeply impacted on mainland from 15 – 20 km.

The socio-economic situation

The natural land area of Thai Binh province is 1,542.24 km², occupying 0.5% area of whole country. It has Thai Binh city and 7 district including Dong Hung, Hung Ha, Kien xuong, Quynh Phu, Tien Hai, Thai Thuy, Vu Thu. In which it has 284 communes, wards and towns.

Table 1: Land using structure in 2004 (Unit: ha)

Type of land	2000	2002	2004
Total area	154,244	154,584	154,601
1. Agricultural land	96,567	97,018	96,392
+ Annual crop growing land	93,336	92,075	91,424
2. Water surface for growing aqua-product	6,769	7,058	7,309
3. Forestry land	2,560	3,390	3,394
4. Specializing land	25,759	26,008	26,569
5. Housing land	12,876	12,408	12,443
6. Non used land	9,713	8,702	8,494

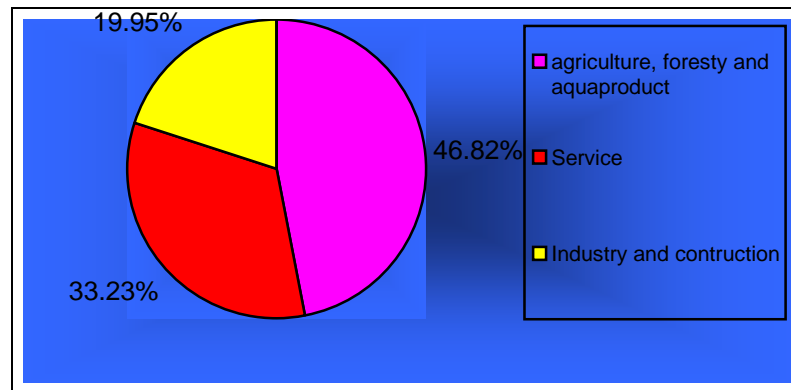
Source: Statistical year book of Thai Binh in 2004

In 2004, population of Thai Binh is 1,843,241 people, in which, rural population occupies 92.78% and only 7.22 % ones live in urban area. Density of population is 1,192 people/km². Rate of natural growth of population is 1.08%/year.

In 2004, there were 958,485 people at the laboring age, in which agricultural labor occupied 68.64% and state labor are 53,137 people.

The growth of GDP are 10.25%/year, the growth on average of 4 years is 7.05%, The average GDP per capita in 2004 was 4,5 million VND. After 4 years, it has created new employment for over 86,500 people. The rate of poverty and hunger reduced to 5.9%.

Chart 1: GDP structure of Thai Binh province in 2004 (by current price)



Source: Statistical year book of Thai Binh in 2004

In 2004, GDP of Thai Binh province was 5,988 billions VND (by comparative price), increased 10.25%. In which;

- Production value of agriculture, forestry and aquaproducit was 3,101,490 VND, increased 9.15%.
- Production value of industry and construction was 1,126,806 VND, increased 16.96%.
- Production value of service was 1,759,699 VND, increased 8.32%.

II.2. Situation of vegetable production in Thai Binh Province

Thai Binh is an agriculture specialized province; both of area and quantity of vegetable have increased significantly in 2 recent years, which proved farmers are interested in the vegetable production. Hung Ha district is the biggest area of vegetable cultivation; Vu Thu district is the second biggest area and Thai Binh city is the smallest area of vegetable cultivation.

Kinds of vegetable grown popularly include kohlrabi, cabbage, radish, carrot, tomato, potato, onion...In which area of cabbage, kohlrabi is about 2400 – 2600 ha, average productivity is 25 – 30 tons/ha, they are mainly consumed in the province; area of radish is 1200 ha, it can be cultivated 3 season per year, it is mainly sold to other province as Nge An, Quang Binh, Quang Nam; area of tomato is 1000 – 1200 ha, it mainly consumed in the province. Area of carrot is 300 ha, it is mostly consumed other province. Area of onion is 600 ha and garlic is 70 – 80 ha; Leaf vegetable area is 3000 ha, in which, cabbage dominated a main part of area, it is consumed in the province and some other neighboring province as Nam Dinh, Hai Phong and Ha Nam.

Each district usually has own advantages of vegetable production. Vu Thu has advantage of leaf vegetable production; Quynh Phu has advantage of tomato, potato and pimento (seeds

of Korea, Taiwan); Kien Xuong produces radish; Dong Hung, Hung Ha produces potato; Thai Thuy produces onion and garlic. Vu Thu has biggest winter vegetable area while other district as Kien Xuong, Quynh Phu, Vu Thu has orientation more diversity production. Thai Thuy cultivates many export crops such as casaba melon, baby cucumber, salad and radish (quantity of export crops estimated about 3500 tons/year).

System of processing factories has not been developed yet in Thai Binh province. In Thai Thuy district there are 2 agricultural product preliminary treatment factories; one of Van Dat Company and another one of Asia Pacific Company. Their product is in the salt shape, total of quantity is rather big while it does not have processing factory causing many difficulties for vegetable production.

Table 2: Area and quantity of vegetable in Thai Binh province

	District and town	2002		2003		2004	
		Area (ha)	Yield (tons)	Area (ha)	Yield (tons)	Area (ha)	Yield (tons)
Tæng sè		22,138	447,760	23,509	484,178	27,908	608,763
1	Thai Binh city	1,259	29,454	1,259	28,684	1,438	33,932
2	Quynh Phu	1,964	32,823	2,084	35,842	2,818	55,665
3	Hung Ha	4,992	106,790	5,940	125,930	5,628	132,829
4	Dong Hung	3,017	61,123	3,005	64,293	3,423	78,116
5	Thai Thuy	2,550	48,685	2,672	51,268	3,520	70,065
6	Tien Hai	2,395	46,675	2,513	51,748	2,580	56,152
7	Kien Suong	2,244	45,495	2,099	43,113	3,644	82,403
8	Vu Thu	3,717	76,715	3,937	83,300	4,857	99,601

Source: Statistical year book of Thai Binh in 2004

Table 3: Production value of vegetable comparing to other economic branches (by current price)

Norms	2000		2002		2004	
	Value (mil.)	Structure (%)	Value (mil.)	Structure (%)	Value (mil.)	Structure (%)
Total	4,219,497	100	4,661,247	100	5,684,109	100
1. Crops	3,188,327	75.56	3,416,614	80.97	3,904,671	92.54
+ Rice	1,968,442	46.65	2,171,936	51.47	2,356,884	55.86
+ Vegetable, Bean and spice	600,964	14.24	635,160	15.05	837,642	19.85
2. Animal raising	900,310	21.34	1,077,853	25.54	1,593,434	37.76
3. Agricultural service	130,860	3.10	166,780	3.95	186,004	4.41
4. Other activities	0		0		0	

Source: Statistical year book of Thai Binh in 2004

III. Characteristics of vegetable market in Thai Binh province

III.1. Characteristics of vegetable commercial center

III.1.1. Bo Xuyen market – provincial center for vegetable commerces

Bo Xuyen market locates in Bo Xuyen ward, Thai Binh city. This is an integrated commercial market; vegetable sale is only taken place outside market and next to traffic road from 10 o'clock pm to 6 o'clock am of next day. This time, many vegetables are aggregated from many other provinces such as Hung Yen, Hai Duong, Nam Dinh, Ha Nam, Bac Ninh...activities before 12 p.m is only small while it is very plenty after 2 a.m.

Each region bring to here represent product according to its season with diversification; Kien Xuong has salad, tumid, "Ngot" vevetable; Tien Hai has onion and salad; Thai Thuy has onion; Quynh Phu has tomato and many kinds of cabbage...Dong Hung has main fennel; Quynh Coi has kohlrabi, bean and cucumber; Vu Thu have types of cabbage, salad; and other province, Hai Duong has onion, carrot, early cabbage; Bac Ninh has tomato and cabbage; however, source from other provinces is not frequency and it is only on seasonal type. According to estimation, about 50% quantity of wholesaled vegetable in this market come from Vu thu district and some communes in Thai Binh city, rest of vegetable come from city neighbored district and other provinces.

Vegetables of other provinces are transported by car at 9 – 10 pm then they are sold to wholesalers in the market. Vegetable is distributed widely markets in the city and other district too. Stakeholders are far from city transporting vegetable by motorbike while other ones are nearer to city transporting vegetable by bicycle. Many farmers directly bring vegetable to city to sell.

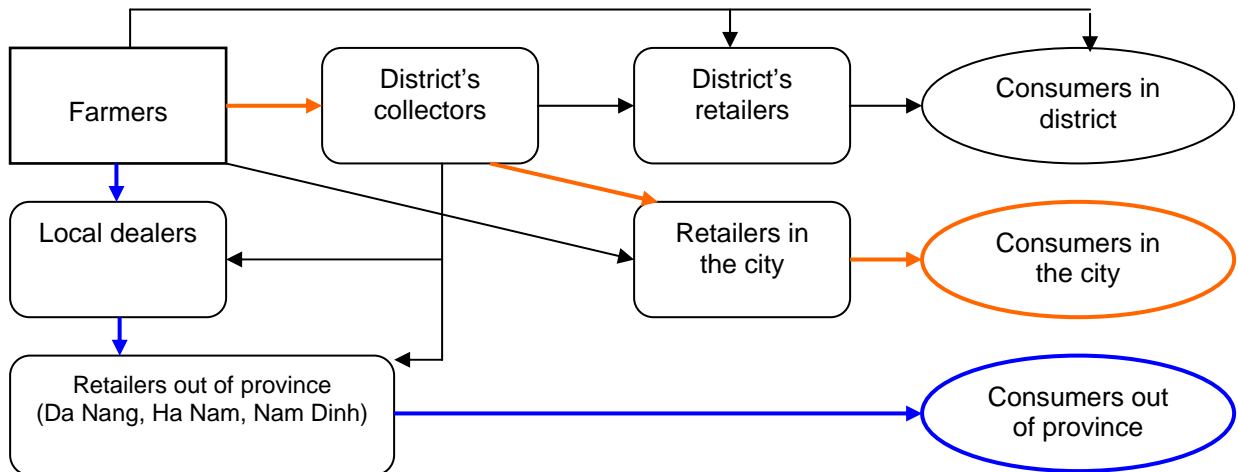
III.1.2. Characteristics of vegetable commercialization in Vu Thu district

III.1.2.1. Stakeholders participating value chain

Because of next to Thai Binh city, Vu Thu district has much condition to become vegetable specialized area for this center for economic and political. However, activity of vegetable commercial system is very weakly and small. Some market is only local characteristics. Households or collectors bring vegetable to market then sell it to retailers. It does not have cluing market to sell to other areas. This activity is mainly carried out by dealers in the communes.

It also show that farmers are facing much difficulty in consuming product because of not form a system of consumption that meet the farmer's needs. The dynamic stakeholders are not equality distributed in whole communes. In order to develop vegetable production, it is very important to have stakeholders who can bring farmer's product to consumers.

Diagram 1: System of vegetable commercialization in Vu Thu district



The main vegetable channels in Vu Thu district

Channel 1: Farmers → Collectors in the district → Retailers in the city → Consumers in the city

Channel 2: Farmers → The local dealers → Retailers out of province → Consumers out of province.

In the channel 1: The collectors and retailers play as middle stakeholders of production and consumption. Vu Thu district is next to Thai Binh city, a big amount of vegetable is transported to consume here because of different price between two places. In the channel 2: vegetable is mainly transported to market in Ha Nam, Nam Dinh and especially in Da Nam city.

III.1.2.2. Characteristics of participating stakeholders

III.1.2.2.1. Farmers

The farmers are the first stakeholders; economic efficiency of each product is the main factor affect to their strategy. In the market economy, the most necessary is whether product meets the market's demand or not. The fact of production in Vu Thu district that proves the dynamic of farmer in meeting the market's demand especially in regions those has development of commodity channels.

Table 4: The common characteristics of surveyed households

Norms	Unit	Quantity	Structure (%)
Area of agricultural land	m ²	1982	100
Area of rice	m ²	1832	92.43
Area of specialized vegetable	m ²	150	7.57
Area of winter vegetable	m ²	1218	66.47
Number of capita per household	Person	4.4	100
Number of labor per household	Labor	2.4	54.55
Agricultural labor per household	Labor	2	83.33

Source: Surveyed statistic of VASI in 2005

Thai Binh province is a traditional region in rice production; rice area of surveyed households is very big, occupying 92.43% of total cultivated area, in which vegetable of rice occupying 66.47%. It is concentrated on winter season. The vegetable specified area occupying a small part. Household's income depend much on agricultural production (66.67%). Non-agricultural operation only begins to develop, in which majority of income is transferred from labor working far from home. In agricultural production, although rice are only produced a season per year but the income from vegetable dominating a big part in household's income structure. The economic efficiency will be mentioned more carefully in the next part but it is more value than rice production.

Table 5: Income structure of surveyed households

Norms	Quantity (mill)	Structure (%)
Total income	30	100
Agricultural income	20	66.67
Vegetable income	12	40.00

Source: Survey of VASI in 2005

Agricultural production in Vu Thu district still concentrated in rice production but many formulas belong to vegetable with diversification of types. It also gains high economic efficiency and more and more households use it. These formulas include;

- Formula 1: rice – rice.
- Formula 2: rice – rice – salad – salad - fennel
- Formula 3: groundnut – Chinese cabbage – mustard – kohlrabi – radish – fennel
- Formula 4: Fennel – salad – radish onion – mustard – flower onion – fennel – salad – salad.

According to the surveyed results, 70 – 80% of households use formula 1 and 2 with 2 rice seasons and 2 rice seasons plus a short tern vegetable season. The formulas with 2 rice seasons have the lowest economic efficiency (its profit is 477,000 VND per sao). If it is produced plus 3 season, its profit reaches to 2 millions per sao. Few households use formula 3 and 4 because of unstable output, high risk and demand many labors (vegetable production need all day in the field). The risk that mentioned here is the weather (when it suns much vegetable will be died if it is not covered, and it is rotten if it rains much). Besides, when season loosed, foods are not ensured and changing price is usually worried too. However, the efficiency of formula 2 and 4 is higher than 2 formulas belong to rice. Especially, in the formula 4, with the continuously rotation of production reaching to 8 season per year, farmers can get high economic efficiency.

Table 6: The economic efficiency of some production formulas in Vu Thu

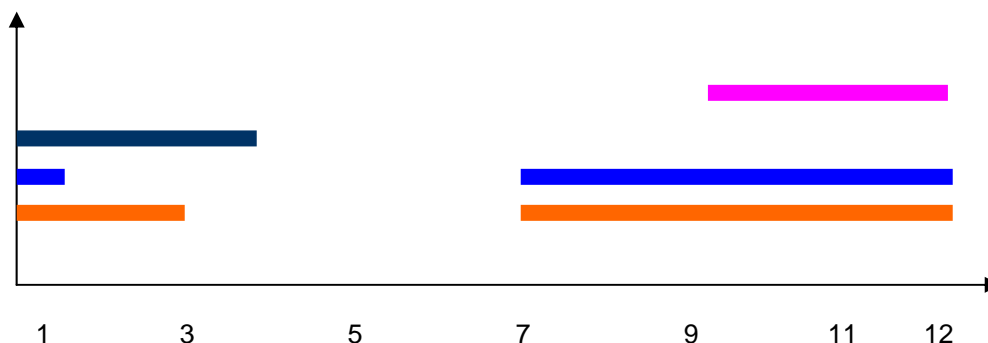
Formula	Revenue	Cost	Profit
Formula 1	950,000	473,000	477,000
Formula 2	3,650,000	1,176,500	2,473,500
Formula 3	3,740,000	975,000	2,765,000
Formula 4	6,800,000	1,727,000	5,073,000

Source: Survey of VASI in 2005

(Note: the cost is not included family's labor wage)

The type of cultivated vegetable has much changed. Before 1995, radish production was the strong points of Vu Thu district, but because of not to sell yet and low economic efficiency resulting in radish was not cultivated in the households (area of radish now is only one ten compare to 1995 one). Instead of that, some crops such as potato, salad and fennel are cultivated much in communes. Most of product is sold to local wholesalers then it is taken to Da Nang city and some market in the central region. These households have advantage of consuming their product because wholesalers come to field to buy vegetable. Households produce vegetable for near market and it's on the spot with product as kohlrabi, cabbages...face more difficulty than others especially when much vegetable supplied to the market. They have to transport vegetable themselves to sell retail or wholesale in the market such as Bo Xuyen, Me, Thong, Bong, La.... However, when product is scarce, collectors and retailer will sell vegetable in the field or some place in the way farmers go to market.

Diagram 2: Season schedule of some kind of vegetable in Vu Thu district



Note: Season schedule is divided to 4 groups:

Group 1: From July to March including salad, Chrysanthemum, fennel and dill. █

Group 2: From July to January including: mustards, Chinese cabbage, basella alba, kohlrabi and cabbage. █

Group 3: From January to April including: squash, radish onion, amaranth, mustard. █

Group 4: From September to December including: radish, tomato, potato, leaf squash. █

The constraints:

- Production of some areas does not aim at meeting market's demand but spontaneously one result in difficulty in selling product.
- System of collection is small and only concentrated on few communes.
- System of irrigation does not provide enough water in the winter season.
- The undetermined risk of price, weather...

III.1.2.2.2. Collection

Local collectors have function to buy product from farmers then transport it sell to retailers. In this part, we separate collectors into 2 kinds: collection for their province's needs and collection for other province' needs (Nam Dinh, Ha Nam province).

- **Collection to the city**

These stakeholders have place to sell vegetable in Thai Binh city, one of the important place for consuming vegetable in the district. Because of next to city, these stakeholders have lower competition in transportation cost and losing compare to others. However, this characteristic is not a big advantage.

Because of many stakeholders sell vegetable to the city; amount of vegetable is 60 –80 kg per day. It is very difficult to sell vegetable if this amount increases because each stakeholder has certain customers and they are usually familiar customers. Quantity of capital is only 1 – 2 millions VND, the value on average time is also low; it is from 300-350 thousand VND. The stakeholders have time of operation are 10 years.

Source of vegetable of these stakeholders includes their vegetable and purchasing from farmers. Collectors are usually farmer, other labor participate agricultural production. On the other hand, they are product-selling farmers, so their operation is not specialization. When rice season comes, they can stop until rice season finish.

Source of consumption of these stakeholders include restaurant and retailers. Generally, if stakeholders sell specialty vegetable to restaurant, they don't sell to cluing market. The quality of vegetable depended on the demand of restaurants. This activity usually more advantage and stability than sell retail in the market. Each product can be brought in from many different districts and they have to compete with this product. Almost product is wholesaled to retailers that come from districts or even in the city (rate of wholesale is 90%). If they do not sell all, vegetable is continually sold to consumers or brought comeback to sell in the district's market.

In conclusion, this stakeholder operate only small and not to be specialized. However, amount of stakeholder is very big and it contributes an important part in consuming vegetable of district.

- **Collection to out of province**

Vegetable is taken to some other provinces as Nam Dinh, Ha Nam. It is different to collection to the city, this stakeholder operates more specialization and much bigger than (the average amount of each time to Ha Nam is 800 – 1000 kg vegetable with 2 –3 time per week; which to Nam Dinh is 200 – 250 kg vegetable, it includes 3 – 4 specific vegetable of each commune). However, amount of stakeholder participating is fewer than other. Because of the scale, the mean of transportation of this stakeholder is motorbike and car base on sending goods form through passenger car.

Vegetable source of this stakeholder is from farmers and a part of their household but amount of vegetable that is bought from farmer dominating in total vegetable. They have been used to customers, when they need, they can telephone to farmers to buy vegetable, farmers have to bring vegetable to stockholder's house. However, in order to qualified product, they usually buy directly.

The majority consumption form is wholesale not retail. They sell to restaurant and only bring to cluing market when it is redundant. In the stakeholder collect to Ha Nam province, customers usually familiar so vegetable is usually made a reservation.

Table 7: The operation characteristic of collectors

Norm	Unit	Collection to the city	Collection to other province
Transportation Amount	Kg/time	60-80	200-250
The number of operation year	Year	10	8
Time of operation in the year	Month	11, not usually	12, frequency
Type of collected vegetable	Number	5-6	3-4
Input source		Farmer, their vegetable	Farmer, their vegetable
Output source		Restaurant, retailers and consumers	Restaurant and retailers
Rate of selling: + Retail	%	10	0
+ Wholesale	%	90	100
Mean of transportation		Bicycle, motorbike	Motorbike, car

Source: Survey of VASI in 2005

Some problems to collectors

With current circumstances, network of vegetable collection is still small. In all of communes, their operation is only seasonal category, small scale and mainly participating channel inner province. While there are many stakeholders take part both inner and out of province. The specialized stakeholder only concentrates on some communes that have the development of vegetable production, big area and channel for other province. It is difficult to establish a widely collecting system. The output market is always a big problem and it is difficult to solve if only base on these stakeholder.

Table 8: The cost of vegetable collection to Nam Dinh province

Norm	Unit	Collection to the city	Collection to other province
Petroleum	VND/day	5,000	25,000
Nylon beg	VND/day	7,000	15,000
Market's ticket	VND/day	2,000	3,000
Fee bridge and boat	VND/day	0	4,000
Total of cost	VND/day	14,000	47,000

Source: Survey of VASI in 2005

With the small collectors, the important factors that encourage them activate are enough market's demand. Their capacity can meet the market's demand. If it does not have new product based on the change of crop structure, the collectors will not be able to change their operation.

III.1.2.2.3. The local wholesalers

They buy product from farmer or other collectors then sell it to stakeholders in other province. The number of these stakeholders is few and they mainly concentrated on some communes, in which Trung An commune have the biggest amount (about 10 persons).

The local wholesalers have just operated for 6 year when long channels to Da Nang city. Nowadays, this channel has 10 stakeholders participate with the scale 10 tons per time, each stakeholder sell 800 – 1000 kg per time. Vegetable includes 4 major kinds of salad, potato, capsicum and cabbage enclosing some other vegetables. In which, salad occupied 80 – 85% of total amount. This is one of remarkable factors of value chain because of Da Nang city has only

Mr. Phung Van So, wholesalers collect vegetable to Da Nang city, An Loc village, Trung An commune, Vu Thu district, Thai Binh province

He is the first person sell vegetable to Da Nang city, the way to sell homeland's vegetable facing many difficulties. He know clearly situation that vegetable is not bought by any one, or very cheap price, he determines find out consumption place to reduce poorness for farmers. The first time he did in 1999, he went lonely to Da Nang city after introduced by familiar person. The first cargo, he loses 2 millions because of not have familiar customers and decayed vegetable during transportation. However, he still aspires strongly and he decides to Da Nang city in the second time. This time he stayed there to directly survey market, he has known that Da Nang city have much demand for salad, which his homeland can grow well. Then, market has developed until now. To day, there are 10 specialized people bringing vegetable to this market. In the season, amount of vegetable may reach to 10 tons, especially in the near lunar day; amount of vegetable may gain 50 – 60 tons.

Farmers always lack of market information; they produce incase of knowing very little information. The process of finding information of above farmers show that it is not easy to get a consumption market. The life of farmers can be changed if their product can meet the market's demands.

demand for this vegetable. The operation of this stakeholder takes place from October to March of the next year when the vegetable season coming. Out of this time, this stakeholder participate vegetable channel for neighboring province as Nam Dinh and Ha Nam province. That is the reason for not clearly in separating the function of each stakeholder.

One of the owned characteristic of this channel is the contract between farmers and wholesalers despite of not by written contract. Due to the stability of salad wholesalers buy production, almost of salad when new season comes. Each wholesaler contract with 7 – 10 farmers and the contract are established for each season. Price of selling is the price of market at the time of harvest. Growing and harvest are still carried out by farmers. So as to keep relationship with wholesalers in the next years, farmers have to ensure look after carefully and good quality of vegetable. Harvest is carried out by wholesalers and combined to renting labor; farmers only help a small part. Wholesalers will pay after finishing harvest. This is the contracting form in agricultural production; although it does not have legal fundamentals but it have brought the economic efficiency to farmers.

Input vegetable source is mainly come from farmers (occupying 90% of total collecting vegetable). Rest of vegetable is bought from collectors in the district when wholesaler has demand for big amount and has to supply in the shortage time. This stakeholder may be specialized collectors or seasonal operation. Beside to salad, wholesaler buys other vegetable as kohlrabi, cabbage, fennel, and pumpkin buds...to enclose for full vehicle.

Each local wholesaler have 2 –3 familiar customers. Amount and quality and kind of vegetable will be made a reservation through telephone. Sometimes buyer and seller do not

know each other. The relationship of two sites in purchasing based on another wholesaler in the locality. So that, the contract are rarely broken and money is paid through bank about 10 day per time. Quantity of capital of local wholesaler is about 20 – 30 millions VND.

In far channels, it is very important to preserve vegetable. Vegetable is cleaned clearly after harvesting, it is packaging in the bag of 2 kg, 3 kg and 5 kg. These bags are arranged in bamboo cylindrical crate, each bamboo cylindrical crate have amount 50 – 65 kg. Due to vegetable is decayed easily and losing about 5 –10% of total amount depending on each vegetable type. Vegetable is transport in the afternoon to sell in the morning of next day; the operation of collecting must be done in the morning.

Table 9: Operation characteristics of local wholesalers

Norms	Units	The local wholesaler
Amount of transportation	Kg/cargo	800-1000
The number of operation years	Year	6
The time of operation in the year	Month	T10 -> T3
Average value of cargo	1000 VND/cargo	1,500 - 2,500
Amount of average capital	1000 VND/Person	20,000-30,000
Type of main product		Salad, potato, capsicum, cabbage
Rate of product purchasing from + Farmers	%	90
+ Collectors	%	10
Mean of transportation		Car
Output stakeholders		Reatail out of province

Source: Survey of VASI in 2005

Transportation cost is shared to each wholesalers basing on their amount of vegetable. Beside to transportation cost, wholesalers have to pay for renting labor, cylindrical crate and petroleum.

Table 10: Operation cost of local wholesalers (units: 1000 VND/ cargo)

Norms	Quantity
Transportation cost	650
Package and cylindrical crate	20
Renting labor for harvesting	50
Petroleum	15
Losing cost	150
Total cost	885

Source: Survey of VASI in 2005

Some problems in operation of local wholesalers

- They do not operate all time in the year; the main product is salad but only in the out of main season from October to March of the next year, other season, quality of vegetable does not meet the market's demand. This stakeholder has to operate in nearer market.
- The linkage to farmers through word contract has also difficulty. Sometime, this is the competition to buy a big amount of vegetable. Input source will not be ensured if not to implement this form.
- Because of far transportation, vegetable is easy to decay resulting in the big lost. When it comes to consumption place it is pressed price. Besides, they even lost all cargo incase of having risk during transportation.

Some proposition supporting operation of local wholesalers

- Enlarging finding out the consumption market through establishing information channels for wholesalers, especially in near markets. Agricultural cooperatives should play role as information linkage. This not only help wholesalers operate well but also help farmers consume their product.
- Supporting preserving technique to reduce losing.
- Supporting loans incase of having risk

III.1.2.2.4. Retailers

Retailer is a person who sells directly vegetable to consumers. As characteristics of commercial system and commodity channels mentioned in above part of Vu Thu district, the selection retailers for researching is also necessary.

One of the characteristics of retailers is varying product; each retailer has average of 20 – 30 kind of vegetable, radish and fruit. Each kind sold a small amount in the day but total amount on average is about 100 – 135 kg. Total average capita is from 1,5 to 2 millions. Almost of retailers have long operation and 100% of them are woman.

Table 11: Characteristics of retailers

Norm	Units	Retailers in the city
Amount of selling	Kg	100-135
The number of operation year	Year	13
Time of operation in the year	Month	12
Type of product	Type	20- 30
Input stakeholders		Wholesalers, collectors, farmers
Rate of input source		
+ wholesalers	%	20
+ collectors	%	65
+ farmers	%	15
Output stakeholders		Individuality consumers, collective stall, restaurant, hotel
Average capital amount	1000 VND	1,500- 2,000
Profit	1000 VND/day	60- 100

Source: Survey of VASI in 2005

Retailer's input source includes other provincial wholesalers, collectors and farmers. In which dominant part is from collectors (occupied 65% of total vegetable quantity). Type of vegetable is main cabbage, tomato, carrot, onion...depend on the season. It is come from Hai Duong, Nam Dinh, Bac Ninh. Vegetable is brought to Bo Xuyen market then to retailers. Vegetable of collector and farmer is also bought by this form.

The output of retailer is also very variety, the retailer who has much experience usually has many affiliating customers, they are usually individual customers, with restaurant, hotel and foodstuff stall buy a small quantity because the have owned suppliers.

Table 12: Cost of operation per day of retailers (unit: VND)

Cost	Quantity
Position cost	2,000
Ticket for motorbikes	1,000
Ticket for market	2,000
Protection and sanitation	1000
Nylon beg	5,000
Petroleum	2,000
Total of cost per month	390,000
Cost per day	13,000

Source: Survey of VASI in 2005

Some problems in operation and propositions

The retailers do not have many difficulties in their operation. In the economic benefit sites, they always have ways to ensure profit more stability than other stakeholders. In their opinion, the majority constraint is the increase in cost of position cost and market ticket. The number of stakeholders in and out market has orientation increasing that also increases competition. In the current situation, the retailers do not propose support.

In the future, clear and high quality vegetable consumption will be strongly increased. Consumers do not accept vegetable that does not have clear origin. In this case, a standard shop selling original vegetable and has responsibly for risk is very necessary and retailer needs a regulated supplying system based on supporting of state owned offices.

III.1.2.3. Formation of product price through stakeholders

- **Consumption channel in the province**

The calculation of price will be conducted in salad, which is grown popularly in the district. This vegetable is also appeared popularly for other provinces. Price of purchase and selling is price of certain time, so that it is not same to all the days. The commodity channels in the province are selected to study included:

Channel 1: Farmers → collectors in the district → Retailers in the city → consumers

This is the simple channel; it has only 2 middle stakeholders, collectors in the district and retailers in the city. The result shows that, farmers get the biggest profit (1,269VND/kg). Although the profit of retailer is smaller than but it is calculated on a day while profit of farmers is calculated on 40 – 50 days. Profit of farmers depends much on price of selling. In the salad, in early season its price is 2000 VND/kg, in meddle season is reduced down to 1500 – 1000 VND/kg. Profit of collectors is more stability than farmers because the can reduce price of purchase from farmers when price in that day is not benefit for them and

farmers have to bear losing. In addition, farmers also have risk of the weather (much sunny or rainy can make vegetable be perishable). This situation happens in the other channels too.

Table 13: Formation of price and distribution of stakeholders in 3 channels (unit: VND/kg)

Channels	Norms	Farmers	Collectors in the district	Wholesalers	Retailers out of province	Retailers in the city	Consumers
1	Price of input		1,500	-	-	1,955	2,543
	Cost		175	-	-	108	
	Cost price	231	1,675	-	-	2,063	
	Price of selling	1,500	1,955	-	-	2,543	
	Profit	1,269	280	-	-	480	
2	Price of input		1,500	-	2,085	-	-
	Cost		235	-		-	-
	Cost price	231	1,735	-		-	-
	Price of selling	1,500	2,085	-		-	-
	Profit	1,269	350			-	-
3	Price of input		-	1,450	2,835	-	-
	Cost		-	885		-	-
	Cost price	231	-	2,335		-	-
	Price of selling	1,450	-	2,835		-	-
	Profit	1,219	-	500		-	-

Source: Surveying of VASI in 2005

- **Consumption channel other province**

It is divided into 2 main cases:

Channel 2: Farmers → Collectors in the city → Retailers in Nam Dinh → Consumers

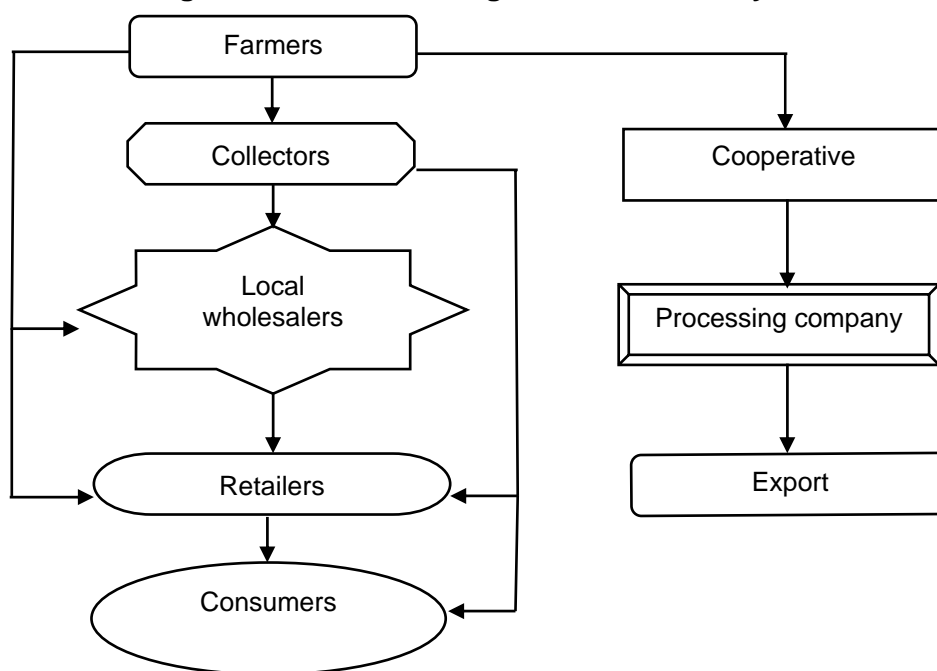
Channel 3: Farmers → Local wholesalers → Retailers in Da Nang → Consumers

Because the local wholesalers buy big amount vegetable of farmers in the field, price of purchase is lower than one of collectors. In that case, profit of farmers is also lower than but their output is more insurable. The cost of stakeholders participating other provincial channels is also much higher than other (e.g. cost for channel to Da Nang city are 885 VND/kg while to Nam Dinh is 235 VND/kg and in the provincial channel is 175 VND/kg). Consequently, amount of wholesaler's capital must be enough to take part this channels because it is not paid in the selling time. Profit of local wholesalers is also higher than collectors in the district.

III.1.3. Characteristics of vegetable commercialization in Thai Thuy district

III.1.3.1. Stakeholders participating value chain

Diagram 3: Channel of vegetable in Thai Thuy district



In Thai Thuy district, we concentrate on researching 2 main commodity channels:
 Channel 1: Farmers → Cooperative → Foodstuffs Export processing Company
 Channel 2: Farmers → Collectors → Retailers → Consumers

III.1.3.2. Characteristics of participating stakeholders

III.1.3.2.1. Farmers

During value researching process, because of limitation on time, we only research the participation of farmers through 2 main channels:

Channel 1: From Thai Thuy district to free market as Hai Phong, Hung Yen, Hai Duong...

Channel 2: Following export channel through cooperative to foodstuffs export processing factory.

As well as Vu Thu province, area of rice in Thai Thuy is still big. The specialized vegetable area occupied 11 – 17% total agricultural area. Vegetable is also cultivated in rice land in the winter season; however, it is only occupied 50 – 52% rice area. In the households participating processing channel, their vegetable area is usually bigger than others participating free channels. It requires more labor to meet production's demands.

Table 14: characteristics of households in export channel

Norms	Units	Channel 1	Channel 2
Area of agricultural land	m ²	2,015	2,050
Area of rice	m ²	1,678	1,825
Area of specialized vegetable	m ²	337	225
Area of winter vegetable	m ²	875	925
Capita/household	Capita	4.71	4.78
Labor/household	Labor	2.43	2.47
Agricultural labor/household	Labor	1.73	1.86

Source: Survey of VASI in 2005

Table 15: The structure of surveyed household's income in Thai Thuy district

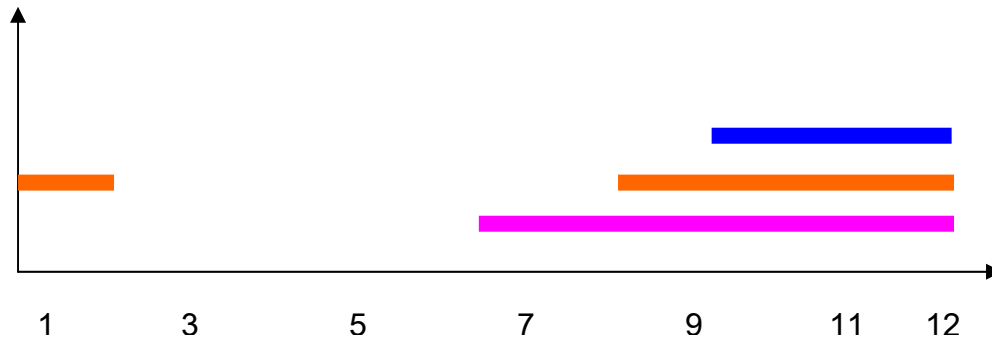
Norm	Channel 1	Channel 2
Total of income	27	28
Agricultural income	18	17
Vegetable income	10	9

Source: Survey of VASI in 2005

At present, system of cultivation in this district can be divided basing on 2 channels, household that sign a contract with processing company selects cultivation formula 4, 5 and 6 for radish, salad, casaba melon...other households select formula 1,2 and for normal vegetable as squash, radish, kohlrabi, cabbage, potato...

- Formula 1: Rice – rice – watermelon.
- Formula 2: Onion – pipe tobacco.
- Formula 3: Sweat potato – potato – cabbage – radish.
- Formula 4: Rice – casaba melon – rice – salad
- Formula 5: Rice – casaba melon – rice – squash
- Formula 6: Sweat potato – casaba melon - casaba melon – radish.

Diagram 4: seasonal schedule of vegetable in Thai Thuy district



Note: The seasonal schedule of vegetable divided into 3 main groups

- Group 1: From June to December including: water morning glory, kale, green cabbage, mustard, Chinese cabbage. █
- Group 2: From August to February of next year including: cabbage, kohlrabi, fennel, onion, and baby cucumber, Chrysanthemum, mustard, potato, basal alba. █
- Group 3: From August to December including: Salad, radish, and flower onion, green squash. █

Table 16: The economic efficiency of some production formulas of household in Thai Thuy district

Channel	Norms	Revenue	Cost	Profit
Channel 1	Formula 1	2,564,667	822,667	1,742,000
	Formula 2	3,232,333	739,333	2,493,000
	Formula 3	3,120,000	902,500	2,217,500
Channel 2	Formula 4	2,191,000	746,412	1,444,588
	Formula 5	2,642,667	723,867	1,918,800
	Formula 6	2,341,000	593,400	1,747,600

Source: Survey of VASI in 2005

(Note: The costs do not include family's labor wages)

The baby cucumber and salad do not have demand in free market, and not use for daily consumption result in the rate of implementing the contract relatively high. Other products are usually bought by private dealers due to they give higher price than company do.

Generally, the received profit from contracted formula is lower than other formulas because company's signed price is much lower compare to the same product in the market. Conversely, consumption of this product is ensured completely and stands little market risk. As below example (table17), revenue of selling radish is different. In the contract with company, farmer have to conform to the standard and regulation of company; radish must be harvested in the time 35 – 45 days after grown and normal radish (had 10 – 12 radish /kg, productivity 740 kg/sao, company's purchase price is 520 VND/kg), if farmers do not implement following to the contract, radish is harvested in the time 50 – 60 days, radish is bigger than above case (has 6 –7 radish/kg, productivity reach 900 kg/sao, its price in free market is 800 VND/kg). This example has shown the inadequacy of price mechanism needing to overcome. However, this compares have time – point characteristics (end of the season) it is not many applied by farmers. It does not have high stability, much risk and difficult to sell.

Table 17: Compare the economic efficiency of farmer in channel 1 and channel 2 (compare on 1 sao of radish)

Norm	Channel 1 (1)	Channel 2 (2)	Compare (1-2)
Revenue	720,000	385,000	335,000
Cost	200,000	148,000	52,000
Profit	520,000	237,000	283,000

Source: survey of VASI in 2005

Advantages, constrains and propositions

- **Advantage:**

- Input: producers are supplied 100% seeds by company. Besides, company also supports agricultural material based on lately payment form and repayment when the harvest season comes.
- Techniques: gather with output support, company do technical steps very well, each signed product, company have person to guide and keep track of production process of farmers.
- Output: with 2 processing companies located in the district, farmers do not much worry about consumption of vegetable.

- **Constraints**

- The price mechanism in signed contract has still much unsatisfactory (price of contract is not increased while agricultural material increases).
- Far from big consumption market (Thai Binh city, Hai Phong city), difficulty in transportation for consumption.
- Vegetable is mainly consumed in the district while few vegetable is consumed other places.
- Lacking of techniques for off season vegetable production and high qualified vegetable.

- **Propositions**

- Establishing area of high qualified vegetable production, area of production in net or glasses house based on the support of organization in and out of district especially of projects.
- Using high qualified vegetable and off season vegetable in production as well as popularizing technical process through training, leaflets... (Based on project's help).
- Policy for supporting vegetable cultivated households: borrow long tern priory loans, a part of agricultural materials for production.
- Supporting learning of model from other localities.
- Supporting consumption through promoting locality's product to other localities.

III.1.3.2.2. Cooperative of agricultural service

This is the middle stakeholder linking farmers to foodstuffs export Company; beside to provision productive service to farmers, these stakeholders have had responsibility for consuming products.

At present, almost cooperative of agricultural service in Thai Thuy dist have many other functions such as supplying input, irrigation and consumption product...In this part, we study cooperative as meddle linkage between farmers and enterprises in signing a agricultural product purchase contract. Research will appraise the statement of signing the contract then recommend solution to consume vegetable. The scale and characteristic of typical cooperative beneath will express all process operation of each cooperative in consuming product.

Table 18: The scale of cooperative in signing contract for consumption product

Norms	Unit	Thuy Tan cooperative	Thuy Son cooperative	Thuy Chi cooperative
Year of signed contract for consumption	Year	2001	1998	1996
Area of signed contract for consumption	Ha	6,5	21,08	10
Number of company signing contract for consumption	Company	2	3	2
Type of signed product		Baby cucumber	Salad, baby cucumber	White radish
Quantity of signed product	Ton/year	93	126	136
% implemented contract	%	90	85	70
Average profit/kg of signed contract	VND/kg	70	50	30

Source: Survey of VASI in 2005

Area, kind and quantity signed depend on whether land and climate appropriated to crop or not, capacity to undertake of each cooperative as well as the rate of implemented contract in the previous season. Cooperative usually sign to a certain company, the contract will no be

signed if company's policy does not suitable or not have enough competitive capacity to other companies. This is one of the constraints that companies have to face in signing contract, if they do not heighten price of purchase, they will meet many difficulties. The signing contract not only promotes the development of vegetable production but also brings profit for participating cooperative. This profit fluctuates from 50 – 200 VND/kg depending on each crop and concentered contract.

Table 19: Profit of farmers in signing contract for consumption

Contents	Benefit of contract signed households
Supplying input	Households are provided seeds by company through cooperative and priority policy of company such as subsidy money, and input material...
Advanced science and technology	Households are trained on technical in each crop through training course and directly guided by company's person.
Consumption product	Not worry about output when they signed contract for consumption with floor price. Reducing meddle stakeholders and pressing price during selling product.
Other problems	The comunity is promoted and collective spirit is appraised

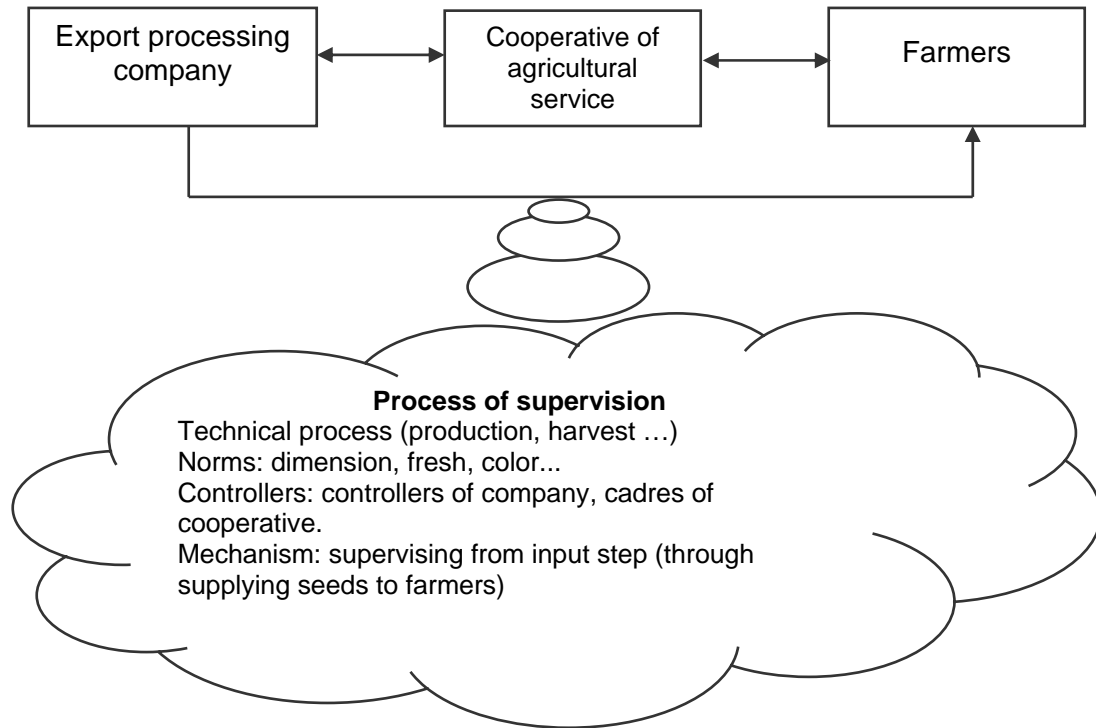
Source: Survey of VASI in 2005

This is only a subjective evaluation of company and cooperative, in the fact, this activity has much limitation and insufficiency. However, this is the right solution in consuming vegetable, radish, and fruit of farmers.

The process implementation and mechanism of signing contract for consumption with company through cooperative.

- Organizing deploying conference with participation of district's office for agriculture and rural development, agricultural extension station, communes, cooperative and members. The content of contract including: signed crop, deployed area, contents of signing, mechanism of signing contract for consumption such as price, investment, purchasing, production process, type of product...
- Conducting sign contract with company.
- Cooperative organizes conference and signs contract with farmers
- Organizing training technique under guiding directly by company's person about production steps, working the soil, looking after, harvesting...and supplying seeds. These operations are implemented through cooperative after training.
- Collecting product: this activity is carried out in concentrated place (usually be headquarter of cooperative) under supervising of company and cooperative.
- Payment is implemented after harvesting from 10 – 30 days depending on each company and cooperative.

Diagram 5: Model of linking 3 parties: farmers – cooperative – company



Remain problems of signing contract for consumption with farmers through cooperative

- Almost contracts are signed basing on floor price, or fixed price regulated from early season, or 5 – 10% fluctuated price. These forms do not suit and not to encourage farmers conducting contract when market's price is higher than contract signed price.
- Lacking constraints legality in solving the broken contract of signed contract.
- The implementation process, and technical steps are only obeyed in early time of signing contract, the late years, training on technical steps is not carried out as signed contract.

III.1.3.2.3. The export processing company

This is the branch of foreign company having head office in the district, that play an important role in developing production as well as consuming vegetable in the locality. Researching operation characteristics, constraints of company to build solution to sign the contract for consumption is the main way in this part.

At present, in the district's area, 2 foodstuffs processing company directly sign contract for consumption with farmers through cooperative. Those are concretized through below table:

Table 20: characteristic and scale of export processing company

Norms	Unit	Pacific Asia area	Van Dat company
Year of operation	Year	1995	2000
Function		Signing the contract for consumption, purchasing, processing, exporting	Signing a contract for consumption, collection, primary processing and export
Quantity of signing	Commune	25	30
Quantity purchased under contract	Tons/year	12 - 15000	7-10000
Rate of implemented contract	%	80	75
Type of signed vegetable		White radish, salad, baby cucumber, cucumber (type 1 and type 2), capsicum, white casabas melon	Baby cucumber, (type 1 and type 2), white radish, salad and capsicum
Area of factory	m ²	650	500
Labor			
- Continuous labor	Person	5	6
- Seasonal labor	Person	20	15

Source: Survey of VASI in 2005

Price of product

Output price of company much depend on import price, Vietnamese companies entrust in that price to buy vegetable from farmers.

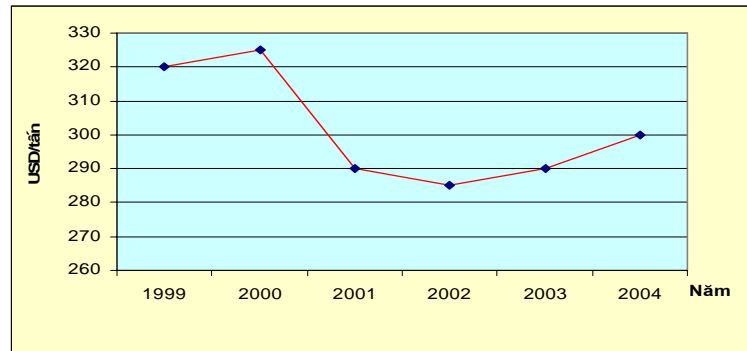
Table 21: Export price of some crops in 2004

Type of product	Export price (USD/ton)
Baby cucumber	650
Cucumber type 1	325
Cucumber type 2	300
White radish	300
Salad	550

Source: Survey of VASI in 2005

According to foodstuffs export processing company, price of some agricultural product has reduced significantly in recently (10 – 50 USD/ton) due to competition of Chinese's products. While, the domestic price of the same product is increasing. That is the reason why the above company faced many difficulties, especially in defining purchasing price as well as profit of this activity.

Chart 2: The changes of cucumbers price for exporting of Asia pacific company



Source: Survey of VASI in 2005

Processing and preserving product

At present, all of above company do not have processing function, but they only primary processing in the form as embalming and soaking in cement pool (the time is 3 – 4 months depending on each of product). These processes are carried out in all of company, it is only different in rate of embalm and time of soaking as well as rate of losing of each of product. Those are much depends on consumption market and primary processing product.

Specification of product quality

Specifications and quality of product in export primary processing company are implemented strictly. This implementation depends not only on foreign partners but also on preserving and price of product. In generally, specifications and quality of product are unified in the contract signed to cooperative. However, implementation faces much difficulty because farmers lack techniques. This is also only of reasons for reduction of implemented contract.

Table 22: Demands for quality of product

Type of product	Demands for specifications and quality of product
White radish	<ul style="list-style-type: none"> - Must enough growing time follow each crop - Original radish and its diameter from 4.5 cm – 9 cm - Skin of radish much be bright - Leaf and root must be cut - Not decayed, insect attacking chapped... - Not too old and decayed inner. - Not to use stimulus pesticide to crops.
Baby cucumber	<ul style="list-style-type: none"> - Original fresh, not decayed and malformation - Cleaning clearly before selling - Diameter is from 1,2 cm -1,5 cm - Radish's length is 3,5 cm- 4,5 cm
Taiwan cucumber	<ul style="list-style-type: none"> - Fruit's diameter is 2.5 cm -2.8 cm - Fruit is equality strait, not shrinkable, scratched, perishable, infected insects... - Same to seed provided by company. - Stalk and knap of fruit must be cut before enclosing.
Salad	<ul style="list-style-type: none"> - Skins and inner rigid part of salad must be cleaned. - Its length is over 2.5 cm, after cleaning, it must have diameter 2.5 cm at least. - The inner part is not desquamated, decayed, and blackish. - It is not broken and dirty. - It must be enclosed after remove skins

Source: Survey of VASI in 2005

The production efficiency of export agricultural product primary processing company

According to export agricultural product primary processing company in Thai Thuy district, the interest is not high (50 – 200 VND/kg, depended on type of export product). Cost is included embalming, bag, transportation, labor and management...

Table 23: Cost of primary processing some exported products

Norms	Type of product	
	Baby cucumber	Taiwan cucumber
Price of fresh product	3200	750
Total cost	9985	4570
- Material cost	6400	1875
- Salt embalmed cost	400	500
-Other cost (production organization, transportation, management, taxation...)	3185	2195
Rate of end product (%)	50	40
Export price	10335	4770
Profit	350	200

Source: Survey of VASI in 2005

Advantages, constraints proposition of Export foodstuffs primary processing company.

- **Advantages**

- Having much support of locality through concretized policy.
- Having positively support of specialized department such as agricultural and rural district's office, station for agricultural extension, propagandas, mobility cooperative and farmers participates.
- Natural conditions are appropriated to many crops that company wants to develop.
- Farmers passively participating.

- **Constraints**

- The planed areas are not carried out synchronously, dispersed production that cause difficult to management and supervision in collection product.
- Difficulty in organizing farmers and collection product.
- Shortage of cadres to supervise production process.
- Lack of legal constraints in solving to broken contract themselves, especially constraints of price, method of purchase and norm of evaluating quality.
- The role of local institutions is not promoted (especially the role of cooperatives). Not yet has the mechanism linking sites that cause reduction of efficiency model of linking stakeholders.
- Much depend on price of exporting partner, they do not have right to decide purchase price.
- Poor transportation system causing much difficulty.

- **Propositions**

- Planning production area for each commune, and distributing concretized area for each company.
- Establishment the model of transferring advanced technique science to help farmers have much knowledge in growing export crops.
- Promoting degree for communal cadres through training courses on management.
- Supporting the methods of organizing farmers for company's person.

- Reducing business taxation.

III.1.3.2.4. Collectors

Because of the own characteristics of vegetable channels in Thai Thuy district (foodstuffs export primary processing company plays leading role in distributing product), there are a few collectors (whole district have 25 – 30 collectors). During operation process, they do not take part export commodity channel but they concentrate on domestic channel distributing to neighbor province as Hai Phong, Hung Yen, and Thai Binh city. Main products are vegetable, crop for directly consumption. We divide stakeholder into 2 types;

Local collectors: they operate in the narrow area, not often and only participating to collect product when have order of wholesalers.

Often collectors: they operate continuously and over district but they are concentrated strongly in the winter season, selling vegetable, radish and fruit create main income for them. They can sell product to other provincial market. There are many form of consumption following this channel but it is expressed clearly in two forms:

Selling at their house:

This form is very popular here, so as to consumption to this form, each collector has 3 – 5 wholesalers. Ways of transaction and exchange information about price, type and quality of product are mainly through telephone or directly exchange in the last transaction. In their opinion, this form can reduce labor force but getting lower profit and much losing during process of preserving while they do not have enough knowledge on preservation. This is the demand for the way to interfere to these stakeholders in the coming time.

Selling out of place:

Beside to above consumption form, these stakeholders also transport directly to market and vegetable gathered place (in Hai Phong, Hai Duong, Thai Binh city...) then vegetable is sold to wholesalers, retailers in the market and distributed area. This form is divided into 2 main stages below:

Stage 1: From 7h to 11h30, these stakeholders collect vegetable of farmers in the district (it may later in case of the asked amount is big or scared vegetable).

Stage 2: From 15 h to 20h, handling goods for wholesalers and retailers in gathered place. Because local stakeholders do not operate continuously, norm of quantitative norms reflect scale of these stakeholders are much significant. We only concentrate much on continuously collection. The detail norms are expressed through below table:

Table 24: Some norms of continuous collectors in Thai Thuy district

Norms	Units	Quantity
Amount of transportation	Kg/time	350
Number of operation year	Year	6.5
Number of input stakeholder	Person/day	5-6
Number of output stakeholder	Person/day	2.5
Number of participating labor	Labor	1.2
Type of selling product/day	Type	3-4
Amount of average capital	1000 VND/day	12.5

Source: Survey of VASI in 2005

Table 25: Operation cost of continuous collectors in Thai Thuy (Unit: VND/day)

Norms	Continuous collectors
Petroleum cost for purchasing vegetable	5000
Petroleum cost for selling vegetable	12500
Telephone	4500
Packages	5000
Fee of motorbike and market	5000
Other cost (fee for through bridge and law on transportation cost)	10000

Source: Survey of VASI in 2005

Table 26: Advantages, challenges and proposition of stakeholders

Norms	Special collectors	Local collectors
Advantages	<ul style="list-style-type: none"> - Knowing clearly purchase area - Confidence to their occupation 	<ul style="list-style-type: none"> - Knowing clearly purchase area
Challenges	<ul style="list-style-type: none"> - Difficulty in output of product - Scareness types of product - Vegetable is not distributed equality in the year but it is concentrated on season result in difficulty to purchase it and stable stakeholders. - Little experience in operation, not to know how to access predilection of the market - Few capitals to enlarge business operation as well as invest head office and means. - Lack of experience in preservation product. - Producers do not have much experience in production especially the requests of market for quality → Difficulty in competition to other place's vegetable. 	<ul style="list-style-type: none"> - Not to be decided output of product. - A few experiences to enlarge purchase operation. - Scareness types of product. - Difficulty in purchasing product (not have capacity to compete with other stakeholders due to not collect continuously. - Getting low interest.
Proposition	<ul style="list-style-type: none"> - Borrowing loans with low interest in long time. - Planning vegetable specialized area, using new seeds in production. - Supporting sign contract for consumption with companies and supermarket. - Opening training courses on preserving, marketing and access market information. 	<ul style="list-style-type: none"> - Borrowing loans with low interest in long time.

Source: Survey of VASI in 2005

III.1.3.2.5. Retailers

Retailers are the important stakeholders in commercial system; they play cluing role market and consumers. Because of some certain limitation, we do not study retailers in long channel but we concentrate on retailers in short channel in the locality.

Table 27: characteristics and scale of retailers

Norms	Units	Local retailers
Number of operation year	Year	8.5
Time of operation in the year	Month	12
Form of purchasing product		Purchasing in the field, farmers transport to sell in the market
Amount of purchasing in the day	Kg	52
Type of product in the day	Type	8 - 10
Number of input stakeholders	Person	7- 8
Total value in the day	1000 VND/day	200 - 300
Profit per day	1000 VND/day	20-25

Source: Survey of VASI in 2005

Table 28: Some operation norms of retailers in Thai Thuy district and Hai Phong

Norms	Retailers in Thai Thuy	Retailers in Hai Phong
Market fee	2000	4000
Package	3500	10000
Sanitation cost	2000	2000
Fee for motors	1000	2000
Fee for renting stall	3500	8000
Telephone	-	3000
Total of fee per day	12000	29000
Amount of selling per day	52	105
Cost per kg	231	276

Source: Survey of VASI in 2005

We select some channels to calculate price of product below:

- Channel 1: Cucumber is sold in fresh form (original fruit) per one kg from producer → collectors in Hai Phong city → consumers.
- Channel 2: Cucumber is sold in fresh form (original fruit) per one kg from producer → retailers → consumers.
- Channel 3: Cucumber is calculated per one kg (primarily processed fruit) from producer → cooperatives → foodstuffs export primarily processing company.

Assumption of calculating that price of product is current price and it is average price of surveyed stakeholders; the cost of stakeholder is stable, amount of selling product is calculated on average of each stakeholder. Process of distribution profit through stakeholders is expressed clearly by below table;

Table 29: Foundation process of cucumber's price through stakeholders

Norms	Channel 1	Channel 2	Channel 3
Farmer			
Input price	780	950	1750
Collectors			
Input price	780	-	-
Expenditure	120	-	-
Cost price	900	-	-
<i>Output price</i>	1000	-	-
Profit	60	-	-
Cooperative			
Profit	-	-	50
Agricultural product export Company			
Purchasing price	-	-	1875
Cost price	-	-	4570
Selling price	-	-	4770
Profit	-	-	200
Retail price			
Input price	1000	950	-
Expenditure	231	276	-
Cost price	1231	1226	-
Output price	1500	1500	-
Profit	269	274	-

Source: Survey of VASI in 2005

III.1.3.4. Policies of Thai Thuy district on development vegetable

- Reducing land using taxation, renting land...creating favor of transparent environment for company located in the district.
- Supporting usage new seeds to production.
- Priority policy on investment infrastructure for vegetable production area.
- Training, constructing project of production for each season, detaching cadres to check and help farmer implement.
- Rewarding communes, cooperative that enlarge vegetable area.
- Detaching cadres to study processing model then transferring and investing drying room to farmers.
- Encouraging companies contributing to farmer's production as well as adjustment price when they purchase product.

III.1.4. Consumers

In system of channels, we select city's consumers to survey, in other's province, the selection of retailers to survey have much difficulty.

The consumers buy vegetable from retailers may be divided into 2 main groups: Group having high income (group 1) and group having low income (group 2). Although vegetable

does not have high value and occupying a small part of household's meal but some characteristics will show the difference between group having high income and others.

- Group 1: they usually buy vegetable of familiar per son, who have fixed place because they believe in quality and price of vegetable. Group 2: they usually vegetable of peddlers or out of market, which do not have to pay fee and other expenditure, because they sell vegetable cheaper than others.
- Group 1: they have high demand and continuously for high quality, off season, and different to normal vegetable in order to improve their meal. This demand of group 2 is rather lower than group 1 because of their income.
- Group 1; They are much interested in quality, sample, fresh and the way to bundle vegetable before interested in price while group 2 are much interested in price.

One of the interests of consumers is whether quality of rice is ensured or not. In which, the excess of pesticide is most interested in. Vegetable that has good looking is use pesticide much and not to be insolated right time. Thus, some consumers buy little leaf vegetable to change to radish vegetable. In order to solve this problem, beside to propaganda to promoted producer's awareness on safety vegetable production, building trademark is also very necessary. However, this is only of few people while almost consumers accept current consuming way.

IV. Conclusion and proposition

Entrust in the situation of production and commercialization of vegetable in Thai Binh province, we can present some below conclusions.

- Production of vegetable has been increasing in both of area and yield. While area of rice is reduced.
- Producing vegetable spontaneously and only to meet the consumer's demand inner region.
- Commodity channel in surveyed place has not been developed and remain too simple. Few private dealer system, it is only concentrated on some communes having the development of collection system and long commodity channels. Almost of product lack of consumption market and face much difficult to consume.
- Few processing company, there are only 2 companies for agricultural product primarily processing in Thai Thuy district. This model is implemented very well, that contribute to consume product of farmers.
- Province does not have any policy on encouraging and supporting vegetable production in wide area except the district's policy.

In order to promote vegetable production in the future, it is necessary to do some works:

- Province has supporting policy vegetable producing area aim at diversity crops, change economic structure, especially in area that has potential to produce vegetable in the winter season.
- Building state owned and private owned factory aim at solving output stability for farmers. Beside to priority policy, selection of potential crop and building reasonable material area must be interested.

Annex

List of surveyed stakeholders

Stakeholders	Address
Provincial level	
Branch of crops- Department of agricultural and rural development	
Vu Thu district	
Office of agricultural and rural development	Vu Thu town
Office of statistics	Vu Thu town
Tan Phong agricultural cooperative	Tan Phong commune
Trung An agricultural cooperative	Trung An commune
Mr. Phung Van So	Collection to Da Nang city, Trung An Commune
Mr. Phung Van Tien	Collection to Nam Dinh, Trung An commune
Mr. Phung Van Thao	Collection to Nam Dinh, Trung An commune
Mr. Tien	Collection to Nam Dinh Trung An commune
Mr. Vu Ngoc Lien	Farmer, An Loc village, Trung An commune
Mr. Thu	Farmer, An Loc village, Trung An commune
Mr. Thung	Farmer, An Loc village, Trung An commune
Mrs. Thu	Farmer, An Loc village, Trung An commune
Thai Thuy district	
Office of agricultural and Rural development in Thai Thuy district	Diem Dien town
Thuy Luong agricultural cooperative	Thuy Luong commune
Thuy An agricultural cooperative	Thuy An commune
Thuy Tan agricultural cooperative	Thuy Tan commune
Thuy Chi agricultural cooperative	Thuy Chi commune
Thuy Son agricultural cooperative	Thuy Son commune
Asia pacific company	Diem Dien town
Van Dat company	Diem Dien town
Mr. Hanh	Onion processing in Thuy Tan commune
Mr. Dao Ngoc Dieu	Collectors in Thuy Binh commune
Mr. Pham Van Nghi	Farmer in Thuy Binh commune
Mr. Hai	Farmer, village 3, Thuy Son commune
Mr. Nguyen Dinh Hien	Farmer, village 3, Thuy Son commune
Mr. Nguyen Van Cong	Farmer, village 3, Thuy Son commune
Mr. Pham Trung Kinh	Farmer, village 3, Thuy Son commune