

METRO

Cash & Carry Vietnam Ltd.

gtz



**Ministry of Trade
Of S.R. Vietnam**

Analysis of vegetable value chain in Hai phong province



**Dao The Anh, Dao Duc Huan, Ngo Sy Dat,
Dang Duc Chien, Le Van Phong
Agrarian Systems Department
Vietnam Agriculture Science Institute**

Ha noi, 12/2005

Table of content

I. Abstract.....	5
II. General situation.....	5
II.1 Overview of Hai Phong city.....	5
II.2 Vegetable production situation of Hai Phong city.....	7
III. Characteristics of Hai Phong vegetable market.....	9
III.1. Characteristic of the market and supply source of vegetable for Hai Phong city.....	9
III.2 Vegetable value chain structure of Hai Phong city.....	10
III.2.1 Characteristics of stakeholders participating in the vegetable value chain in Tien lang district.....	11
III.2.1.1 Farmer.....	11
III.2.2.2 Agricultural cooperative.....	15
III.2.2.3 Primary processing company of export products.....	20
III.2.2 Characteristics of actors participating in vegetable value chain of Thuy Nguyen district.....	24
III.2.2.1 Farmer.....	24
III.2.2.2 Collectors.....	27
III.2.2.3 Wholesalers.....	28
III.2.2.4 Retailers.....	29
III.2.2.5 Analyzing value chain value.....	30
III.2.3 Consumers.....	31
IV. Conclusion and proposal.....	32
IV.1 Conclusion.....	32
IV.2 Proposal.....	33

List of tables

Table 1:	GDP structure of Hai Phong in current price	7
Table 2:	Area and production of vegetable of Hai Phong distributed to Districts	8
Table 3:	Agriculture production value (in fix price of 1994).....	9
Table 4:	Characteristics of surveyed households	12
Table 5:	Area of winter vegetable of the households surveyed in Tien Lang district before and after signing contract	12
Table 6:	Return structure per year of the households surveyed in Tien Lang district	13
Table 7:	Calendar of farming season for plants in Tien Lang	13
Table 8:	Economic efficiency of some production models of the surveyed households.....	14
Table 9:	The difference between the year 2002 and 2005 in the surveyed households	15
Table 10:	Comparing economic efficiency between products sold to companies and the one to free market of households	15
Table 11:	Companies and cooperatives in contract signing.....	16
Table 12:	Some information of cooperative's function.....	17
Table 13:	Prices of some products signed in 2005 by some cooperatives.....	18
Table 14:	Form and quality standard requirement of product primary processed for export	22
Table 15:	Expenditure of primarily processing salted cucumber for export of Hai Phong agricultural materials company (Unit: VND/kg)	23
Table 16:	General characteristics of households surveyed according to channels originating from Thuy Nguyen district	24
Table 17:	Return structure of households surveyed in Thuy Nguyen district.....	25
Table 18:	Economic efficiency of production models in household surveyed in Thuy Nguyen district	25

Table 19:	Calendar of farming season of some vegetable varieties in the households surveyed	26
Table 20:	Some characteristics of professional collectors in Thuy Nguyen.....	28
Table 21:	Expenditure of professional collectors in Thuy Nguyen	28
Table 22:	Characteristics of retailers.....	30
Table 23:	Pricing through actors for a type of vegetable (Unit: VND/kg).....	31
Table 24:	Quality requirement of some kinds of vegetable	32

List of figure

Figure 1:	Vegetable production of Hai Phong over the last two years 2003-2004.....	8
Figure 2:	Market share of output of wholesalers in Thuy Nguyen	29

List of diagrams

Diagam 1:	Supply source and market consumption of vegetable in Hai Phong.....	9
Diagam 2:	Vegetable value chain of Hai Phong ciy.....	10
Diagam 3:	Vegetable circulation in Tien Lang district.....	11

I. Abstract

Located on the core economic triangle area of the North, Hai Phong is an active city. Like other big cities of the country, its vegetable demand is heading toward safe, fresh or high-ranking vegetables as well as diverse kinds. This is an issue attracted many attentions of the leading persons of the city with a lot of encouraging and development such as establishing a model of safe vegetable already done in An Lao and Thuy Nguyen districts. Especially, the province cooperated with a foreign company in constructing a high technology zone in An Lao in order to produce tomato, cucumber and various kinds of flower. As a result, this can open a new strategy of advance technologies development for the city. The suburbs areas is planed for cultivation plants intended to export such as Anh Dao tomato, baby-cucumber, onion, garlic, chili, and potato...

Hai Phong City seems a market having great consumption and diversity of vegetable kind. The majority supply sources for this market are the districts near the city such as An Duong, Thuy Nguyen while the districts far from the city Tien Lang and Vinh Bao concentrate in vegetable production for export companies, which process agricultural food and located inside or outside the city. Hence, vegetable is frequently produced for local consumption. The collection system of the commercial actors has not developed in the last time.

Two districts Thuy Nguyen and Tien Lang are the ones selected for this research. Thuy Nguyen has proximity to the city and orientation both of ordinary and safe vegetable mainly served for demand of the city while Tien Lang has large area concentrating contracted production with companies to supply sorts of vegetable for export-oriented. Based on these characteristics, the study was carried out in 2 districts according to its commodity channel.

II. General situation

II.1 Overview of Hai Phong City

Geographical location

Hai Phong is located on Earth of Northern coastal region, 102 km far from Ha noi capital in the latitude from 20^o30'39" to 21^o01'15" N and longitude from 106^o23'39" to 107^o08'39" E with total natural area of 1,519.2 km²

- The North borders with Quang Ninh province
- The West borders with Hai Duong province
- The South borders with Thai Binh province
- The East borders with Dong sea

Relied on various transportation systems such as road, river road, railroad, seaway and airway, Hai Phong is convenient in circulation nationally and internationally.

Natural condition

- Characteristics of land and terrain:

The North is regarded as a midland consisted of flat areas and hills while The South likes a delta with low and flat terrain towards the sea. Although the area of the hills and mountain occupies only 15% of total area of the city, it scatters over a half of the Northern area in a continuous line heading to The Northwest – Southeast. The lines heading to The Northwest – Southeast and from mainland to sea are composed of rock and sand combination, clay layer and limestone in different year old. Interposed by hills and mountain, small flat areas are scattering with both ancient sediments from hills, mountains and the one called modern-alluvium-sediment.

- Climate

Hai Phong is located on the Asian monsoon-tropical belt, closed to Dong sea so that it is effected by monsoon. The season with north – easterly wind (winter) is cold and dry from November to April. The season with monsoon wind (summer) is cool, rainy from May to October. The average rainfall is from 1,600 to 1,800 mm and storms always appear from June to September annually.

In Hai Phong, there are 2 separated seasons winter and summer with a fairly temperate climate. It is 1⁰C warmer in winter and 1⁰C cooler in summer than it does in Hanoi due to its proximity to sea. Monthly, the average temperature is from 20 to 23⁰C, the highest one is 40⁰C; the lowest one is under 5⁰C. Annually, the average humidity is from 80 to 85%, the highest one is 100% in July, August, and September, the lowest one is in December and January. In whole year, it has around 1,692.4 hours of sunshine.

- Rivers

Hai Phong has a dense system of rivers with the average density from 0.6 to 0.8 km per 1 km². Its rivers mainly are the branches of Thai Binh River falling to Northern Bay. Upstream, we can see that Cau River rises from Van On mountainous area at a height of over 1,170 m, belongs to Bac Kan province. This river flows to Pha Lai and combines with Thuong and Luc Nam rivers which rise from Thai Binh river flowing to delta before falling to sea with 97 km long then changes the direction flowing towards Northwest – Southeast. From this river combination, the river flows in a terrain less and less sloping. There are systems of branches of river such as Kinh Mon, Kinh Thay, Van uc, Lach Tray, Da Do, which originate from Thai Binh River and fall to the sea at five main estuaries. In Hai Phong, there are 16 main rivers spreading throughout the city with over 300 km long in total. Those rivers consist of some rivers such as Thai Binh, Lach Tray, Cam, Da Bach- Bach Dang..

Social-economic condition

Hai Phong has five urban districts, one town and eight rural districts (in which there is one island district Bach Long Vi). The population of Hai Phong in 2004 is 1,770,800 persons, in which the one in rural area occupies 60% of total and 40% in urban area. The population density of the city is 1,166 persons per km².

Total labor over 15 years old of Hai Phong in 2004 was 1,356,970 persons in which the workers in labor age in urban were 515,208 persons (occupies 38%), in rural area were 841,762 persons (occupies 62%). Workers having job were 922,825 persons accounting for 68% of workers in labor age. The workers in agricultural field were 452,937 persons (occupies 49.1%). Thus, within total labor having job of a city belonging to Central, there is a half of labor working in agricultural field.

GDP of Hai Phong in 2004 was VND17,748.5 billion increasing 13.82% compared to the year 2003. In which, GDP of the service sector occupied the highest proportion 49.57%, and the lowest one was agricultural sector, which is decreasing annually.

Table 1: GDP structure of Hai Phong in current price

Sector	2003		2004	
	Value (VND billion)	Percentage (%)	Value (VND billion)	Percentage (%)
Agriculture, forestry, and fishery	2,368.6	15.19	2,528.1	14.24
Industry, construction	5,577.8	35.77	6,422.8	36.19
Service	7,647.1	49.04	8,797.6	49.57
Total	15,593.5	100	17,748.5	100

Source: Statistical yearbook of Hai Phong, 2004

II.2 Vegetable production situation of Hai Phong city

Regarded as a big city, Hai Phong has a high and various demands in vegetable. Thus, its vegetable production is characterized by following:

- Beginning to change into safe vegetable, the city has had some models producing fresh vegetable such as the one belonging to Central of high technology development in agro-forestry in My Duc commune, An Lao district. (with glasshouse Sawtooth funded by Netafim Asia Pacific company from Israel, innovation transference in the area of 7.42 ha with VND 22.5 billions, only some kinds of plant are planted in that area such as tomato, cucumber, rose and orchid. The expected production of tomato and cucumber is about 200-300 tons per ha and they can be grown in all seasons of the year). Besides, there is a model supported by People Committee of the city, Central Extension Centre, Department of agriculture and rural development, and Extension Centre of the city. By implementing of the Extension Centre of the city, a model of high quality vegetable production is established in the area of 38 ha with many kinds of vegetable such as cabbage family. The model is demonstrated in Cooperative Thuy Tu in Thuy Duong commune, Thuy Nguyen district and Hong Phong commune, An Duong commune and An Tho in An Lao district.
- To concentrate in producing vegetable for export in some rural districts such as Tien Lang, Vinh Bao, Thuy Nguyen, An Lao in the total area of 10,000 ha. The vegetable serving for export purpose such as cucumber, granadilla, mini-pumpkin, tomato, onion, garlic, chili, tomato... is primary processed in factories inside the city, and exported, frequently to Taiwan. The ordinary vegetable is not to be attached special importance to develop due to its output serves for local demand.
- The plan of the area specializing in vegetable production from 1000 to 1500 ha in which having 500 ha for vegetable growing in all seasons of year was settled in sites around the city such as Thuy Duong (Thuy Nguyen), An Thai, An Thä (An Lao), Tu S-n (Kien Thuy), Hong Phong (An Duong).

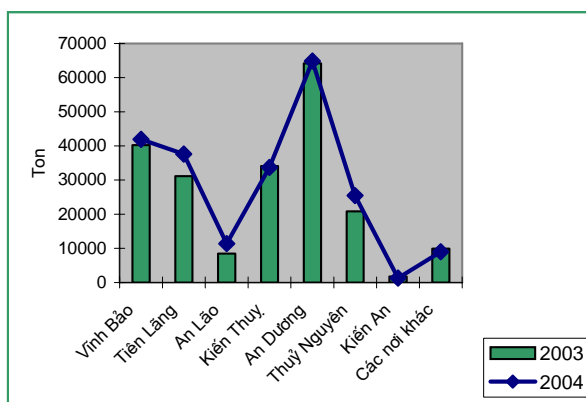
- Specialty vegetable such as curly lettuce, violet cabbage, and exported tomato has been produced in the large area in districts Kien Thup, An Lao, Thuy Nguyen...

Table 2: Area and production of vegetable of Hai Phong distributed to Districts

#	District	2002		2003		2004	
		Area (ha)	Yield (quintal/ha)	Area (ha)	Yield (quintal/ha)	Area (ha)	Yield (quintal/ha)
1	Vinh Bao	1,914	181	2,512	185.9	2,218	188.9
2	Tien Lang	1,684	173.8	1,752	177.9	1,999	188.2
3	An Lao	566	178.5	438	195	593	191.5
4	Kien Thuy	1,729	211.4	1,638	208.1	1,583	213
5	An Duong	2,982	231.7	2,694	238	2,639	245.8
6	Thuy Nguyen	1,397	148	1,459	142.7	1,470	173
7	Kien An	88	173.2	111	158.6	81	160.2
8	Others	159	194.34	503	196.94	449	200.08

Source: Statistical yearbook of Hai Phong - 2004

Figure 1: Vegetable production of Hai Phong over the last two years 2003-2004



Source: Statistical yearbook of Hai Phong - 2004

Cultivation sector still plays an important role with percentage of 68.5% of total production value of agricultural sector (year 2004). In which, food grains crop still has a high proportion (nearly 60 %) and foodstuff crop (with vegetable), increasing-oriented occupied nearly 1/5 of value of cultivation sector.

Table 3: Agriculture production value (in fix price of 1994)

	2003		2004	
	Value (VND billion)	Percentage (%)	Value (VND billion)	Percentage (%)
1. Cultivation	1,433.8	69.4	1,466.3	68.5
+ Cereal	817.6	61.5	829.4	59.9
+ Foodstuff crop	247.7	18.6	271.3	19.6
+ Industrial crop	56.0	4.2	66.9	4.8
+ Fruit trees	208.0	15.6	218.1	15.7
2. Livestock	632.6	30.6	675.4	31.5
Total	2,112.4	100	2,190.7	100

Source: Statistical yearbook of Hai Phong - 2004

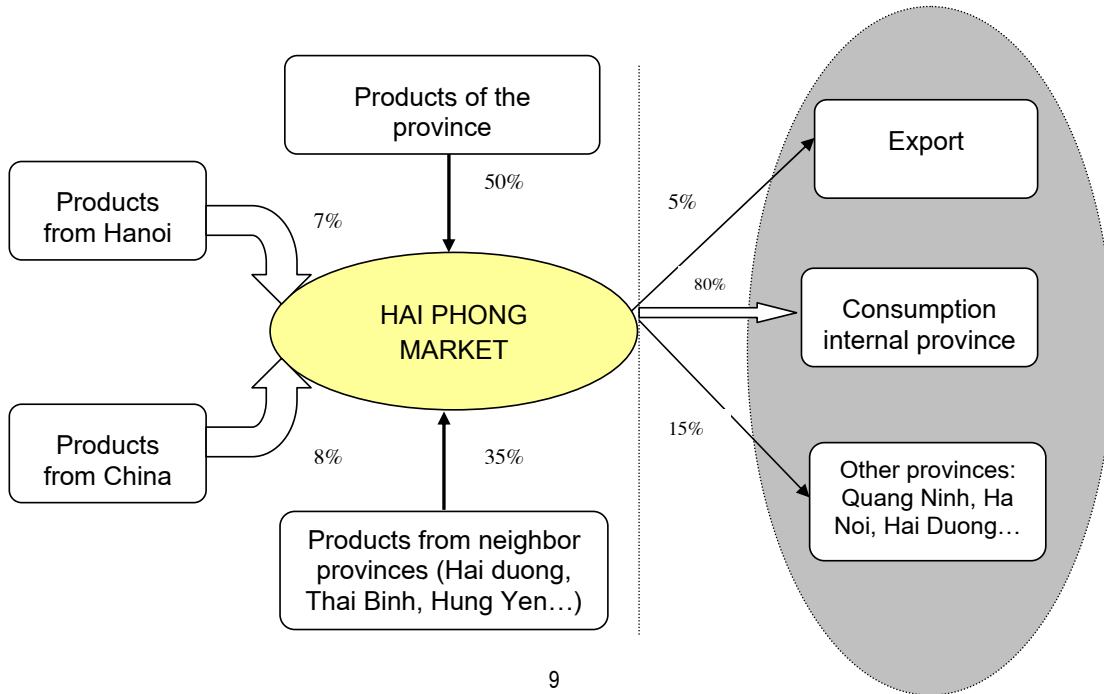
III. Characteristics of Hai Phong vegetable market

III.1. Characteristic of the market and supply source of vegetable for Hai Phong city

Free market: Currently, supply sources of vegetable are mainly concentrated in Do market inside Le Chan district. It is considered a wholesale market of fruit and vegetable. Products from other provinces are transported there, and then delivered to urban and rural districts. This market is also a wholesale market in which products are transported to other provinces.

The vegetable supply sources of Hai Phong mainly have origins from Hai Duong and Thai Binh with some main kinds such as kohlrabi, cabbage, carrot, tomato, onion, garlic, spicy vegetable, can be expressed through a following diagram below:

Diagram 1: Supply source and market consumption of vegetable in Hai Phong

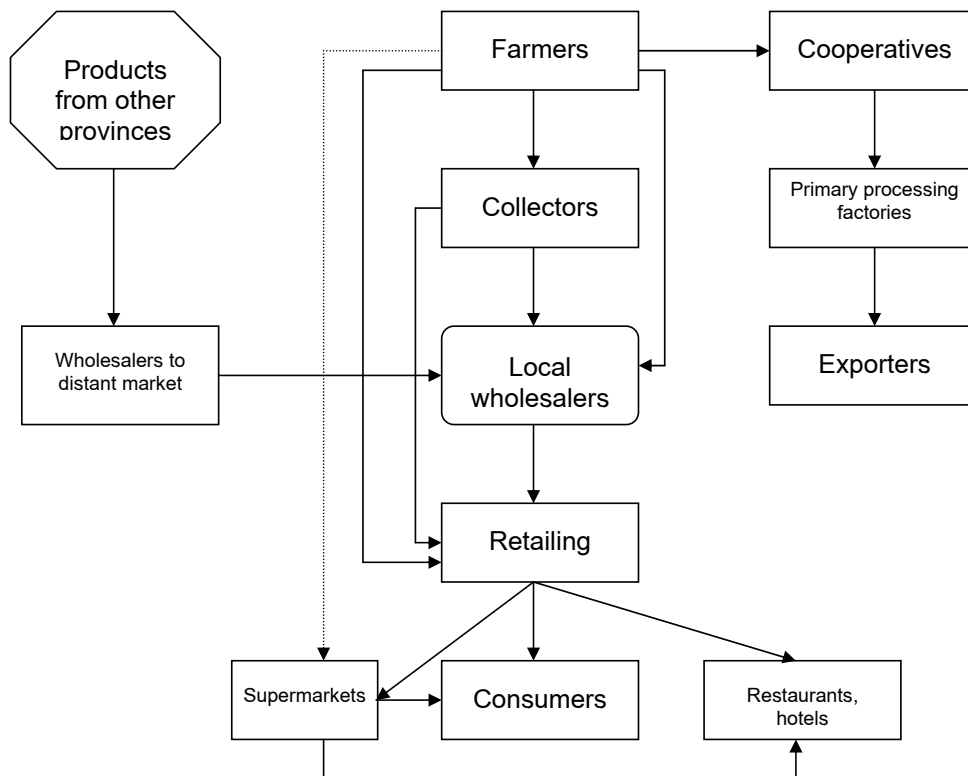


Raw materials vegetable market for factories primary and final products processing for export:
 This market has been shaped and coordinated mainly by primary processing factories and final product processing factories of privates and State (inside or outside the province). Those factories has organized raw materials zone in districts, and procurement system by their own (establishing stations of primary processing in those zone or directly transporting to factories) then starting to primary process or final product process. The raw materials production organization is based on contract signing with farmers under cooperative statue (will be further described in following parts). Previously, raw materials zones of factories have be located on the districts closed to the city (An Duong, Thuy Nguyen). Recently, those zones have been moved to others sides far from the city due to ability collecting contracted products with farmer was low and those products were often sold in the market of the city at a price higher than the contracted price.

III.2 Vegetable value chain structure of Hai Phong city

The diversity of the market as well as the supply source is one of the important factors creating the diversity of both actors participating in the commodity and its consumption channel. This diversity is expressed through the diagram below:

Diagam 2: Vegetable value chain of Hai Phong city



► Selected channels:

The channels selected in Hai Phong include:

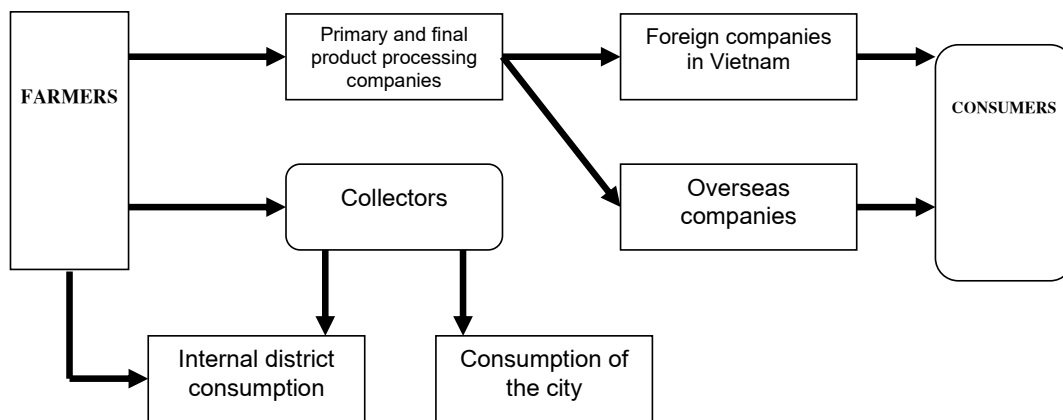
Channels in which the products transmitted through cooperatives is named exported product channels from which products of producers in Tien Lang district go to primary and final product processing factories.

Channels circulating products in free market contain products from farmers of Thuy Nguyen district.

III.2.1 Characteristics of stakeholders participating in the vegetable value chain in Tien lang district

Simply, stakeholders participating in the vegetable value chain are producers, collectors, and primary processors. Vegetable is mainly circulated through channels following:

Diagram 3: Vegetable circulation in Tien Lang district



As for channels study in Tien Lang district, we focused on studying stakeholders involving in export. Their characteristic, scale, challenge and proposal solving problems will be concerned when analyzing their function.

III.2.1.1 Farmer

Farmers are beginning actors playing an important role in the value chain. Their characteristics are expressed below:

Table 4: Characteristics of surveyed households

Indicators	Unit	Quantity	Structure (%)
Agriculture area	m ²	3,060	100
Paddy area	m ²	2,840	92.81
Area specialized vegetable	m ²	220	7.19
Winter vegetable area	m ²	1,590	55.99
Number of people/household (hh)	Capita	5.33	100
Number of labor/hh	Person	2.83	53.13
Number of labor in agriculture filed/hh	Person	1.67	58.82

Source: Data surveyed by VASI, 2005

In the households surveyed, the average labor is 2.8 persons (occupies 53% of total people in hh) in which agriculture labor occupies over 50% of total labor of household. Like other sites in the edge of the town, the surplus labor of the households is served for labor demand of the city Hai Phong. Thus, there is competitiveness between labor in agriculture sector and other sectors. This means that it is necessary to consider the solid of the success once a contract of products procurement is signed while the main labor force in households is women and the old.

The average area of agriculture land per household is 3060 m² (equal to 1,6 sao/capital) in which paddy area occupies over 90%. Area of winter crop is 1590 m²/hh, area specializing vegetable plantation is only about 220 m²/hh considered very small due to some factors. Since 2002, area of winter vegetable has increased because some companies inside or outside the province have signed a contract by which farmers sell their products intended for processing and export such as tomato, baby - cucumber, chili, pumpkin, and so on. Hence, farming contract has opened an effective orientation for the local people and broke situation at a standstill of output selling which always meets many risks.

Table 5: Area of winter vegetable of the households surveyed in Tien Lang district before and after signing contract

Indicator	Unit	Before 2002	2005	Comparison	
				Structure (%)	Value
Area of agriculture land	m2	3060	3060	-	-
Area of paddy	m2	2840	2840	-	-
Area of winter vegetable	m2	360	1590	441.67	1230

Source: Data surveyed by VASI, 2005

Formatted: Font: Italic

Relied on procurement contracts of companies inside and outside Hai Phong, the area of winter vegetable of the households has increased 4,4 time from 360 m² to 1590 m² once comparing the one in the period before year 2002 and year 2005. This is a positive change in agricultural economic development of the district.

Table 6: Return structure per year of the households surveyed in Tien Lang district

Indicators	Value (VND million)	Structure (%)
Total return	34	100
Return from agriculture	15	44.12
Return from vegetable	9	60

Source: Data surveyed by VASI, 2005

Although vegetable has been developed recently, its return has occupied around 60% of total agriculture return; a figure is not regarded as small. Other main returns arise from paddy and tobacco plant.

Vegetable is frequently planted in winter season serving for signed contract with processing companies. Thus, a formula of a rotating crop in the households is normally consisted of 2 cycles of paddy and 1 or 2 cycles of vegetable, the popular plants such as tomato, cucumber for export, baby-cucumber, potato, pumpkin for export, and so on. Some those formulas are:

- Formula 1: Paddy – Paddy – Baby-cucumber – Anh dao tomato
- Formula 2: Paddy – Paddy – Potato – Tobacco plant
- Formula 3: Paddy – Paddy – Ordinary tomato
- Formula 4: Paddy – Paddy – Anh dao tomato
- Formula 5: Paddy – Paddy
- Formula 6: Paddy – Paddy – Kohlrabi
- Formula 7: Tobacco plant – watermelon – tomato

Table 7: Calendar of farming season for plants in Tien Lang

#	Month	1	2	3	4	5	6	7	8	9	10	11	12
	Vegetable kind												
1	Kohlrabi	X	X						X	X	X	X	X
2	Cabbage	X	X						X	X	X	X	X
3	Anh dao tomato	X								X	X	X	X
4	Ordinary tomato	X	X							X	X	X	X
5	Potato	X								X	X	X	X
6	Baby-cucumber									X	X	X	
7	Export cucumber								X	X	X	X	X
8	Coriander	X	X							X	X	X	X
9	Lettuce	X	X								X	X	X
10	Sweet potato									X	X	X	X
11	Export pumpkin									X	X	X	X
12	Chili									X	X	X	X

Source: Data surveyed by VASI, 2005

Table 8: Economic efficiency of some production models of the surveyed households

Indicator	Cost	Return	Profit
Formula 1	1,908,833	4,098,333	2,189,500
Formula 2	1,523,500	4,605,000	3,081,500
Formula 3	3,239,000	6,675,000	3,436,000
Formula 4	1,006,500	2370000	1,363,500
Formula 5	604,000	1,050,000	446,000
Formula 6	924,000	2,740,000	1,816,000
Formula 7	3,882,500	10,100,000	6,217,500

Source: Data surveyed by VASI, 2005

Currently, formulas 1, 2, 3 and 4 are frequently used because its outputs are guaranteed by companies. The formula 5 has been decreasing and replaced by formulas involving in procurement contracts. This is also the local strategy by which the area planted contracted vegetable is planned in the area of 2 seasons of paddy (previously, there has been nothing planted in these area). Formulas 6 và 7 are the ones bringing high profit for household but they are not stable due to unexpected changes of price.

Advantage of farmer from contract implementation

Firstly, producing bases on contract is a sound orientation in trend of market-oriented production development in which farmer produce based on market demand. Companies are the ones informing farmer information about that demand.

Secondly, farming contract contributes to local diversity of plants and economic transformation. In reality, the plant structure of the district has dramatically changed from formula only with paddy and tobacco plant to winter vegetable. This improvement remarkably contributes to increasing income for vegetable cultivators.

Farmer gains much innovation in vegetable plantation. Previously, they have had a limited knowledge in vegetable production. They have just known to produce some popular kinds of vegetable such as kohlrabi, cabbage...When companies sign contract with farmers, they transfer innovation in cultivation to farmers through technical training courses with the direct guiding in fields.

The companies have brought solutions for farmer's output. As a result, although there have been some limited points, the contracts is considered the best motivation to farmers in their production. Encouraging farmer engaging in farming contract, the processing companies have issued clearly supported policies. For example, through cooperative status when signing the contract, those farmers receive some input such as insecticide, fertilizer, bamboo stick which costs less than 100,000/sao. For the seed, farmers have to pay half of its cost in the beginning of each season; the rest is due at the end of the season. It seems a loan without any interest.

One of important factors influencing on the success of the contract signed between companies and farmers is economic efficiency of their production models. It can be illuminated by comparing 2 rotating crop formulas following:

- The common formula before 2002: Paddy – paddy
- The formula in 2005 (after contract signing): Paddy – paddy – baby-cucumber – small tomato

Table 9: The difference between the year 2002 and 2005 in the surveyed households

Indicator	Before 2002	2005	Difference
Area of winter vegetable (m2)	360	1,590	1,230
Profit (VND/sao)	446,000	2,189,500	1,743,500

Source: Data surveyed by VASI, 2005

In 2005, the area of winter vegetable increased as many as 4.4 times led to the increasing of profit accounting for 5 times (increased around VND 1.7 million/sao) compared to the one before 2002. Clearly, there is no argument about the difference of the economic efficiency. Nevertheless, the economic efficiency also depends on market situation, especially price. In reality, in some cases, companies might not buy the contracted products due to its business challenges. In addition, if there are no ties between two partners, the company's responsibility is not concerned so that causes the disparity of the farmer.

However, in the contrast situation having high price in market, the farmers frequently sell products in free market. This is an unstable point in a contract caused by farmer who does not have a long-term advantage. Following the contract, companies will buy products at fix price, which is lower or higher than market price in the time of harvesting. Contract breaking is caused by price in market. In order to define these challenges, we have made a comparison of economic efficiency of some products sold to the companies or in free market in 2004.

Table 10: Comparing economic efficiency between products sold to companies and the one to free market of households

Indicator	To companies (1)	To free market (2)	Difference(2-1)
Cucumber	1,440,000	1,800,000	360,000
Potato	1,400,000	1,750,000	350,000
Ordinary tomato	750,000	1,050,000	300,000

Source: Data surveyed by VASI, 2005

Advantage and disadvantage

- **Advantage:** The large agriculture area of surveyed households is being brought into play and will be continued in the future. The output problem has been well solved. There has been local policies supporting producers in winter crop plantation in general and winter vegetable in particular such as technical supporting (effectively functioned extension system), direct-monetary funded-supporting (each sao of producing is supported from VND 5,000 to 50,000 by People's committee of the district). For the effective of zoning of agriculture land, households in zoning area are guided to produce at the same time, some cooperatives has sold the same kind of paddy seed to farmer due to timely season.
- **Disadvantage:** High in input price, changing in output price, unexpected change (E.g. the price of tomato in 2004 is around VND 800/kg, reached to VND 4000/kg in 2005), heavily affected by natural calamity. The output market completely depends on companies so that the farmer suffered price-pressing situation is usual.

III.2.2.2 Agricultural cooperative

Recently, most of the cooperatives in Tien Lang district have played as middle-actors in contract signing for vegetable transaction between processing companies and farmers. Hence, the function of cooperative is not only supplying ordinary collective services such as water,

input, plant protection chemical, field guarding but also drawing attention of companies engaging in signing contract with farmers, enlarging production scale with various vegetable's kinds. The authorities of district have also been contributed to contract signing mainly by investment facilitating and supporting policies.

Table 11: Companies and cooperatives in contract signing

Companies, organizations	Names of Cooperatives involving	Products signed
Hal Nam	Khoi Nghia, Quyet Ten	Baby-cucumber, Anh Sao tomato:
Đuc Loc	Cap Tien	Cucumber 266, American cucumber, sweet-corn, onion's leaves
Hai Phong tomato factory	Quyet Tien, Tien Cuong, Bach Đang, Quang Phuc, Vinh Quy, Toan Thang, Hung Thang	Tomato, Baby-cucumber
Vi Ha	Tiêu Cuong, Tu Cuong, Tiên Tien, Khoi Nghia, Tiên Thanh, Đoan Lap, Toan Thang, Tiên Minh, Bac Hung, Nam Hung	Chili
Hai Phong Agricultural materials	Tien Thang, Bach Đang, Đoan Lap	Cucumber, baby-cucumber, lettuce, chili
Hong Ngoc	Cap Tien	Pumpkin
Hung Son	Cap Tien	Baby-cucumber, pumpkin
UTAD	Cap Tien, Quang Phuc, Tien lang town, Doan Lap	Dutch potato

Source: DARD of Tien Lang district

Currently, there are 7 companies (in which there are companies Duc Loc, Hung Son, and Hong Ngoc coming from Hai Duong province) and 1 organization UTAD signing contract with farmers. This is in order to produce some products such as baby-cucumber, Anh Dao tomato, sweet corn, onion's leaves, chili, lettuce, Dutch potato...Although Tien Lang is not a traditionally-vegetable-producing area starting in to grow vegetable about 5 years, it is selected as a materials zone. Because of an important reason that the contract implement of farmers in the area closed to Hai Phong city was not as high due to selling products in free market, they had to select other regions as materials areas. In addition, vegetable development has been an attracted action supporting by a number of policies, which will be thoroughly concerned in the following parts of this report. However, vegetable produced in cooperatives has been beard a competitiveness of tobacco plants, the traditional industrial plant, especially with its high and stable price in seasons recently. As a result, the area of vegetable produced in whole year is small.

For the following research, we focused on the 3 representative cooperatives producing vegetable in Tien lang, especially on vegetable production with contract signing with processing companies.

Table 12: Some information of cooperative's function

Indicator	Unit	Cấp Tiến cooperative	Khởi Nghĩa cooperative	Quyết Tiến cooperative
Year signing contract	Year	1996	2003	2002
Number of hh signing	Household (hh)	422	343	325
Vegetable area	Ha	75	54	60
Vegetable area signed	Ha	18	14	13
Number of company signing	Kind	2	2	1
Type of products signed		Cucumber, pumpkin, potato, corn	Tomato, cucumber	Baby-cucumber, tomato
Percentage of contract implement	%	90	85	80

Source: Data surveyed by VASI, 2005

Normally, one cooperative does not sign contract with the only company as well as the only product. For example, there are Quyet Tien cooperative who has signed contract with Hai Nam company and Hai Phong tomato factory in selling baby-cucumber and Anh Dao tomato; Cap Tien cooperative who sign with Duc Loc company in selling cucumber namely A66, America, sweet corn, onion's leaves, with Hong Ngoc company in selling pumpkin, with UNCTAD organization in selling Dutch potato. This aims at some purposes: to diversify plants in order to take advantage of different characteristics of soil used, minimize risky arising from natural calamity, changing market or difficulties in business of companies. In another side, it can take advantage from strong force of each household or production area. Additionally, diversifying plants, farmers can access amount of innovation in cultivation, the foundation while adapted in the new model of production.

Contract and responsibility of cooperative

Cooperative is a middle-actor in the relationship between companies, processing factories and farmers as a status directly signing contract. Hence, cooperative is charge in solving all problems arising out of stipulations during contract implementing. Contracts are signed in each season specifically for each product. It can be a one of investing and product procurement, production-procurement, and transaction or economic one. Named by various ways, they are negotiations between partners in production or specific products supplying. After that, the cooperative signs contract with each household for production.

Table 13: Prices of some products signed in 2005 by some cooperatives

Companies	Products	Cooperatives	Price cooperative gained (VND/kg)	Price farmers gained (VND/kg)
Hung son	+ Cucumber 266	Cap tien	840	800
	+ Potato		1950	1900
Hai nam	+ Baby-cucumber	Khoi nghia	2850	2800
	+ Tomato		1850	1800
VTNN Hai Phong	+ Cucumber	Doan lap, Bach dang, Cap tien, Tien Thang	830	780

Source: Data surveyed by VASI, 2005

The contract has stipulations showing cooperative's responsibility following:

- Organizing production with area large enough, zoning to concentrative guide farmers in sowing, tending, harvesting, insect and disease preventing and solving
- Strictly managing, reasonably distributing correspond budget for farmers on right purposes
- Managing quality of all products for export, selling for any other actors is not permitted.
- Preparing convenient sites and arranging agreement with buyers in order to facilitate farmers in product gathering and fast giving-receiving.

The cooperative engaging in contract will gain a profit extracted from product price, normally from VND 20-50 /kg based on each product and in each season. This is the source of income and the motivation. From these advantages, the cooperative can exist and develop.

One of the important factors for the success of the contract is ability helping for contract implementation mainly depending on farmer and occasionally on cooperative. In reality, because of both internal and external reasons, the contract implementation is not as good as expectation:

- The price signed with companies is much lower than the market's one that pushing products sold in free market.

Cap Tien cooperative in Tien Lang, Hai Phong

Cap Tien is one of the cooperatives attracting many companies in contract signing of the district. Its chairman is an engineer graduating from Hanoi Agriculture University No1. It has held an initiative in attracting the companies in contract signing. Before 1996, its production has mainly relied on tobacco plant and paddy. Since 1996, it has begun to engage with farming. In '96-'97, it signed contract with Hai Phong agricultural materials company for producing cucumber, in '98 with UTAD in potato; in 1999, 2000 with Hung Son company in cucumber and expanded with squash, and lettuce, beet, in 2001-2003; in 2004 signed with Hai Phong agricultural materials company in producing cucumber, in 2005 with Duc Loc company in baby-cucumber and beet. The cooperative has moved from this company to that one because of two main reasons: those companies are the new comers in farming contract and the ineffectiveness.

- Quantity and quality of products was not high due to poor technical knowledge of farmers, especially with the firstly-grown plants.
- The companies has failed in business and stopped buying products.
- The cooperative's guidance in production has been not good.
- Unpredicted risky such as natural calamities and enemy-inflated destruction

In general, the farming contract has been broken due to farmers. Because the price in contract is always much lower than the one in market price, farmers try to sell products to free market. However, in some cases, that breaking situation has arisen from economic ineffectiveness such as with baby-cucumber, Anh Dao tomato that hardly has demand in free market.

Selves-confident with owned ability, cooperatives freely choose companies to sign contract. This is frequently relied on information about companies gathered through experience in negotiation and practice in production as well. Active cooperative hold an initial in attracting contract signing of companies due to some advantage: going in business and production guidance from which gaining a commission as well as bring higher income to farmers, having "share" in the subsidy of the district (the cause from an unclear finance regulation).

Through studying function of cooperative, some advantage and disadvantage can be seen as following:

▪ Advantage

- Having policies in encouraging production and plant transforming as a local supporting (by money, technical training and policy of initial attracting companies)
- The demand of companies in signing contract is fairly high
- Because the ordinary vegetable such as kohlrabi, cabbage, cauliflower, Chrysanthemum... is hard to sell in market outside the city due to the difficulties of transportation (have to cross a ferry to reach to Hai Phong city), farmers have few chose of winter plantation.

▪ Disadvantage

- Production areas are scattering and have not had a careful planning which affects irrigation, production guiding; insect, disease preventing and treatment, and product procurement.
- Convincing farmers involve in contract signing meets challenges if products do not bring higher profit compared to previous seasons.
- Planting vegetable in whole year is difficult for farmer used to cultivating tobacco, the tradition plant grown after harvesting paddy.

Development orientation in assured-buying product of cooperatives in the coming tine

- Cooperatives need to zone reasonably production areas according to contract, facilitate production guiding, irrigation, plant protection, and insect, disease preventing and treatment.
- Choosing products signed appropriate to land condition and production and farmer' knowledge as well especially, those products have to bring high profit to farmers.
- Should negotiate with final product processing, primary processing companies in cases of occurring a big changing of price in free market. This can contribute to decrease the

difference between market price and signed-price, increase profit of farmers and their comfortable atmosphere for next seasons.

- Cooperatives should launch collective actions supplying production-input materials to decrease its cost. These actions can be done independent of supporting action of processing companies. In reality, there have been companies subsidizing input by supplying lately paid fertilizer to farmers (deducting output without interest) but the price of input materials was higher than the one in market.
- Supporting funds from district for farmers participating in producing export plants was not throughout announced to farmers. Cooperatives gave this money to farmers in the first year operation and cut out in the following years.
- Searching for new contract for the products with which the farmers have rich experience and high profit.

III.2.2.3 Primary processing company of export products

This is an actor playing an important role in the Tien Lang vegetable value chain. The main function of them is to collect process and export through the role of cooperatives. There are two kinds of their products, the first is final products able served for consumers, the other is primary processed and exported to foreign companies to become final products.

Currently, companies in Tien Lang commonly have factories situated in Hai Phong city for convenient in transportation and export, some of those factories are in Hai Duong.

In strategies, business plan in order to reduce risky, and seizure an expected quantity of product, companies frequently sign contract with various cooperatives. This is caused from farmers not following the contract signed resulting a low rate of contract implementing (this rate is about 80-85% based on each product. Products having high demand in free market such as potato have lower rate than others do). It is free for companies to choose cooperative to sign contract. However, they always choose cooperatives with its prestige in farming contract and having high skill in cultivation as well. With cooperatives having experience in producing a specific plant, companies do not have to spend much in technical training compared to a one firstly involving.

Contract signing mechanism of primary processing companies in Tien Lang

As concerned above, the companies pay a commission to cooperatives signing contract as an income from production guiding. This income is commonly around VND20-60/kg. Besides, In the case of gathering enough product while the cooperatives still have surplus product, the companies will consider and reward calculated on quantity value of that surplus (as for the Hai Phong tomato company, it is 5%). The reason for this award is that in reality it is difficult to reach quantity amount set in contract. This can effect on business plan of companies because they already fix supplying amount of their output with other partners.

Supplying seed and agriculture chemical: It can be seen an encouraging mechanism of companies for farmers, especially with a new plant suggested in contract signing. There are two type of these supporting: giving money or materials (as for Hai Phong agricultural materials company, this norm is VND200,000 not in monetary by in materials). For cucumber, this supporting includes money advanced for bamboo stick calculated per sao. Companies fix Price

of seed. Price of materials is negotiated price. All advance paying is then included value of product sold excluded interest.

Responsibility of primary processing company in contract signing

Technical training for farmers is a requirement in the beginning season or growing a new variety. Frequently, companies associate with cooperatives in training course organizing for farmers signing contract. Besides, companies appoint technical staffs with cooperative's staffs to supervise technical practice of farmers, timely adapt, find out their derogation and control insect, disease and harvesting. Input materials and tools is necessary to supply timely. Product procurement is need to quickly done in order to minimize loss. Hence, companies should prepare plan and sites of collecting needed to be informed to farmers.

An important responsibility is payment on time. There is a difference in payment among companies. For example, payment after from 10-15 days since liquidating contract between two partners (Already minus cost of seed and materials given in advance); Payment in cash or transfer, payment once a month with a value of 70% of total value paid, the rest payment will be done based on valid and sufficient receipts. However, in reality the payment is occasionally done lately, some cases is in the time of 2-3 months after collecting. This affects profit of farmers and right in company's in the following seasons.

Primary processing factories of Hai Phong agricultural materials company

It is located near Khue station of the company. This site is charge in production organization, signing contract with agricultural cooperatives, collecting and primary processing then selling output for foreign companies in Viet Nam. Products processed are cucumber, baby-cucumber, lettuce, salted chili. Area and type of product signed is changed annually, The contract is signed seasonally. Price signed is equal to every cooperative. In 2005, this site signed with 4 cooperatives in baby-cucumber, approximately 500 tons/season.

Currently, this company meets some challenges in production organization and product buying. It has reduced buying price again the increasing price of input and nearly unchanged price of output. But this is right problem not attracting farmers engaging with contract. There is a demand of the world decreasing and competitiveness with China competitor. The site has eliminated some kinds of product and maintained the only baby-cucumber.

Table 14: Form and quality standard requirement of product primary processed for export

Product	Requirement
Cucumber	Fruit is in fresh and intact, equal straight, hasn't got bigger part, not curved-formed, hasn't got smaller part as a tail, without signal of insect, suntanned, putrid, crush, scratching, white in peel due reaching ground or bamboo stick, has been cut out its stalk of both beginning and end part. Its diameter measured in the middle of the body is from 2.5 to 2.7 cm (the bigger or smaller one is not accepted) <i>(Hai Phong agricultural materials company)</i>
Tomato	Tomato for raw materials is solid, natural ripping, in specific red. Brix rate is over 4,7%, its size is based on the characteristic of each variety. Its minimum weight is over 30 gram/piece, It is need to cut the stalk off, free of insect, isn't putrid, without strange deformity, it is not wet, mixed with extraneous matters, ripe enough or ripe-forcing, smooth and flat in peel not suntanned, free of black-point. Protection plant chemical residue is under permitted level. <i>(Hai Phong Tomato processing company)</i>
Pumpkin	It is old enough to be ripe, not crushed; free of insect, not putrid, red inside, average weight is over 2 kg <i>(Hong Ngoc Ltd.)</i>
Chili	It is fresh, ripe, equal red, free of insect, not suntanned, not putrid and crushed, curved. It likely seems the same among different sizes of chili-big, small, and medium (in which the smallest ones occupy less than 10% of total). Its stalk is must be rejected. <i>(Hai Phong agricultural materials company)</i>
Lettuce	The lettuce must be fresh without outer leaves and the inner-hard part; the diameter of the top must be from 1.5 cm. The piece in freshness must be dry inside, not putrid, round, smooth, without outer leaves, free of insect, hasn't got the black color inside or yellow, not crushed, free of sand or other matters. After harvested, the lettuce has been peeled its outer leaves and right sold in day, must not be left in water to the next day. <i>(Hai Phong agricultural materials company)</i>

Source: Economic contract between cooperatives and companies

Standard of products is one of the important regulations of the contract because this ensures the operation of production chains of companies and meeting requirement of companies' partners. For companies, organizing in good grading right from weighting, collecting process is highly required and strictly done. The next processes of classifying are also used to reject the unsatisfied ones.

According to Hai Phong agricultural Materials Company, profit calculated for 1 kg of product is around VND150-200. During processing, they have to bare costs for salt (1 tons of salted vegetable needs about 300 kg of salt), packaging, transportation, labor hire, management...

Table 15: Expenditure of primarily processing salted cucumber for export of Hai Phong agricultural materials company (Unit: VND/kg)

Item	Value
Buying price	780
Cost	1150
Rate of product returning (%)	40
Production price	3100
Selling price at company	3250
Profit	150

Source: Hai Phong agricultural materials company

Advantage and disadvantage of agro-food processing companies

Advantage

- That the cooperatives fairly have experience enough in production conducting based on contract, companies feel assured when signing contract.
- Companies are supported by local authorities with their specific policies
- The inconvenient transportation system of the district is the challenge reducing selling ability of farmer to markets outside.

▪ **Disadvantage**

- High price of agricultural materials does not encourage farmer in producing.
- Bringing high economic efficiency, some competitive products such as Hac My Nhan watermelon, tobacco is so strong that push farmer engaging.
- It is not always to conform strictly to fixed norm. This affects primary and final product processing of companies.
- Producing intended for market orientation is not a habit of farmers. Selling products to free market, farmers just know the short-term advantage but do not realize the long-term profit gaining from long-time cooperating with companies.
- Demand of the world has been decreased. Some partners move in Chinese market where products are cheaper than are those of these companies.

Factors ensuring the success of contract

- *Creative price in procurement mechanism:* Currently, price contracted is fixed price, which is negotiated in the early season and rarely changed. This mechanism needs to be reasonably modified according to market price at harvesting time in order to reduce losses of farmers, and make the favorableness for the following seasons.
- *To help farmer produce intended for market.*

Development orientation of companies, primary processing factories in farming contract

- Companies should modify signed price in the case of increasing price. This can increase cost but make the favorableness for the following seasons. Committing to buy products

despite of disadvantage situations is needed to encourage farmers. This experience is drawled from the case of Hai Phong Tomato Company. This company once signed contract with farmers but did not collect products during harvesting time.

- Closely cooperating with Cooperatives in training producing techniques, especially for the firstly-cultivated plant is necessary.
- Well managing the quality of fresh products relying on supervising system from starting to ending of the production processes. The process of primary rejecting products is highly recommended.
- Long-term signing not only profits companies, primary-processing factories in production but also reduces unnecessary costs.

III.2.2 Characteristics of actors participating in vegetable value chain of Thuy Nguyen district.

The advantages such as market and production (soil condition, having many provincial programs supporting vegetable cultivation...) have speeded up the development of commercial system as well as participating of stakeholders. Currently, the actors participating in Thuy Nguyen vegetable value chain are farmers, collectors, wholesalers, retailers, and consumers. Researching their characteristics permits show a clearer view about the development of this value chain.

III.2.2.1 Farmer

Farmer is an important actor of the value chain. Studying farmers permits of evaluating their capacity in production and supplying products to market. Hence, it has a orientation of action in order to better their capacity in production and market accession in the coming time.

The diversity of participating of actors causes the diversity of value channels in one of which, there is a difference among actors participating. As the result, the farmers selected are the ones participating in those channels. Their general characteristics are shown in the table below:

Table 16: General characteristics of households surveyed according to channels originating from Thuy Nguyen district

Indicator	Unit	Quantity	Structure (%)
Number of sample	Household (hh)	20	100
Agriculture land	m ²	1218	100
Paddy land	m ²	760	62
Area specialized vegetable	M ²	458	38
Area of winter vegetable	m ²	330	43
Number of people per hh	person	4.29	100
Labor amount per hh	person	2.00	47
Agriculture labor per hh	person	1.57	79

Source: Data surveyed by VASI, 2005

The average agriculture area per is very small only 1218 m² (around 0,8 sao/capita), specialized area of vegetable is 458 m² and area of winter vegetable is 330 m². During studying, we found that agriculture area and especially specialized area of vegetable is scattering. This makes many difficulties in household's production. In current, there are normally two types of vegetable:

- Specialized area of vegetable: These ones are mainly used for vegetable producing (vegetable only or 1-2 times of paddy sowing).
- Area of winter vegetable: These ones are only used to cultivate vegetable in winter crop.

Table 17: Return structure of households surveyed in Thuy Nguyen district

Indicator	Quantity (VND million)	Structure (%)
Total return	35	100
Return from agriculture	22	62.9
Return from vegetable	15	68.2

Source: Data surveyed by VASI, 2005

Although the average agriculture area per capita is low, the return from agriculture occupies high proportion (about 60%) in total return of households due to market advantage and the diversity of the rotating crops formulas.. In current, in the households surveyed, there are 5 main rotating crops formulas having efficiency as in table below:

Table 18: Economic efficiency of production models in household surveyed in Thuy Nguyen district

Formula	Cost	Return	Profit
Formula 1	1080000	536000	544000
Formula 2	3270000	991000	2279000
Formula 3	4187000	1172400	3014600
Formula 4	8817000	2081400	6735600
Formula 5	10545000	1434500	9110500

Source: Data surveyed by VASI, 2005

Note: Formula 1: Paddy – paddy

Formula 2: Paddy – paddy – cauliflower

Formula 3: Paddy – paddy – cabbage – spicy vegetable

Formula 4: Coriander– Chinese cabbage – kale – Chinese cabbage –cabbage – cauliflower - kale

Formula 5: Coriander– Chinese cabbage – kale – Chinese cabbage – lettuce – carrot

The formula 1 has the lowest economic efficiency and is used in the low ground used only for 2 paddy cycles yearly (430m² accounting for 35% of total agriculture area). The formula 2 and 3 are those used for cultivating 2 cycles of paddy and one or two cycles of vegetable. Although economic efficiency of these formulas is not very high, it frequently appears in the surveyed households. The formulas 4 and 5, the specialized formulas in vegetable, have the highest economic efficiency. Despite their high economic efficiency, these formulas require many conditions such as irrigation systems capable enough to supply water timely and adequately due to the high terrain of the field. Land distribution of the households is scattering (the average area per hh is around 3 sao in 3 or 4 plots with various characteristic of land capacity (the low plots are used for 2 cycles of paddy while the higher land for dry crops only).

Vegetable field in Thuy Nguyen district is characterized by high specializing indicated by two points: i) for along time, vegetable field has brought high economic efficiency so that is expanded widely, thus its area occupies high percentage. ii) That vegetable variety is very diverse partly meets local demand and the wide market of the city. This diversity is explained through farming-season calendar following:

Table 19: Calendar of farming season of some vegetable varieties in the households surveyed

#	Month	1	2	3	4	5	6	7	8	9	10	11	12
	Variety												
1	Kohlrabi	X	X							X	X	X	X
2	Cabbage	X	X							X	X	X	X
3	Potato						X	X		X	X	X	X
4	Water morning glory	X	X	X	X	X	X	X	X	X	X	X	X
5	Potato	X								X	X	X	X
6	Chinese cabbage		X	X	X	X	X	X	X	X	X	X	
7	Coriander	X	X	X					X	X	X	X	X
8	Lettuce	X	X	X	X					X	X	X	X
9	Small spring onion								X	X	X	X	
10	White radis			X	X	X	X	X	X	X	X		
11	Chinese cabbage	X	X	X	X	X	X	X	X	X	X	X	X
12	Green cabbage	X	X	X	X	X	X	X	X	X	X	X	X
13	Kale	X	X	X	X	X	X	X	X	X	X	X	X
14	Cauliflower	X	X	X					X	X	X	X	X
15	Basella alba	X	X	X	X	X	X	X	X	X	X	X	X
16	Carrot	X								X	X	X	X
17	Chrysanthemum	X	X	X					X	X	X	X	X
18	Spinach	X	X	X	X								
19	Pot-herbs		X	X	X	X	X	X					

Source: Surveyed by VASI, 2005

There are two distinct orientations of vegetable among households. The orientation 1 is growing short-cycle vegetable (30 – 40 days/cycle) having high economic efficiency such as Chinese cabbage, kale, coriander, lettuce... The orientation 2 is that growing some vegetable having long cycle intercropping with shot-cycle ones are kohlrabi, cauliflower, carrot integrated by kale, Chinese cabbage, coriander... Products accordant to commodity channels also have clear distinction: The products following the channels 1 and 2 normally consist of varieties of orientation 1 while the ones following channel 3 consist of varieties of orientation 2 because demand of these varieties is needed to store and transport in long time (from 1 to 2 days). Especially, to intercrop many kinds of vegetable in the same plot is popularly used. Asked about this situation, the households inferred that the efficiency of vegetable is very high (4 times higher than paddy) but in reality, vegetable area is narrow and limited in investment so that in order to cope with risks and low quantity of output, they have to plant many kinds of vegetable in the plot.

As for production selling: Products selling is individual done by farmers who do not store or process products after harvesting but directly sell to market. Asked about this issue, farmers said that they have met various difficulties such as in products selling mainly by about 70% of production is sold in the local concentrated in some big markets such as Trinh market. Trade

central market, as well as local wholesalers ...The surplus is transported and sold in the markets of the city such as Do market, Ga market ...by those farmers.

As for products harvesting: Products is normally harvested two times a day early morning and dusk. After harvesting, products circulation is not based on contract but on individual relationship accordant to market mechanism.

Advantage and disadvantage:

- Advantage:
 - Production skill of farmers is good. Currently, there are some models, programs of safe vegetable plantation contributing to improving skill for farmers.
 - Market for output: Thuy Nguyen is close to Hai Phong city, hence that vegetable output of farmers is ensured makes farmers feel assured in vegetable plantation.
- Disadvantage:
 - As for area: Cultivated area of households is small and the specializing area in vegetable is much lower. Besides, that plots distribution is scattering makes much difficulties in tending and investment.
 - As for water resource: Most of the specializing area in vegetable is high field requiring enough water. The existing irrigation system has not met this requirement. Lack of water is a huge problem for the surveyed households, especially in November and December.
 - When asked, many households inferred that because the price of some input materials such as phosphate, nitrogenous, insecticide, seed... has continuously increased during passing time while the price of vegetable has not been stable, this has negatively affected profit of cultivators.
 - Currently, vegetable plantation has faced many difficulties due to natural calamity such as flood.
 - Insect has been increasingly developed and the efficiency of some treatment chemicals has not high, hence this has seriously harmed the farmers.

III.2.2.2 Collectors

They play an important role in linking farmers to market and other stakeholders of the commodity chain while the ability of market accession of farmers is limited and market demand requires an improvement in quantity amount as well as diversity of products type. Through studying, we have divided collectors into two groups:

Regular collectors: The ones participate in vegetable collecting only in the time of profuse products (from September to February), in other months, they participate in other activities bringing higher economic efficiency. This type of actors has appeared for some years in Thuy Nguyen. Because their operation is not continuous, their partners are few mainly the wholesalers and retailers in markets of Hai Phong city.

Professional collectors: The ones having main income from vegetable collecting, their main profession, operate continuously and annually. That long time and of operating in this function has created the sustainable and wide linking with other stakeholders not only in district and city frontier but also in neighboring Provinces such as Ha Noi, Quang Ninh,...Their professional is showed through some points following:

- Stable output, in the whole year, selling based on order (normally by phone call) from wholesalers.
- Most of them have operated for over 10 years.
- Communicating with other actors mainly through telephone
- Having suppliers widely separated in district, normally, one of these actors has from 8 to 10 persons supplying product.
- Having stable income (around from VND 1,2 million to VND 3 million/month) corresponding to their scale.

Table below shows their characteristic:

Table 20: Some characteristics of professional collectors in Thuy Nguyen

Indicator	Unit	Description
Quantity transported	Kg/time	295
Number of year operating	year	12
Number of actors supplying	person/day	8.5
Number of actors buying	person/day	2.5
Number of labor participating	person	1.67
Number of product kind sold per day	kind	4 - 5
Form of transportation		Sending by buses
Form of payment		2-3 times of procurement one time of payment done by bus driver
Average capital	VND1000/day	700-800

Source: Data surveyed by, 2005

Table 21: Expenditure of professional collectors in Thuy Nguyen

Indicator	Description
Expenditure of gas	5000
Expenditure for bus ticket	25000
Phone calls	4000
Packaging	3000
Others	5000

Source: Data surveyed by, 2005

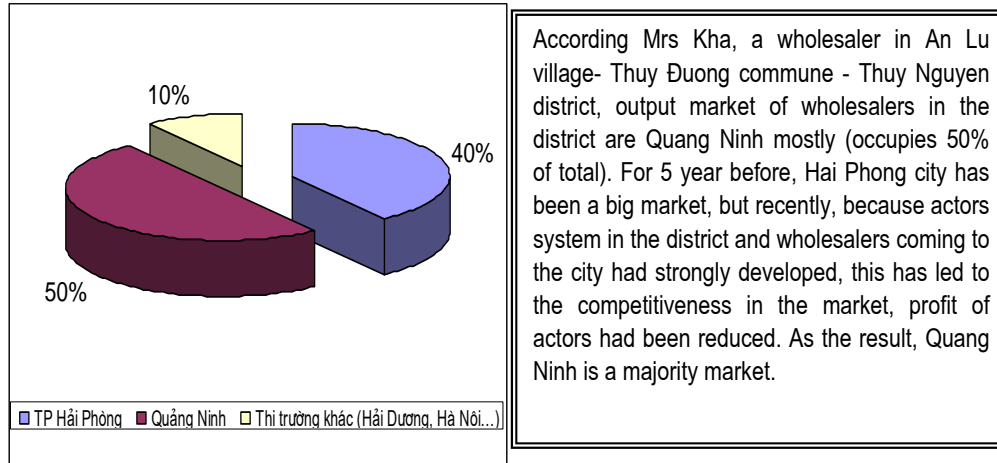
III.2.2.3 Wholesalers

They are the ones operating in the scale, which is larger than is the scale of trade system of the city. Besides linking with actors in the district, they also have linking with others in other provinces. Those actors are regarded links of chain responding in connecting actors collectors-retailers outside the province-market of the city-market outside the province. Those actors commonly buy vegetable, root, fruit from collectors or trader of distant way or producers then sell others in their owned channel. They are characterized following:

- + That trade is a main source of income for their family; they normally operate in the whole year. Their products are diverse but have majority concentrating in the ones easily preserving and low market supply.

- + Having closed link with collectors as well as retailers in local markets where they participate.
- + For the local products, their operating time is from 18 PM – 2 AM (having different operating hour depended on each market). They usually buy from 4 – 5 persons most of who are collectors inside district or some farmers having large production scale and sell to other wholesalers or other actors in other provinces as well as in Hai Phong city.

Figure 2: Market share of output of wholesalers in Thuy Nguyen



Source: Data surveyed by, 2005

In Thuy Nguyen district, that there is the differences between wholesalers of this district and others ones in other regions is form of transportation through which products are send to drivers after having information of output-actors requirement as well as price, and gathering products from local collectors and farmers. That their selling price is included the transportation fee, their total expenditure is not very high. This expenditure just consists of loading fee, phone calls fee, packaging...Hence, linking between wholesalers and their partners is based on confidence. All wholesalers said that because most of whose output-actors are their relationships, that linking is increasingly close.

This type of the actors occupies a low percentage in actors systems in Thuy Nguyen district. However, they have played an important role contributing to linking actors and distributing vegetable, root, and fruit in commercial system in Thuy nguyen.

III.2.2.4 Retailers

System of retailers is very important in delivering products to consumers. Besides, they also satisfy demand of consumers about quantity, quality and type of products. In other words, they receive information of consumer's demand and satisfy that demand. Because of the specific characteristics of the selected channel, we only address the retailers in Hai phong city in which retailers divided into 2 main types:

Fix-retailers: They are retailers having large scale compared to others in retail actors systems. They have a fix site for procurement. They are highly specialized households and have many types of client: final consumers, small retailers in small markets, restaurants, and hotels ...

Retailers with a canvas: They haven't got a site for operating so that they used some pieces of nylon and some sacks to arrange and cover products to prevent rain at the free places where is their regular sites in the whole day. Their characteristics are shown in the table below:

Table 22: Characteristics of retailers

Indicator	Actors	Unit	Fix-retailer	Retailers with a canvas
Number of year in business		year	11.5	5.5
Time operating in year		Month	12	11
Quantity of product sold		Kg/ngµy	110	45
Number of product type/day		kind	10-15	7- 8
Number of output-partners/day		person	60 -70	40-50
Capital		VND1000/day	350-400	150 - 200
Profit/day		VND1000	40-50	25

Source: Surveyed by VASI, 2005

Advantage and disadvantage of the retailers

Advantage:

- Infrastructure for daily trading has been upgraded (market, planning sites for procurement...)'
- Stable input

Disadvantage:

- That number of actors participating has been increased; it is difficult in products selling.
- Lack of knowledge in preservation, thus losses is high.
- Expanding business scale is out of their ability due to the limitation of sites in the market of the city.
- Profit coming from vegetable is not high.
- Limited in capital.
- Fee for business has increased (tax, sanitary fee, sites hiring...)

III.2.2.5 Analyzing value chain value

During calculation, we have focused on the channels originating from producers in Thuy Nguyen through intermediaries coming to consumers of Hai Phong city. The channels selected are:

Channel 1: Farmers -> Collectors -> Wholesalers -> Retailers -> Consumers

Channel 2: Farmers -> -> Wholesalers -> Retailers -> Consumers

Channel 3: Farmers -> -> Retailers -> Consumers

The price studied is the average during the survey, and is calculated based on average expenditure of actors per 1 kg of vegetable, root, fruit. This studying is a basic for evaluating the change of price in market and distributing profit among actors.

Table 23: Pricing through actors for a type of vegetable (Unit: VND/kg)

	Channel 1	Channel 2	Channel 3
Farmers			
Selling price	2500	2550	2600
Collectors			
Buying price	2500	-	-
Other Costs	142	-	-
Production price	2642	-	-
Selling price	2700	-	-
Profit	58	-	-
Wholesalers			
Buying price	2700	2550	-
Other costs	68	116	-
Production price	2768	2666	-
Selling price	2850	2850	-
Profit	82	184	-
Retailers			
Buying price	2850	2700	2600
Other costs	175	175	175
Production price	3025	2875	2775
Selling price	3200	3250	3250
Profit	175	375	475

Source: Data surveyed by VASI, 2005

III.2.3 Consumers

They are the final actors determining the existing of products. Because studying consumers is very difficult and takes time, we have not focused on their strategies or characteristics but preliminarily evaluating through opinions of retailers and collectors. Those opinions permits to evaluate requirement of market demand then suggest for satisfying these demands to production areas.

Currently, Hai Phong city has consisted of many types of consumer according to education, revenue, profession, position... Generally, there are some types below:

- High-ranking consumers mainly include government officials, small traders having stable income and are rather interested in quality and type of product than its price. Thus, when buying or choosing product, they always require about product quality.
- Common consumers are generally labor class or workers, students requiring not very strictly as the consumers above but are rather interested in price than quality and type of product. They frequently use common vegetable; the high-ranking ones are rarely used.

Table 24: Quality requirement of some kinds of vegetable

#	Variety	Norm of some vegetables
1	Sort of cabbage	- Tender leaves without flower
2	Tomato	- Strain peel, juicy, pink-red - Round shape - Without segment, with stalk ...
3	Cabbage	- Tightly-scrolled leaves, medium weight (0,6 - 0,7kg/piece), cut the outer green leaves, has not yellow leaves
4	White radis	- Tender, medium weight 5-7 pieces/kg, not spongy inside
5	Carrot	- Straight, slim and long - Big root (diameter is from 2 - 4cm) - Bright-red color
6	Kohlrabi	- Tender, green, medium weight (0,3-0,5kg/piesce), free of leaves, peel seems covered by white power
7	Celery, leek	- Green, tender, fresh, has little root, long body
8	Coriander	- Green, tender, fresh, not crushed

Source: Data surveyed by VASI, 2005

According to retailers and collectors, the most interest of consumers while choosing vegetable is its origin and quality (insecticide, nitrogenous residue,...), thus for felling assured, the consumers frequently have some actors regularly supplying vegetable.

IV. Conclusion and proposal

IV.1 Conclusion

Hai Phong is an active city located on core-economic-triangle area of The North and its vegetable demand has been tended for safe, fresh, or high-ranking vegetable. This is also a market having big consumption and diverse type. It can supply vegetable not only for local demand but also for raw materials for export of agro-food processing companies inside or outside the province.

The vegetable areas of Hai Phong are divided into 2 distinct areas: The area serves for demand of the city and neighbor provinces such as An Duong, Thuy Nguyen, Kien Thuy and some communes closing the city such as An Tho and An Lao; the area for export is Tien Lang, Vinh Bao...

These products of Hai Phong are sold to two main markets: Free market and input materials for primary processing or final processing companies intended for export. Commodity channels system is mainly concentrated in some channels, which are channel for urban area, for rural area and for export.

The channel serving for internal demand of the province is normally has the important role of the collectors, especially the actively participating of farmers and delivery system. For the channel for external demand of other provinces, local wholesalers or the ones outside the

province are key actors. This channel has further distance from production area to market than does the other and more actors participating.

That channel of export is simple, through cooperatives vegetable from producers is sold to primary agro-food processing or final product processing companies. Hence, companies of primary and final product processing for export play an important role coordinating the whole channel...

There has been an orientation of producing vegetable in the area close to Hai Phong city. This orientation has brought from 60-70% of total cultivation income of households surveyed in the production areas. The efficiency of cooperation between 3 partners: farmers, cooperatives, companies has also partly indicated the strong point of this linking as well as exact way in transforming plant structure of each area of the province.

IV.2 Proposal

- Detailed planning for specific production area is necessary and issuing policies supporting farmers in the cases of changing in price of input or output.
- Supporting in mechanism establishing during implementing procurement contract between companies and farmers through cooperatives
- Establishing an appropriate variety set for specific production area of the city
- Supporting process of output selling of vegetable cultivators by establishing a channel linking farmers to supermarkets, restaurants, and other actors
- Establishing market information channel for farmers

Annex: List of surveyed stakeholders

Stakeholders	Address
Province	
Cultivation unit – Department of Agriculture and Rural Development of Hai Phong City	Kiến An District, Hải Phòng Province
Thủy Nguyên District	
DARD of the district	Núi Đèo town- Thủy Nguyên district
Thiên Hương cooperative	Thiên Hương commune
Thủy Đường cooperative	Xã Thủy Đường commune
Đào Thị Điệp	Collector to Quảng Ninh - Bắc hamlet
Nguyễn Thị Ao	Collector to Quảng Ninh- Trại hamlet
Bác Kha	Wholesaler - Quán hamlet
Nguyễn Thị Mặc	Collector-Đồng Mát hamlet -Thủy Đường -Thủy Nguyên
Lê Thị La	Collector - Trại hamlet -Thủy Đường - Thủy Nguyên
Hoàng Thị Thường	Collector -Đồng Mát hamlet -Thủy Đường-Thủy Nguyên
Nguyễn Văn Đông	Farmer - Quán hamlet – Thủy Đường – Thủy Nguyên
Cô Hường	Farmer -Đồng Mát hamlet –Thủy Đường - Thủy Nguyên
Cô Chung	Farmer - Đồng Mát hamlet -Thủy Đường - Thủy Nguyên
Cô Tảo	Farmer - Trại hamlet -Thủy Đường - Thủy Nguyên
Tiên Lãng District	
DARD of the district	Tiên Lãng town
Station of primary processing, Hai Phong agricultural materials company	Bến Khuế, Tiên Lãng
Quyết Tiến agricultural cooperative	Quyết Tiến commune
Cấp Tiến agricultural cooperative	Cấp Tiến commune
Khởi Nghĩa agricultural cooperative	Khởi Nghĩa commune
Trần Thị Bé	Farmer of Cấp Tiến commune
Cao Văn Trào	Farmer of Cấp Tiến commune
Nguyễn Văn Đức	Farmer of Cấp Tiến commune
Mr.Thã	Farmer of Khởi Nghĩa commune
Mr.Toản	Farmer of Khởi Nghĩa commune
Mrs. Thôi	Farmer of Quyết Tiến commune
Mr. Nếp	Farmer of Quyết Tiến commune
Mr. Hùng	Farmer of Quyết Tiến commune
Mrs. Mơ	Farmer of Quyết Tiến commune
Mr. Bé	Nông dân, xã Quyết Tiến