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## BASIC INFORMATION ON THE PROJECT SITES IN HANOI PERI-URBAN AREAS

Component 2 – Market Development  
Component 3C – Dissemination of Innovations  
and promotions of associations

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July 2004

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## I. INTRODUCTION

Paule Moustier, CIRAD.

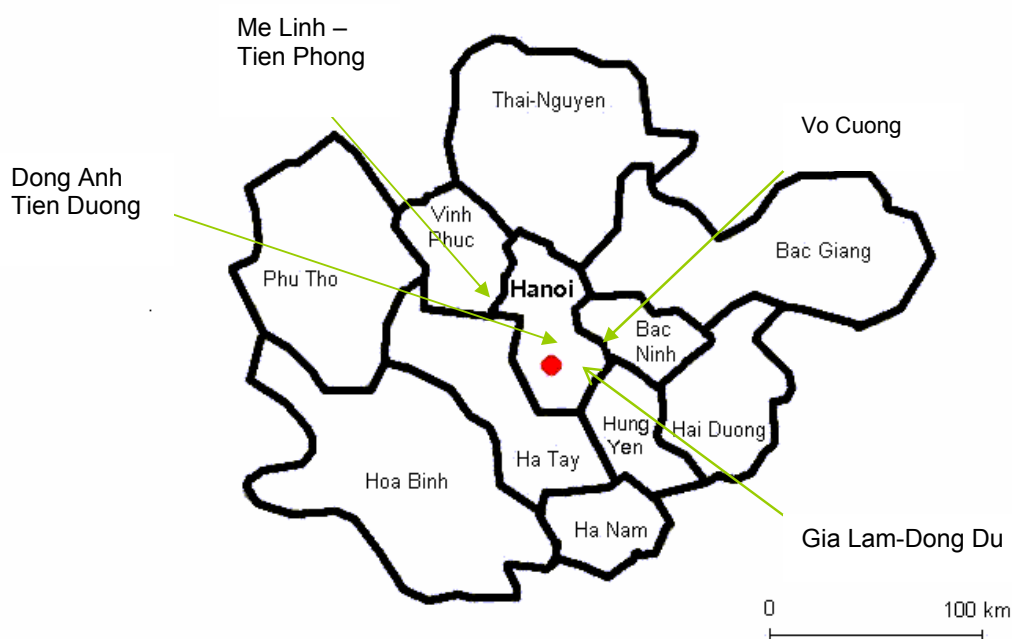
### A) Project objectives

The main objective of the peri-urban regional project SUSPER is to enhance the contribution of urban agriculture to food and income security, as well as environmental preservation. To make agriculture more profitable around Hanoi, we target the major constraint expressed by farmers, i.e. marketing of their products. For peri-urban production to better fit the market, techniques are developed to improve production in terms of regularity of supply and quality, through production of vegetables under shelter with plastic to protect the plants from heavy rain and also production under nets to protect the plants from insects. Marketing of vegetables is made easier through the dissemination of information on market supply in demand in terms of quality, quantity, species, and the support to enhanced communication and cooperation between farmers, traders and consumers.

### B) Rationale for project site selection

To make the project actions more effective, they are concentrated in four project sites (see Figure 1- Location of the project sites). Four communes have been chosen according to different criteria : (i) importance and regularity in vegetable production and Hanoi market supply (see data on product origin below); (ii) willingness of authorities to develop vegetable production ; (iii) location in the peri-urban area, less than 30 km from city centre; (iv) possible off-season production thanks to location in non-flooded areas. According to these criteria, 4 communes have been selected in 4 districts, 2 in Hanoi province and 2 in surrounding provinces : Dong Du (Gia Lam district ; Hanoi Province) ; Dong Anh (Tien Duong district ; Hanoi Province) ; Tien Phong (Me Linh district ; Vinh Phuc Province) ; Vo Cuong (Bac Ninh Province).

Figure 1- Location of the project sites



The following information results from SUSPER surveys on the origin of vegetables in Hanoi markets (see Table 1, Table 2, Table 3, Table 4). Gia Lam was the most important local area supplying cabbage in 2002 (40% in March, 46% in November), in May 2003 (14%) and in November 2003 (54% of supply)<sup>1</sup>. It is also the first supplier of choysum in March and November 2002 (around 40% of supply), and an important provider of water spinach (86% in August 2003).

**Table 1- Origin of tomato in Hanoi markets**

	2002				2003						
	March	June	Aug	Nov	Jan	May	June	July	Aug	Sep	Nov
Hanoi											
Dong Anh	5%	2%		8%	13%	4%					10%
Thanh Tri	6%				18%						7%
Gia Lam				2%							
Vinh Phuc											
Me Linh	32%	9%			21.5%	37%	11%				33%
Ha Tay											
Hoai Duc	3.5%			11%	2%	24%					4%
Thuong Tin	24.5%			16%	15%	26%	1%				20%
Ha Dong	3%										
Phuc Tho	2%				7.5%						3%
Thanh Oai	4%										
Chuong My				1%							
Son Tay				1%							1%
Dan Phuong					4%						1%
Quoc Oai					7%	2%					
Hung Yen											
Van Giang	11%			13%	7%	2%					16%
Yen My					6%						
Bac Ninh											
Bac Ninh	10%			11%		5%					
Hoa Dinh				3%							
Bac Ninh				5%							2%
Bac Giang											
Viet Yen				2%							
Hiep Hoa											
Son La			6%	14%			4%	20%	13%	2%	3%
Da Lat		39%	14%				32%		6%	1%	
China		50%	80%	3%			52%	80%	82%	97%	

Source : SUSPER market surveys

Among the peri-urban districts, Me Linh is the first local provider of tomato in March 2002 (32%), in June 2002 (9%) (the other one is Dong Anh with 1% of supply), in January (21%), May (37%), June (11%), and November 2003 (33%). It is also important in the supply of choysum: the first supplier in June 2002 (36%), August 2002 (32%), May 2003 (49%) and November 2003 (29%).

Dong Anh is the second most important provider of tomato, cabbage and choysum in Hanoi Province. It is among the two local districts to supply tomato in June 2002 (together with Me Linh). It is the first provider of choysum in Hanoi Province in August 2002, May and August 2003.

<sup>1</sup> We did not calculate the average figure along the 11 months of surveys in 2002 and 2003 because the total quantity available in the market is different from one month to the other.

Table 2 – Origin of cabbage in Hanoi markets

	2002				2003						
	March	June	Aug	Nov	Jan	May	June	July	Aug	Sep	Nov
Hanoi											
Dong Anh	11%			2%	11.5%						
Thanh Tri				2%							
Gia Lam	40%			46%	16%	14%					54%
Tu Liem										1%	
Vinh Phuc											
Me Linh				3%							
Ha Tay											
Hoai Duc	6.5%			31%	25%				6%	12%	24%
Thuong Tin	4%			4%					6%	6%	1%
Thanh Oai	2.5%				2%						
Chuong My					1.5%						
Dan Phuong					5%						
Quoc Oai	2%			2%	2%	1%					
Hung Yen											
Van Giang	2%			2%	10%						13%
Yen My	28%				25%						5%
Khoi Chau	5%										
Hai Duong											
Gia Loc				4%						22%	3%
Hai Duong				4%							
Ha Nam											
Duy Tien					2%						
Son La						8%	9%				
Da Lat		38%				1%	3%				
China		62%	100%			76%	88%	100%	88%	58%	

Source : SUSPER market surveys

Table 3- Origin of choysum in Hanoi markets

	2002				2003			
	March	June	Aug	Nov	Jan	May	Aug	Nov
Hanoi								
Dong Anh	3%	7%	15%	6%	12.5%	15.5%	17%	6%
Gia Lam	38.5%			38.5%	19%		4%	19%
Tu Liem	1%	11%	10%	8%	11%	3%	11%	6.5%
Vinh Phuc								
Me Linh	17%	36%	32.5%	22%	13%	49%	15%	29%
Ha Tay							4%	
Hoai Duc				1.5%				2.5%
Thuong Tin	23.5%	10%	2%	1%		3%		2.5%
Thanh Oai								2%
Dan Phuong			1%					
Hung Yen								
Van Giang		15%	13%	23%	13.5%	2.5%	13%	28.5%
Yen My	10%	21%	24.5%		30%	20%	36%	4%
Khoi Chau			2%			6%		
Hai Duong								
Gia Loc	6%							

Source : SUSPER market surveys

Table 4- Origin of rau muong in Hanoi markets

	2002				2003						
	March	June	Aug	Nov	Jan	May	June	July	Aug	Sep	Nov
Hanoi											
Thanh Tri	96%	79%	80%	65%		81%					38%
Gia Lam	4%		10%	27%		8%			86%		20%
Tu Liem		10%	10%			9%			4%		42%
Cau Giay				8%		2%			10%		
Ha Tay											
Dan Phuong		6%									
Thach That		5%									

Source : SUSPER market surveys

According to CVTGeo/REGARDS atlas, in 1998, Dong Anh represented the most important producer of vegetables of Hanoi Province in area and quantity (30%), followed by Gia Lam (20% in area, 15% in quantity), Thanh Tri (18% of areas, 27% of quantities), and Soc Son (15% in area, 10% in quantity). From 1990 to 1998, Dong Anh, Gia Lam and Thanh Tri have continuously developed their production of vegetables (Dong Anh has tripled production between 1990 and 1998), while the production of Tu Liem and Soc Son has declined<sup>2</sup>.

Thanh Tri is especially important in the supply of water spinach (more than 80% of supply in March, June and August 2002 and May 2003). It was not selected in Susper project because it is the focus of another project on peri-urban agriculture (coordinated by the Dutch research center ALTERRA), which showed how production in this district is jeopardized by problems of urban encroaching and pollution by wastewater<sup>3</sup>.

Bac Ninh (Vo Cuong district) is important in the supply of tomato in November. It is also an area where farmers have shown constant interest in training developed by RIFAV on vegetable production.

As regards the sustainability of the project sites as regards urban development, there may be threats as regards Gia Lam and Dong Anh : according to the masterplan prepared in 1998, Hanoi extension will cover an area of 16 682 hectares located in the north of the city including Dong Anh, Gia Lam, Thang Long and Van Tri<sup>4</sup>. But the extension will provide for 24% of green areas. And in the plan of Hanoi department of agriculture until 2010<sup>5</sup>, there will be a decrease in agricultural areas of 7390 hectares between 2000 and 2010, but this will mostly relate to the rice area, while the vegetable area would actually increase thanks to conversion of rice into other crops (including vegetables, flowers, fruits, fish). Vegetable production is still assumed to continue in Dong Anh, Gia Lam; Soc Son and Thanh Tri according to the plan of Hanoi Department of agriculture.

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<sup>2</sup> Georges. Rossi and Pham Van Cu, eds. Atlas infographique de la province de Hanoi. Hanoi, CVTGeo, 2002, 379 p. Data on vegetable production is difficult to get for the provinces surrounding Hanoi.

<sup>3</sup> L.M. van den Berg, M.S. van Wijk, Pham Van Hoi. The transformation of agriculture and rural life downstream of Hanoi. In: Environment and Urbanization, vol. 15, n°1, 2003.

<sup>4</sup> Georges Rossi et Pham Van Cu. 2002. Atlas infographique de la province de Hanoi. Bordeaux, UMR Regards, 379 p.

<sup>5</sup> Mai Thi Phuong Anh. 2002. Développement de l'agriculture péri-urbaine de Hanoi : résultats, difficultés et orientations pour 2010. In : Fanny Quertamp, Hubert de Bon et Nicolas Baudouin (eds.). Le développement périurbain à Hanoi : nouveaux enjeux. Les cahiers de la coopération française au Vietnam. Hanoi, Ambassade de France, 138 p.



### **C) Visits to the project sites**

In March and April 2003, a group of SUSPER project agents visited the four sites with the following objectives:

- 1) Present the project objectives and intended actions
- 2) Gain knowledge on the basic situation of the commune in terms of vegetable production and marketing
- 3) Gain knowledge on the commune major plans and constraints to develop its economy in general, agriculture, and vegetable production and marketing.
- 4) Discuss on the interest of commune authorities and farmers to participate in the project, and present the ideal criteria for the choice of farmers' groups involved: identified constraints in relation to project possible solutions; availability of labour for off-season production; interest in selling quality products for safe leafy vegetable production; involvement of the heads of groups in collective farmers' actions, e.g., extension, marketing, access to inputs,...; readiness to invest time and resources in the proposed innovations: for the shelters, the project would supply the plastic, and the farmers should supply the structure and inputs.

In each sites, a meeting was organised with the commune leaders, extension agents of the district and commune department of agriculture, and some farmers (3 to 5), to discuss these issues. The meeting was followed by visits on the field. From the project sites the following persons were involved in the visit according to the division of tasks between the different components and sites:

For Component 2, Mrs Mai Thi Phuong Anh (Hanoi Department of Agriculture) in Dong Anh and Vo Cuong; Mr Ho Thanh Son (VASI) in Me Linh; Mr Le Duc Thinh (RIFAV) and Mrs Nguyen Thi Tan Loc (RIFAV) in Dong Du. I joined the visits in Dong Anh, Vo Cuong and Me Linh.

For Component 3, Mrs Nguyen Thi Hien (off-season production) and Mr Nguyen Van Trung (safe vegetables); Mrs To Thi Tu Ha (component 1) and Mrs Nham (specialist of extension and farmers' organisation in VASI) joined the visit in Bac Ninh.

The present document compiles the reports of these visits. They are focused on the situation of vegetable production and marketing in the four sites<sup>6</sup>.

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<sup>6</sup> In Me Linh, we visited two communes, Dai Thinh and Tien Phong, before the final selection of Tien Phong.

## II. VEGETABLE PRODUCTION AND MARKETING IN TIEN DUONG COMMUNE (DONG ANH DISTRICT, HANOI PROVINCE)

Mai Thi Phuong Anh, HDARD

### A) General situation of the commune

Dong Anh is one of five peri-urban districts in Hanoi City. It is located in the west of Hanoi Center. It covers a natural area of 18,230 ha with 9,940 ha of agricultural land (55% of natural area), in which 2562 ha are grown with vegetables, (26% of agricultural land) (source: statistics of the district, 2002). The population of the district was about 266,750 persons in late 2001 (source: Hanoi statistical office, 2001). There is one district town and 23 communes in this district; Tien Duong is one of them.

Tien Duong commune is located in the center of the district, about 30 kilometers from Hanoi centre. It is divided into 6 villages that make up 6 cooperatives (Le Phap, Luong No, Co Duong, Tien Kha, Trung Oai and Tuan Le), Le Phap is one of the cooperatives and is chosen to be a project site (see Table 5). This village has few activities besides agriculture.

Table 5- Some characteristics of Le Phap

	Unit	Amount
Natural land	ha	93.5
Agricultural land	ha	81.7
Households	No	422.0
Inhabitants	No	1,783.0
In which - Female	No	924.0
- Male	No	859.0
Active population	No	821.0
Agricultural population	No	764.0
In which - Female	%	55.4
- Male	%	44.6

### B) Vegetable production

Traditionally, Le Phap is a vegetable production area, especially for tomato (see Table 6). Because of the risks in the production and outlets (serious pests and diseases, unstable prices), farmers changed their crop structure from 1 rice-two vegetables to produce two rice crops and one vegetable per year (this happened after 1988). Recently, in the beginning of 2003, after a debate between the cooperative members during a special meeting, they decided to convert back rice field to develop vegetables on about 30% of agricultural land in the cooperative (25 ha out of 82 ha). But up to now, they haven't done it because of the marketing constraints.

The cooperative has abundant labor, so developing off-season vegetables, which use a lot of labor, is adapted to its situation. But the farmers face serious problems with Bacterial wilt disease and viruses in off-season tomato production.

Three interviewed farmers say they work on around 240 m<sup>2</sup> per household. They grow a lot of leafy vegetables besides temperate vegetables and are interested both in shelters for tomato and in nets for leafy vegetables.

Table 6-The production of vegetables in 2003

Parameter	Unit	Le Phap	
		Ordinary vegetables	Safe Vegetables (only produced in wet season)
<b>Yearly production</b>			
Area	ha	17.0	0.30
Yield	Ton/ha	27.0	21.60
Production *	Tons	459.0	6.48
<b>Production in wet hot season (from April to August)</b>			
Area	ha	8.0	0.30
Yield	Ton/ha	24.3	21.60
Production <sup>88</sup>	Tons	194.4	6.48

\*Kind of vegetable (most popular)

- Normal vegetable: Kohlrabi; Snapbean, Common cabbage, Field cabbage, Tomato, cauliflower, leafy cabbage.
- Safe Vegetable: Tomato, leafy cabbage, kangkong, spring onion, snapbean, and cucumber.

### C) Vegetable marketing

The marketing outlets are indicated below:

- They bring some of their vegetables to Van Tri night market (Van Noi commune), 3 kilometers far from Le Phap.
- Farmers sell some of their vegetable products themselves in retail markets in Dong Anh town.
- Some collectors from other villages come to buy products and bring them to Hanoi markets.

Due to the lack of collectors in the village, one farmer intends to become collector.

### D) Input supply

There is no input supplier in the commune. Farmers get their seed from RIFAV or shops in Hanoi, and get seedlings from some specialized farmers in Van Noi.

### E) Difficulties and recommendations

The farmers complain about price instability; sometimes products are in excess, sometimes they are in deficit.

They are interested in developing off-season production and safe vegetable production. They are ready to pay for the structure and half of the shelter (which represents an estimated total of 2 M VND/150 m<sup>2</sup>).

### III. VEGETABLE PRODUCTION AND MARKETING IN DONG DU COMMUNE (GIA LAM DISTRICT, HANOI PROVINCE)<sup>7</sup>

Nguyen Thi Tan Loc, RIFAV

#### A. General situation of the commune

Dong Du commune is located along the Red River in Gia Lam district - Hanoi. It's 2 km far from Hanoi by river and 10 km by road transport. The natural land area of this commune is 353 ha of which 215 ha is agricultural land (61%). The agricultural area includes two different parts: field land (land inside dike) and land outside dike. The land outside dike represents 43% of total agricultural area, this characteristic generates floods which is a problem for the inhabitants during rainy season. The region has favourable conditions for vegetable production especially for winter vegetable production.

The total number of households is 956 with 3870 inhabitants but the demographic growth in this commune is 1.5% per year so the land area per capita tends to reduce. Until 2002, the average of agricultural area per capita was 757 m<sup>2</sup>. Nearly 90% of its inhabitants live on agriculture.

#### B. General situation of agriculture

The agricultural production of the commune mainly consists of rice and all kinds of dry crops. Recently some land has been used for guava tree "tu mua – four seasons" and star fruit. In 2002, we observed the transformation of 5 ha of rice field to winter dry crops. The winter dry crops are mostly vegetables because of the proximity to Hanoi market, they offer higher profit than maize or soya bean. The different uses of land are distributed as follows: land reserved for winter dry crops: 33.2%; association of rice-winter dry crops: 11.62%; land reserved for rice: 26.51% and land with garden, pond, lake: 28.85%. The vegetable production is mostly concentrated in autumn and winter seasons after the floods (at the end of the raining season), from November to July. The crops represent 51.5% of agricultural incomes while the livestock makes up 48.5%. The livestock products are mainly pig, poultry, and beef. It's possible to conclude that Dong Du commune diversifies its agricultural activities.

#### C. Vegetable production

##### 1. Nature of crops

Dong Du is a commune having a long tradition of cultivating dry crops, most farmers are used to growing vegetables intensively. The vegetable species are diversified and the commune has very famous vegetables such as "cai be" (fermented cabbage), and aromatic herbs. Vegetable producers evaluate the total economic value of vegetables to VND 135 millions/ha/year on average, while two cycles of rice only give them VND 17 millions/ha/year. The vegetables produced all over the year are aromatic herbs; temperate vegetables are produced in a more seasonal way (cabbage, tomato, bean, cauliflower, baby corn and baby cucumber).

<sup>7</sup> The situation of safe vegetable production and marketing in Dong Du is detailed in a report by Nguyen Thi Tan Loc, published soon in the project report series.

If we distinguish products according to season, we observe that there are a lot of products grown in winter (1 to 7 kinds of vegetables according to the households), then in the spring (2-6 vegetables species) and a few in autumn (1-5 species mainly aromatic herbs). Farmers having 4-5 vegetable species produce other vegetables than aromatic herbs such as tomatoes (off-season and precocious tomatoes), green cabbage, kangkong, gourd, basilla, cauliflower, precocious cabbage. However, the number of these producers isn't important and the quantity of sold products isn't high. In the summer, there are few species of vegetables besides aromatic herbs but the number of leafy vegetables is high (e.g., cabbage, water morning glory, amaranth), as well as fruit vegetables, for example gourd and wax gourd.

## **2. Involvement in projects**

Dong Du is one of the 33 communes involved in the safe vegetable production's Programme of Hanoi city since 1996. The centre of agricultural extension has organised training courses on protocols for safe vegetable production, the trainees have applied what they have learned from the training and their neighbors also apply it by imitation. According to the evaluations of safe vegetable production's program after 5 years of implementation, Dong Du commune is one of 25 communes that have applied this program with success.

The products dealt with in this program are not only the introduction to the market of some fresh vegetables such as cabbage, green cabbage or kangkong, but also of some processed products like canned cucumber or "baby" maize. The safe vegetable program contributes to the transformation of cropping systems. During the period 1998-2000, the vegetable area rose by 10 ha, thanks to the land transfer from rice to vegetables, the total vegetable area of this commune now is 30 ha, and the yearly income is 135 millions vnd /ha. In parallel with the economic results obtained, the environment is clearly less polluted thanks to safe vegetable production, and the safety of products is also improved.

From 2000 up to now, Dong Du commune also takes part in the project of farmers' training on "IPM" for vegetable production of ADDA project in collaboration with the Farmers' Association. In 2002 and 2003, RIFAV has provided some technical training on off-season production models. In 2002, JACA (Japanese Organisation) helped the farmers to set up several shops of high quality products (stall 35, Hang Da market – Hanoi), where many local products were sold there including vegetables, fruits (mainly), and a little bit of rice and eggs.

## **D. Vegetable marketing**

The aromatic herbs are mainly sold through collectors who come to buy vegetables from producers at the end of the day. Normally, producers plan to harvest everyday. If one day they can't harvest vegetables, they have to inform the collectors one day earlier so that those collectors can look for other suppliers. Some families sell vegetable 3 to 5 times per week. All commitments between them are done verbally.

For seasonal vegetables like cabbage, tomato, yard long bean, most producers directly sell products in the markets, only a small part of vegetables is sold through collectors at home. Several producers aren't able to sell their vegetables in distant markets, so they sell their vegetables in neighboring markets inside the commune such as Bun market (Da Ton), Moi market (Thach Ban) or Thanh Tri market. Some families having labour force and vehicles sell their vegetables on markets in the centre of the city like Dong Xuan, Bac Qua,

Mo markets and Le Quy Don market. The choice of selling market depends on producers' previous relationships with traders. The number of times going to market depends on the quantity of products. Normally, in the peak season depending on quantity of production, farmers go to the market 3 to 4 times per week. But for off-season production, farmers do not need to go to sell, collectors come to buy at the farm gate.

In 2002, the cooperative had one shop in Hang Da market in Hanoi to sell vegetables and fruits. As the running fee of this shop was too high, the co-operative had to move the shop to Gia Lam market. The moving of the shop has decreased the quantity of marketed products because the new shop is not very accessible to Hanoi city customers, furthermore the Gia Lam customers haven't had yet the habit to buy products in this shop which is still new to them.

The cooperative signs a contract with some collective restaurants including the restaurant of Thach Ban enterprise. The demand for vegetables of this enterprise is relatively stable, about 80 kg daily. Another outlet is the restaurant of factory 22 (50 kgs/day). The vegetables are delivered regularly in the morning.

### **E) Difficulties and recommendations**

The producers of aromatic herbs have regular buyers who are collectors in the commune, they are not worried about the outlets of their products. Furthermore they also have international outlets (German, Russian, or Japanese markets). For the other products, the producers express the following difficulties:

- Lack of market information (expressed by 4/19 interviewed persons).
- Lack of contacts with new partners for the marketing of products: 7/19 find that it's difficult to have opportunities to meet new customers, they just see collectors in the commune or their familiar sellers in the market.
- Lack of customers' trust in the products' quality: vegetable producers don't know what to do in order for customers to trust the quality of the vegetables produced under the safe vegetable program regulations.
- Seasonality of production: this factor influences the price and the stability of outlets, and vegetable producers worry about it, especially the larger scale producers involved in the production of temperate vegetables such as: cabbage, beans, tomato.

## IV. VEGETABLE PRODUCTION AND MARKETING IN VO CUONG COMMUNE (BAC NINH TOWN, BAC NINH PROVINCE)

Mai Thi Phuong Anh, HDARD

### A) Situation of the commune

Bac Ninh town is located in the north of Hanoi City next to the national road N°1. It is about 30km away from Hanoi. In Bac Ninh town there are 9 communes with 20,692 inhabitants. The natural land totalizes 2,664.47 ha, in which 1,418.48ha of agricultural land (53% of agricultural land) including 531.7ha of vegetable production. Thus, vegetable area occupies 37% of agricultural land. Vo Cuong is one of nine communes of Bac Ninh with five villages that represent five agricultural cooperatives (1 cooperative/village) namely Hoa Dinh, Kha Le, Bo Son, Xuan O a and Xuan O b. Hoa Dinh cooperative is chosen as a pilot site. Hoa Dinh is located besides the road N° 1 which is very convenient for product transportation and because it is located next to the town, the farmers can both work in agriculture as well as in trading.

Table 7– Basic characteristics of Hoa Dinh

	Unit	Amount
Natural land	Ha	160.0
Agricultural land	Ha	80.0
Households	No	750.0
Inhabitants	No	3,500.0
In which - Female	No	1,850.0
- Male	No	1,650.0
Active population	No	1,600.0
Agricultural population	No	1,400.0
In which - Female	%	52.0
- Male	%	48.0

### B) Situation of vegetable production

The commune has a traditional involvement in vegetable production, especially off-season tomato production (see Table 2). The farmers have experience in seed production and agricultural processing. They are willing to apply new high technologies on vegetable production (“we are pioneer farmers, and we like what is difficult”, said one interviewed farmer). The farmers are hard-working and have land for vegetable production.

Table 8– Vegetable production in Hoa Dinh

	Unit	Amount
<b>Whole year</b>		
Area	ha	36.0
Yield	Ton/ha	38.9
Production*	Tons	1400.0
<b>Wet hot season (from April to August)</b>		
Area	ha	20.0
Yield	Ton/ha	10.0
Production	Tons	200.0

\*Kind of vegetables (most popular) (in Hoa Dinh): tomato, cabbage, leafy cabbages, carrot, kohlrabi, cauliflower, celery, onion, different kinds of beans, cucurbits, cucumber, bitter gourd. Tomato, leafy cabbages and celery are grown off-season.

### **C) Vegetable marketing**

The commune has about 10 vegetable collectors. The people in Hoa Dinh not only have skill to sell their agricultural products to Bac Ninh town and Hanoi City, but also they have traditional markets in the south, in relation to their trading activities.

### **D) Constraints and recommendations**

The interviewed village authorities and farmers express the following constraints:

- Land is degraded, vegetables are grown on the land time after time leading to strong development of pest and disease.
- There is no reliable outlets for their products.

The following support is asked for:

- There is a request to help the farmers to produce high quality and high yield products and also to find the market.
- The most urgent need is to produce off-season tomato for the market during June to July.
- There is a need for exploring new markets, especially for safe vegetables.

The farmers are willing to take some of the risk of Susper experiments. A final agreement was reached on 50% of investment by farmers, and 50% by Susper.



## **V. VEGETABLE PRODUCTION AND MARKETING IN TIEN PHONG COMMUNE (ME LINH DISTRICT, VINH PHUC PROVINCE)**

Le Nhu Thinh (RIFAV) and Ho Thanh Son (VASI)

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### **A. General information on the commune**

Vinh Phuc is a province in the Red River Delta, located 60 km far from Hanoi capital to the West. Its natural area is 137100 ha, of which 66800 ha is agricultural land (49% of natural land). The number of its inhabitants is 1.105.900 (of which 80% are farmers). Nowadays, the province has 7000 ha of fruit trees; 7711.4 ha of vegetables with different species and about 1000 ha. of flower cultures (*source: data of Vinh Phuc province in 2002*).

Me Linh district is located in the West of Vinh Phuc province which is 20 or 25 km away from Hanoi. In 2001, this district had 2832 ha. of vegetables that represented 36.72% of the total provincial area, with a yield of 17.83 T/ha. In comparison with the average yield of vegetables in the province (14.96 T/ha), the vegetable yield of Me Linh is clearly higher. This result is obtained thanks to the experience and high knowledge of vegetable producers in Me Linh.

### **B. Vegetable production in Tien Phong**

Me Linh district has 2 towns and 22 communes producing vegetables. Tien Phong commune has the most important vegetable area with 624.5 ha, representing 22.05% of the district total vegetable area. It has 633 ha of cultivated land so the average area per inhabitant is about 400 m<sup>2</sup>. This district is located all along the national road N°2. There are 8 cooperatives of vegetable production in Tien Phong commune. The main vegetables here are tomato, cabbage, kohlrabi, cauliflower, gourd, onion, with variations according to each period of the year.

- From January to June: tomato, gourd, onion, and cucumber
- From July to December: kangkong, onion, kohlrabi, cabbage, cauliflower

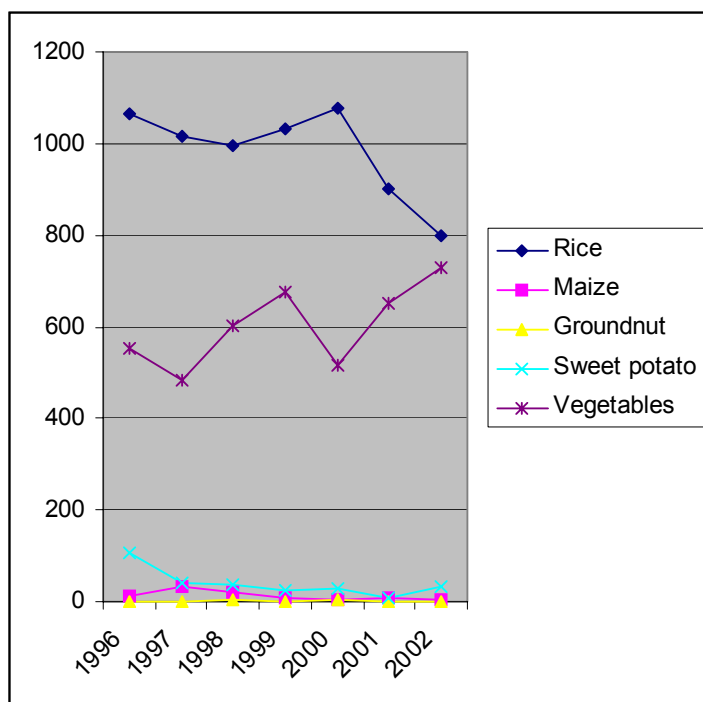
For the rice area, the main association formula is: rice - rice – winter vegetables. During summer (from January to June), the climatic conditions aren't favourable to temperate vegetable production, particularly for tomato production. According to local authorities the tomato area of farmers is around 100 ha. In 2002, the main varieties of tomatoes are American and French varieties with an average yield of about 1500 kg per sao (about 13,9T/ha), and selling price of around 2500 – 3000 dong / kg, up to 4000 dong / kg. Thus the obtained profit may be 3.7-4 millions VND per sao (360 m<sup>2</sup>). Besides, Tien Phong commune also has 43 ha of land reserved for flower production (mainly rose).

Over the years, there is a decrease in the area of rice, maize and soya-bean in favour of vegetables and flowers. We were not given data on the trends in flower areas, but were told that area for flower is resulted from conversion of land previously cultivated with soya-bean and groundnut, which are now nearly absent.

**Table 9 – Trends in crop areas (ha) in Tien Phong**

	1996	1997	1998	1999	2000	2001	2002
Rice	1066	1016	996	1031	1078	900	800
Maize	13	34	21	8	3	8	3
Groundnut	1	1	5	0	5	0	0
Sweet potato	105	39	35	26	27	10	33
Vegetables	552	484	602	675	517	653	730

Source: statistics of Tien Phong commune

**Figure 2 - Trends in crop areas (ha) in Tien Phong**

### C. Vegetable marketing in Tien Phong

The main channels for vegetable marketing are as follows:

Producers → wholesalers and retailers (the wholesalers operate on night markets of Hanoi)

Producers → Collectors → wholesalers and retailers (the wholesalers operate on night markets of Hanoi)

Producers → Collectors → wholesalers reselling in provinces in the Centre of Vietnam and in Ho Chi Minh city.

The selling activities by farmers mostly take place in the night market of the commune. Producers don't go to Hanoi market because for a new trader/ now regular seller, the price isn't as profitable as in communal night market, and furthermore they can't always able to find customers there.

According to local authorities, there are about 50 persons in the commune who are specialised in collecting vegetable directly from producers and supplied by wholesalers for distant markets like provinces in the centre of Vietnam and Ho Chi Minh city (main products: onion and tomato).

The agricultural production in general and the vegetable production in particular in Tien Phong commune has to face many difficulties fortunately the conditions are favourable for vegetable production in the locality.

#### **D. Advantages, difficulties and recommendations**

There are many favorable conditions for vegetable production in Tien Phong:

The land conditions are favorable to the development of different vegetables species during the year. The vegetable area is relatively concentrated, this creates favourable conditions to increase plot size. Transport and hydraulic conditions are good; irrigation and draining activities are well managed, these conditions favor both dry crops and autumn vegetables.

The inhabitants have a long tradition in crop production. They have not only experience in vegetable production but also in research of outlets for their products.

The commune is located next to the regions where the inhabitants have a high level of knowledge in vegetable production like Van Noi, Van Tri, Nam Hong co-operatives (Dong Anh district). The producers of this commune have favorable conditions to access to technical innovations and to obtain experience in safe vegetable production and marketing.

The vegetable region of Tien Phong is only 15 km far from night markets like Dich Vong or Long Bien. The actors can have regular access to update market information.

The vegetable region of Tien Phong is 12 km far from Noi Bai international airport, this may enable the transport and marketing of vegetables to distant markets by airway.

Their main expressed difficulties relate to the irregularity of production and outlets. Hence they have a high demand in terms of access and application of technical and scientific progress in agricultural production particularly in off-season vegetable production to increase the added value of land use.

## VI. VEGETABLE PRODUCTION AND MARKETING IN DAI THINH COMMUNE (ME LINH DISTRICT, VINH PHUC PROVINCE)

Ho Thanh Son, VASI

### A) Natural conditions

#### 1. Geographical location

Dai Thinh commune is located in the East of Me Linh district, about 5 km far from the district centre. The commune is surrounded by:

- Thanh Lam commune in the North
- Me Linh commune in the South
- Tien Phong - Quang Minh communes in the East
- Van Khe - Thach Da - Tam Dong communes in the West.

The commune is located along two sides of national road 23 B. At the end of the commune, there is national road toward Hanoi, and in the beginning of the commune it is national road 2 towards Viet Tri - Phu Tho. Thanks to this geographic position, about 15 km away from Hanoi night markets, the commune has favourable conditions for the exchange of products and for socio-economic development.

#### 2. Land

We can distinguish two main kinds of land in the commune:

- Eroded sandy soil along two sides of national road 23 B, this kind of soil represents 3/5 of natural land area, it is sandy and relatively clayey soil.
- Alluvium soil gets alluvions on a temporary basis, it is quite sandy, a little acid, the land is in relatively high position. It represents 2/5 of natural land area.

Irrigated rice and dry crops are adapted to these land conditions.

### B) Socio-economic conditions

#### 1. Demography and labour force

According to the commune statistical data, Dai Thinh had 2058 households and 10.286 inhabitants in December 31,2001. The commune has 4918 workers, this number represents 47.81% of its total number of inhabitants; among the total number of workers, 94,69% work for the agricultural sector (see Table 10).

**Table 10-Population and labour in Dai Thinh**

	Units	1997	1998	1999	2000	2001
Total number of households	Household	1844	1960	1897	1897	2058
Total number of persons	Person	9215	9303	9307	9418	10.286
Total number of workers	Person	3879	3929	4056	4381	4918
- Agricultural workers	Person	3789	3833	3940	4231	4657
- Non-agricultural workers	Person	90	96	116	150	261

(Source: Statistical data of Dai Thinh commune)

In the whole commune, about 80% of inhabitants practice agriculture and 30% have non-agricultural activities.

## 2. Economic situation

In 2002, according to communal statistics, the value of the entire economic sector was 39.890 billion vnd made up as follows:

- The crop revenue was 23 965 billion vnd, a rise of 1.5 billion vnd compared to 2001
- The livestock revenue was 8481 billion vnd, a growth of 1413 billion vnd compared to 2001.
- The revenue of non-agricultural activities was 6932 billion vnd, a rise of 1596 billion vnd compared to 2001.

The average revenue per capita was 4.137.000 vnd / year in 2002.

## D. Use of agricultural land

The agricultural land of the commune is 619.93 ha of which 580.27 ha are for annual crops, this area represents 93.27% of agricultural land. On the annual crops land, the 2 rice-cycle land represents the main part with 365.64 ha, the 2 rice cycle and one dry crop land is 35.30 ha, the one rice cycle land represents 154.85 ha, land specialised on dry crops, 24.58 ha. Family gardens represent 31.89 ha. The irrigated agricultural land covers 4.77 ha. Fish farming area isn't developed even if there is land available to practice pisciculture, mainly for lack of training.

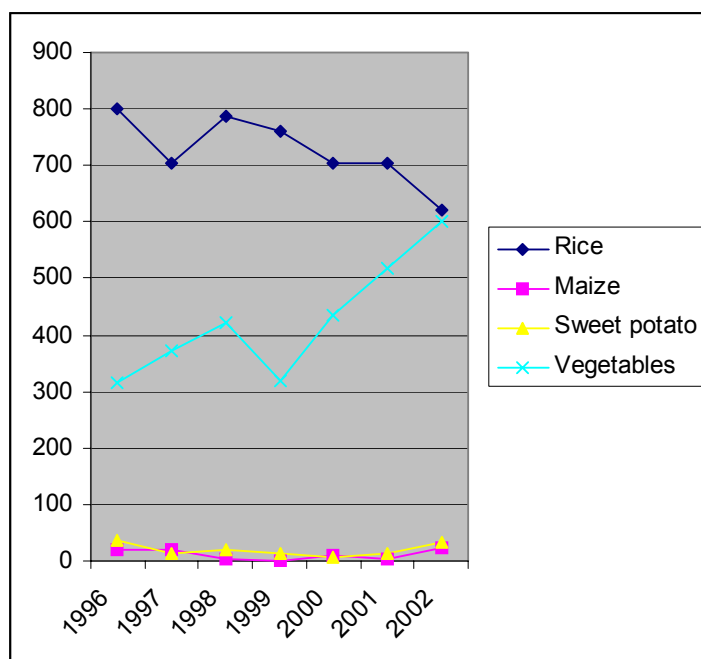
In general, agricultural area decreases day by day because of demographic pressure and land use for other activities. However, there is still potential to generate his/ her value per unit of agricultural land, by intensifying and diversifying crops particularly commercial ones with high economic value, and then to improve revenue sources for inhabitants. Production of subsistence crops (rice, maize, sweet potato) tends to decrease especially over the last years; land area of soya bean and groundnut has been transformed into vegetables and flowers (see Table 11) Besides rice, vegetable is one of main crops that are produced with an important land area, this land area tends to increase in the recent years.

**Table 11-Area, yield and production of some main vegetable species**

Crops	Units	1996	1997	1998	1999	2000	2001	2002
<b>1 – Rice</b>								
Area	Ha	802	703	787	761	705	704	620
Yield	Ton/ha			3.6	4	4.05	3.9	
Production	Ton			2880	3044	2857	2749	
<b>2. Maize</b>								
Area	Ha	20	20	3	1	10	2	22
Yield	Ton/ha			3	3	2.9	3	
Production	Ton			9	3	29	6	
<b>3 – Sweet potato</b>								
Area	Ha	37	12	21	14	5	14	33
Yield	Ton/ha			4.76	6.6		8.03	
Production	Ton			100	924		11.6	
<b>4 – Green vegetables</b>								
Area	Ha	316	372	421	318	436	517	600
Yield	Ton/ha			18.36	17.64	17.14	19.64	
Production	Ton			7730	5612	7476	10153	
<b>5 – Beans</b>								
Area	Ha			10		5	0	
Yield	Ton/ha			0.4		0.32	0	
Production	Ton			4		1.6	0	
<b>6 – Groundnut</b>								
Area	Ha			5		5	0	
Yield	Ton/ha			0.8		1	0	
Production	Ton			4		5	0	
<b>7 – Flowers</b>								
Area	Ha			3	7	18	24	
Production	Ton			35	44	56	84	

(Source: Statistical data of the commune)

Figure 3- Trends in crop areas in Dai Thinh



Source: statistical data of Dai Thinh commune

Table 12-Area, yield and production of green vegetables in Me Linh district - Vinh Phuc in 2001.

	Area (ha)	Yield (ton/ha)	Production (ton)
<b>Total</b>	2832	17,83	50495
1 – Winter season	2250	18,53	41693
2 – Off-season	582	15,11	8794
<b>Administrative units</b>			
1. Phuc Yen Town			
2. Xuan Hoa Town	8	13,75	110
3. Ngoc Thanh Commune	35	13,45	471
4. Cao Minh Commune	64	13,25	848
5. Nam Vien Commune	36	13,61	490
6. Tien Chau commune	75	16,93	1270
7. Phuc Thang commune	124	17,10	2120
8. Kim Hoa commune	43	15,05	647
9. Thach Da commune	46	16,65	766
10. Tien Thang commune	18	14,55	262
11. Tu Lap commune	205	15,00	3075
12. Minh Quang commune	7	14,22	100
13. Thanh Lam commune	159	14,92	2373
14. Tam Dong commune	179	16,12	2885
15. Lien Mac commune	14	14,42	202
16. Van Yen commune	15	13,67	205
17. Dai Thinh commune	11	18,36	202
18. Chu Phan commune	517	19,64	10154
19. Tien Thinh commune	16	13,75	220
20. Me Linh commune	25	23,50	588
21. Van Khe commune	291	20,39	5933
22. Hoang Kim commune	88	18,19	1601
23. Tien Phong commune	10	18,00	180
24. Trang Viet commune	653	19,07	12453
	193	18,50	3571

Source: reports of Dai Thinh commune

Table 12 shows that vegetable area of Dai Thinh commune is very important, it is classified in second position in as regards the land area in the district level and third in terms of yield. Table 13 gives us information related to vegetable production in different periods of the year.

**Table 13-: Calendar of some vegetable crops in Dai Thinh commune- Me Linh - Vinh Phuc.**

<i>Precocious vegetables</i>						
<i>Names of vegetables</i>	<i>Names of varieties</i>	<i>Cropping periods (lunar month)</i>	<i>Duration time from plantation to harvest (day)</i>	<i>Duration of harvest (day)</i>	<i>Yield (kg/sao)</i>	<i>Selling price (d/kg)</i>
Cabbage	Kaka	6 – 8	60		400	2000
Tomato	Tomato, american and french cherries	6 – 7	60	30	1000	4000
		6 – 7	60	45	1500	1500
Green cabbage	X	10	30		450	800
Kangkong		7 – 5	30		500	1000
Cucumber	Thai	2 – 6	35		2000	700
Bean		2 – 3	40	40	700	2000

<i>Vegetables in peak season</i>						
<i>Names of vegetables</i>	<i>Names of varieties</i>	<i>Cropping periods (lunar month)</i>	<i>Duration time from plantation to harvest (day)</i>	<i>Duration of harvest (day)</i>	<i>Yield (kg/sao)</i>	<i>Selling price (d/kg)</i>
Cabbage	Green cabbage	9 – 11	90		1800	1000
Bean		4 – 5	40	40	700	1500

<i>Vegetables in late season</i>						
<i>Names of vegetables</i>	<i>Names of varieties</i>	<i>Cropping periods (lunar month)</i>	<i>Duration time from plantation to harvest (day)</i>	<i>Duration of harvest (day)</i>	<i>Yield (kg/sao)</i>	<i>Selling price (d/kg)</i>
Cabbage	Green cabbage	12	90		1500	700
Bean		6	40	40	700	1500

*Off season vegetables (after the Tet, main period of harvest)*

<i>Names of vegetables</i>	<i>Names of varieties</i>	<i>Cropping periods (lunar month)</i>	<i>Duration time from plantation to harvest (day)</i>	<i>Duration of harvest (jour)</i>	<i>Yield (kg/sao)</i>	<i>Selling price (d/kg)</i>
Cabbage		2	60		700	1430
Tomato	American cherries	1 – 2	60	45	800	2000
Cucumber		1 – 2	35	30	1500	1500

Source: Data of survey from farmers

Vegetable species aren't diverse, they are mainly concentrated in the winter season (main season) while in other seasons (off-season), the number of planted vegetables is low (only 2-3 species).

### **E. Vegetable marketing**

Those above vegetable species are mainly purchased in Hanoi markets. Some vegetables like onion or gourd are sold in Central and Southern markets of Vietnam.

### **F. Orientations for crop development**

With an average population growth of the commune is 7%-8%, it is necessary to find new sources of food and income for the population. There is still potential for transformation in the cropping systems and making outlets and prices more stable. Based on land potentials, labour force and other natural resources, the economic development goals of the commune are as follows:

- Transforming 30-35% of rice land area into other commercial crops like vegetables and flowers.
- Merge small land plots into bigger ones
- Develop safe vegetable production according to the orientations of the province.
- Transform 147.47 ha. of 2 rice land into a system of 2 rice cycles + dry crop.
- Transform 109.55 ha. of one rice land into 2 rice land.