

Assigned by Ministry of Agriculture, Forestry and Fisheries

# Base Study on Impact of Population Issue on Agriculture and Rural Development

— Vietnam —

March 2006

The Asian Population and Development Association  
(APDA)



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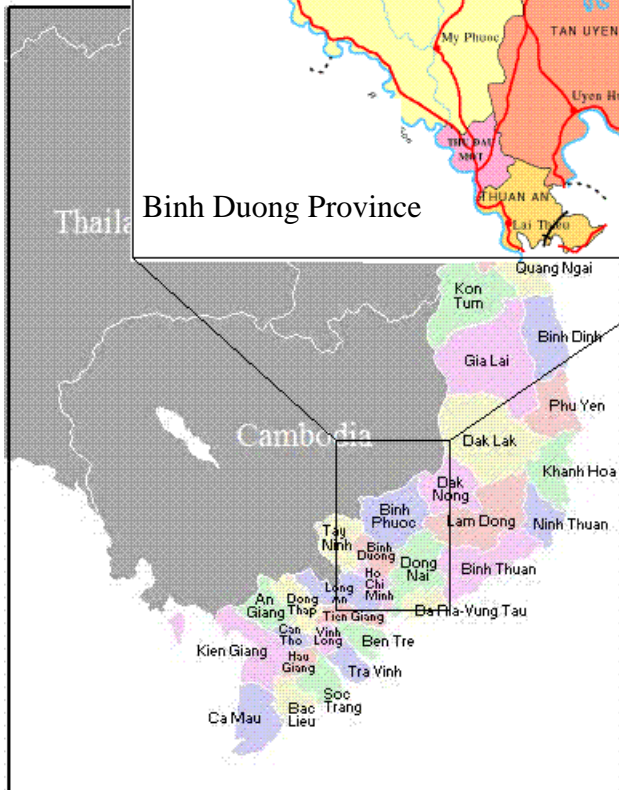
# Surveyed Area



Binh Phuoc Province



Binh Duong Province







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### **Hearing Survey at Binh Phuoc Province**

Questionnaire survey



### **Ho Chi Minh Route in Vietnamese War period**

Area bombed by U.S. Army is now being cultivated as Agriculture Development



### **Rubber farm as afforestation**

Intercropping is seen between rubber trees.





## Foreword

This report is the product of “Base Study on Impact of Population Issue on Agriculture and Rural Development” consigned by the Ministry of Agriculture, Forestry and Fisheries to Asian Population and Development Association (APDA) in fiscal 2005 and was conducted in Vietnam. The study and coordination were mainly performed by the domestic review panel created within APDA and headed by Dr. Shigeto Kawano, Professor Emeritus, the University of Tokyo.

Reduction of poverty and starvation as well as securing of sustainability are the pressing challenges included in the U.N. Millennium Development Goals requiring the support of international community and are positioned as priority item in Japan’s ODA Outline. The important tasks are deeply related to population issues including rapid population increase as well as rural-urban and urban-rural migration and various forms of inter-sectoral cooperation are being implemented to address these issues. For this reason, a broad range of information was collected in this study and problems were sorted out with regard to population issues in developing countries in order to propose the policy and points to keep in mind when offering cooperation in the field of agriculture, forestry and fisheries in the future as well as actual ideas of cooperation.

I would like to thank the staff at the Ministry of Agriculture of Vietnam, and Second Secretary Mr. Takuya Takigawa of the Japanese Embassy in Vietnam for their guidance and cooperation in conducting this study. I would also like to thank Dr. Nguyen Van Tien, Executive Director of Vietnamese Association of Parliamentarians for Population and Development (VAPPD) and Dr. Vo Tong Xuan, Rector of Center Director, Angiang University for their enormous consideration and cooperation in overall preparations of the field survey.

In Japan, International Cooperation Division of International Affairs Department in Minister’s Secretariat of Ministry of Agriculture, Forestry and Fisheries offered guidance and facilities with regard to the content of the study. I would like to take this opportunity to express my deep gratitude.

It is my hope that this report would contribute to promotion of effective cooperation between the agricultural and rural development programs of Vietnam and the Japanese Government.

This report has been prepared under the responsibility of our association and does not reflect the views or policies of the Japanese Government in any way.

March 2006

Dr. Taro Nakayama,  
Chairman,  
The Asian Population and Development Association



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# Chapter 1    Agricultural Development and Population Movement in Vietnam

## 1. Introduction

Immediately after the end of the wars in 1975, the Government of the Socialist Republic of Vietnam launched two emergency nation-wide development programs: the food security program and the population redistribution program. These programs were imposed on the people hastily without thorough scientific and social investigations and planning, causing severe damages to the physical as well as human environments during their first stages. Simultaneously, coupled with the population redistribution program, the movement on reclamation of abandoned (or waste) lands was launched to establish state farms and new economic zones. Again, unscientific plans were forcefully implemented throughout the country resulting in multiple failures. Attempts to correct these shortcomings were soon introduced thanks to receptive policy makers. Starting 1982, many of those failed sites were closed for re-planning. More scientific and technological undertakings were accepted in most planning, more efficient economic management was selected, leading to a new political trend so-called *đổi mới* that encourages the whole nation to move forward with the market economy. This paper introduces the major potentials of Vietnamese agriculture, and describes a brief overview of the stages of postwar agricultural development in light of human redistribution as Vietnam moves in the globalized world.

## 2. Potentials of Vietnamese Agriculture

Vietnam territory can be divided into five physiological zones: coastal, plains, undulating midlands, low mountains, and high mountains. For convenience, the government classified the country into seven agro-economic zones: northern hills and mountains, Red river delta, Northern Central coast, Southern Central coast, Central highlands, Northeast Mekong Delta (or Southeastern Region), and the Mekong Delta. Each region has its own particular features that need in-depth studies before optimum exploitation is executed. In Table 1-1, total plain area most suitable for rice production is only 4.75 M ha (14.38% of total land surface). Calculations based on present population's food requirement at a population growth rate of 2.1%, Vietnam can attain food self reliance to support her own people in the year 2020 and beyond, without forcing *in situ* rice self sufficiency. On the average, agricultural production values (including animal products

and captured fishery products) contributes 49% gross national products and 42% total export values<sup>1</sup>. In order to appreciate the diversity and sustainability of various agro-ecosystems, let us examine each region with particular attention to its potential agricultural capability, from there, hopefully, we can determine appropriate direction and policy for development.

## **2.1 The Red River Delta (RRD)**

**Climate.** The climate in the Red River Delta in particular and the greater part of northern Vietnam is influenced on one part by the tropical monsoon and the other by the northeasterly winds giving north Vietnam a distinct climatic features from the rest of the country. There are four seasons: cold in winter (coolest months from December to February, 12-18°C), and very warm in summer (warmest months from June to July, 32-34°C). Average total annual rainfall is about 2,400 mm, concentrated during July and August, sometimes causing flash flood submerging newly transplanted rice fields. On the average, 7 to 8 tropical depressions and typhoons visited northern Vietnam each year, often causing damages to crops and other properties.

**Land resources.** The soils are degraded riverine alluvium. There is minimum replenishment of new sediments due to flood protection structures along main river courses. As a result, the alluvium is being salinized and becoming more acidic. The land is intensively covered by irrigation systems designed mainly for rice production. Hardly one can see an unused piece of land.

**Human resources.** People here is very laborious, hard working. Population density is highest, 844 persons/km<sup>2</sup>, therefore landholding is smallest in the country.

**Agriculture.** The RRD has a unique potential unequaled by other regions: excellent conditions for high value vegetable crop production on a large scale during the cool months of winter, and for high value fruits such as lychee, small-seeded longan, jujube. Mulberry and silkworm culture are traditional profession. Rice, particularly monocultured rice, is not an efficient crop for the given natural conditions.

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<sup>1</sup> See "Vietnam Agricultural Sector Review," VIE/88/033, UNDP/FAO/WB/State Commission on Planning.



TABLE 1-1 Land and human resources in 2004 classified by agro-economic regions.

REGIONS	AREA (1000 ha)	AGRI. LAND		FOREST LAND		RICE LAND		RICE SOWNAREA		RICE YIELD (t/ha)	PRODUCTION (1000 MT)	TOTAL POP. (1000 per)	RURAL POPULN	
		(1000 ha)	(1000 ha)	(1000 ha)	(1000 ha)	(1000 ha)	(1000 ha)	(%)	(%)				(%)	(1000 per)
TOTAL	32931	9532	12402	4242	99.9	7444	4.82	35868	100.1	82032	73.7	60441		
1 North. hills/mountains	10097	1347	4259	555	13.1	709	3.96	3020	8.4	11780	82.6	9733		
2 Red river delta	1481	851	122	626	14.7	1161	5.78	6709	18.7	17836	76.2	13589		
3 Northern central coast	5151	756	2341	446	10.5	686	4.85	3326	9.3	10505	86.6	9079		
4 Southern central coast	3307	531	1226	282	6.6	401	4.58	1836	5.1	6982	70.8	4940		
5 Central highlands	5447	384	3054	143	3.4	198	3.65	722	2	4674	72.9	3406		
6 Southeast region	3474	771	1032	267	6.3	480	3.59	1725	4.8	13190	46.1	6078		
7 Mekong delta	3974	2456	372	1923	45.3	3809	4.86	18520	51.6	17076	79.7	13616		

Source: Vietnam General Statistical Office Online 2006

## **2.2 Midlands and northern mountainous region (NMR)**

**Climate.** Similar to the RRD, the NMR also has four-season climate, but winter temperature is usually lower, 8-15°C. The annual rainfall averages 2200 to 2400 mm. In the rainy season, flash floods occurred frequently because the watershed cover had been greatly denuded. The typhoons moving in northern Vietnam usually reached up to the NMR.

**Land resources.** The soils are dominantly degraded grey soils, poor in nutrients especially phosphorous, and acidic. Ferralitic soils occur sporadically. Due to heavy exploitation for logging and for food production, severely eroded hills and mountain sides remain dominant features of the NMR.

**Human resources.** The inhabitants are composed of many ethnic minorities whose population density is extremely low, average about 102 persons/km<sup>2</sup>. The majority of these minority people is living with nature, some are nomadic, using the most traditional practices to make a subsistence. Wherever there are lowland people or educated minority people, modern living is introduced.

**Agriculture.** This region is unique for high value forest species, tea, fruits (plum, oranges, lychee, medicinal plants and herbs). Cattle, especially water buffalo, is popular in these hilly areas. For subsistence the local minority groups can grow root crops, corn, high value vegetables, beans, etc. Reforestation of denuded hills is being carried out within the '5-million hectare reforestation' program.

## **2.3 Northern Central Coastal Region**

**Climate.** This region is still influenced by similar climate as northern Vietnam up to the Hai Van pass, near Danang. Its four seasons are not as distinct, however. The coolest months of December and January may have an average temperature of 14-16°C; the temperature of the warmest months of June and July may reach 35°C or more. Rainfall averages 1800 to 2000 mm per annum. An average of 7 to 8 tropical atmospheric depressions and typhoons may land into the region.

**Land resources.** This region is characterized by partly denuded and moderately eroded hills and mountains on one side and sand bars along the coast on the other side. The arable soils are degraded and sandy, acidic and very poor in nutrients. The sand bars are being moved by gusty winds, evading the arable areas.

**Human resources.** Population density is about 167 persons/km<sup>2</sup> unevenly scattered. The tendency is to concentrate in small deltaic areas along the coast line. The ethnic minorities live in small tribes up in the mountains. The lowland people are highly artistic and hard working although agricultural production is still traditional.

**Agriculture.** Great attempt in installing irrigation systems for rice production had been of limited success due to inadequate water resources and unsuitable soils except in some deltaic areas. These soils are much better suitable to various types of bean, peanuts, various forest species.

## **2.4 Southern Central Coastal Region**

**Climate.** Having mainly two seasons as the rest of southern Vietnam, this region is extremely dry during the dry season, with average temperature from 32-34°C. The rainy season gives less than 1,400 mm of rainfall per annum; the driest locality of the country is Phanrang, having only 800 mm of rainfall per annum. The coolest months of December to January are in the range of 20-22°C. Typhoons visit this region almost as often as the northern region.

**Land resources.** The landscape is similar to the northern region, except that there are larger deltaic alluvial areas that can support better rice production. Arable lands are strongly eroded sandy silt, very poor in nutrients. Moving sand bars are threatening arable lands.

**Human resources.** Population distribution is very similar to the northern region. The average density is 148 persons/km<sup>2</sup>. The indigenous people are very artistic and hard working.

**Agriculture.** Aside from good rice production in the major alluvial deltas, this region is famous for best medicinal and spices plants (especially cinnamon). Sugarcane, coconut, fruit trees, grape, cotton, beans, sesame... can be produced here successfully. Mulberry and silkworm culture are traditional profession.

## **2.5 Western High Plateaux**

**Climate.** The mild temperature and humidity of this region is favorable to high value crops. The coolest months of December and January are usually 15-18°C, and the

warmest months of May and June are 28-30°C. The rainfall is from 1,800 to 2,400 mm per annum.

**Land resources.** The large part of the soils of the Western High Plateaux is reddish brown basalt, rich in nutrients when properly covered. Unfortunately due partly to the war and partly to wanton exploitation of new settlers, tens of thousand hectares of precious forest have been felled, the soils are denuded, exposed to severe erosion and becoming acidic, their nutrients are depleted, especially phosphorous and bases. Several denuded smooth hills are very suitable for pasture. A large part of the region is still not cultivated.

**Human resources.** Population density is only 45 persons/km<sup>2</sup>, composing of an integration of lowland Vietnamese and several ethnic minorities. Technological knowhows are limited, the inhabitants live mainly with their own traditional experiences.

**Agriculture.** This region is potentially capable of producing the major industrial crops for the country, such as rubber, tea, coffee, fruit trees. The best mulberry and silkworm production can be found here. Pines and precious forest trees are to be planted. High value vegetables thrive best when irrigation is assured. Rice is grown in irrigated valleys. Thousand hectares of pasture can be established for cattle husbandry, for meat or milk. The production of the above crops and animals can be well integrated into various slopping land farming systems.

## 2.6 Southeastern Region

**Climate.** Moving toward the south, the climate becomes warmer. The temperature does not fluctuate much as in the northern regions. The coolest months of December and January still have a range of temperature from 22-23°C while the warmest months of April and May are in the range of 32-33°C. The annual rainfall is 1,400-2,200 mm.

**Land resources.** There are two major soils groups: reddish brown basaltic soils adjacent to the highlands, and degraded grey soils, with patches of acid sulphate soils adjacent to the Mekong Delta. Both soil groups are being eroded due to exploitation of forests and previous defoliations during the war. Presently a great part of land resources here are still underdeveloped.

**Human resources.** Since Ho Chi Minh City is included in this region, the population density is 332 persons/km<sup>2</sup> (if excluding Ho Chi Minh City, the density is only 183 persons/km<sup>2</sup>). The mountainous areas are inhabited by many ethnic minorities who live

subsistently. The highly trained lowland Vietnamese live in big cities, capable of providing all sort of skills needed for agricultural and industrial activities.

**Agriculture.** Rubber and high value fruit trees are traditional products of this region. Coffee and tea can find a good place here, too. Other specialty crops such as cashew, black pepper, banana, sugarcane, peanut, soybean, mungbean, cowpea, sweet potato, cassava... can grow very well. This ecosystem also suitable for many types of animal husbandry such as poultry, cattle, goat, pig. Various farming systems involving the integration of some of the above components are feasible.

## 2.7 The Mekong Delta (MD)

**Climate.** With the Camau peninsula flushed by the Eastern Sea (South China Sea) and the Gulf of Thailand, the monsoonal climate of the MD is regulated by the flow of the Lower Basin of the Mekong river system and the tidal movements on both the Western and Eastern Seas. The monsoons bring 1,400-2,400 mm of rainfall per annum which is combined with the high flow of the Mekong system during September-October (40,000 m<sup>3</sup>/sec) are causing the annual flood on the entire delta. In depressed areas, such as the Plain of Reeds and the Longxuyen quadrangle, water depth during the flood may reach 80 to 200 cm, while the backswamps behind coastline are inundated to about 50 cm. On the contrary, during the dry season, water table moves deep into the soil profile, causing localized drought. The average temperatures are from 23-25°C during the cool months of December-January to 32-33°C during April.

**Land resources.** The majority of the soils of the MD is young alluvium, about 40 percent of which is affected by problem soils (acid sulphate soils and seasonal saline soils)<sup>2</sup>. About 400,000 ha of problem soils is still unexploited.

**Human resources.** The region is inhabited mainly by Vietnamese, Cambodians, Chinese, and a small number of Cham people, at a population density of 355 persons/km<sup>2</sup>. However, the population distribution is quite uneven, few people live on problem soils areas where land resources are untapped. Many talented people have resettled here for centuries.

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<sup>2</sup> Nguyen Bao Ve et al. 1989. Soil map of the Mekong Delta. Report to Program 60-02, State Commission on Science, Hochiminh City.

**Agriculture.** This is the rice bowl of Vietnam. Although a large part of the land is suitable to rice, various rice-based farming systems involving aquaculture, animals, cash crops, fruit trees have been proven more profitable than rice alone. For aquaculture, fresh water and saline water shrimps can be raised successfully within the rice fields. Large mangroves areas have been zoned for environmental management. Large areas of extremely severe acid sulphate soils are suitable for various economic crops such as pineapple, sugarcane, jute, kenaf, cassava, *Eucalyptus* and *Melaleuca* forests. On riverine alluvium, large fruit trees orchards can be established to grow mango, pomelo, oranges, durian, star apple... The MD is particularly suitable for duck, free ranged native chicken and water buffalo raising, and for two famous indigenous breeds of pig, the Baxuyen and the Thuocnhieu.

### **3. Postwar Agricultural Development**

The rich natural and human resources as described above should have made Vietnam a rich nation. But, on the contrary, today the Vietnamese, proprietors of these rich resources, are ranked among the poorest people in the world. The greatest hardship that the Vietnamese has to suffer is the succession of destructive wars during the last century. The agony is that while in this crucial period other countries were free to develop their economy, the Vietnamese were busy with wars. When the war ended in 1975, in the early part of the postwar period experienced a tremendous drawback because of inappropriate policies in economic development with some emergency programs. Quickly learned from the mistakes, the Government has turned the conditions around by promulgating a series of new policies as early as 1981, particularly since 1988, as part of the renovation policy. Much progress was seen in agricultural development, yet many obstacles need to be removed before Vietnamese farmers can really take off.

#### **3.1 The emergency programs**

- **The food security program** or “*tự túc tự cấp*” (self supply and self sufficiency) was an all-out effort mobilizing every labor force to engage in the production of food crops –mainly rice- wherever possible starting early 1976. The government learning from world history that famine usually follows big wars, had ordered all public servants including the military, and people of all walks of life including students of all schools, had to produce food for themselves by all possible means, even if they have to clear the forests to give way to rice lands. Simultaneously, new irrigation schemes in all the provinces were hastily designed, especially in the Mekong Delta. Hundreds of thousand farmers, employers,



students and other citizens were mobilized to excavate canals for obtaining irrigation water to their respective areas to grow rice. Many of these canals cut into heavy acid sulphate soils where *Melaleuca* forests inhabit naturally. As a result, Vietnam's environment was badly destroyed while total food production was on the decline year after year even with the best possible rice technology developed by scientific organizations. The forests on the hilly and mountainous provinces in the north and central regions were severely removed while the swampy *Melaleuca* forests of the Mekong Delta in the south were cleared. Soil erosion in hilly regions and acid water pollution in large areas of the Mekong Delta reduced rice production while nation's wealth in human, natural and monetary resources were wasted. This is a dark period in our postwar development history, no official figures were recorded, however we estimated that asides from millions of hectares of land were destroyed by the bombings and defoliation during the wars, at least 0.8 million hectares of land in the Mekong Delta were severely damaged while about 5 million hectares of the hilly forests in the north and central regions were cut down due to this *self supply and self sufficiency* policy.

- ***The population redistribution program*** – is the second emergency program that was hurriedly implemented by coercion. Jobless people in cities or towns and unwanted members of communities were forced to leave their residences to resettle in newly established economic zones, state farms, or state forests located in official reclamations of abandoned lands or new lands. Some of the land areas were forced nationalized lands. The majority of the new economic zones was big failures since the settlers usually not interested rural life and having little skill in farming. They abandoned their assigned lands and thatch huts to return back to their former residences as squatters.

### **3.2 The Official Program on Land Reclamation**

These lands are wasted as a direct effect of the wars, or are lands whose natural quality is not suitable for food crop production (i.e. acid sulphate soils, strongly saline soils, peaty soils). The government prepared to move into these areas by establishing new economic zones and state forest farms.

-***New economic zones*** were planned with production facilities such as irrigation canals and residential plots along canal banks. Each settler family was given a residential plot, a piece of land for production and an initial grant for building the house and subsistence during the establishment period (usually 6 months). Settlers were from highly dense cooperatives in north Vietnam, often comprised of less wanted members of the communities; or the jobless families of congested towns of the southern provinces. The results were mostly failures: the settlers themselves being town people, did not know and therefore did not like farming

life. Soon after the initial grant they abandoned the land and returned to squatter in the former original towns.

- *State forest farms* were located at the poorer land areas or at existing forests in order to manage the forests, i.e. reforestation and conserve. However, it turned out that farm authorities often abused their rights, mainly to exploit the forests rather than reforestation. A few conserved forests were in better shape thanks to the direct control by ministerial authorities.

- *State farms* on the other hand were established on better lands, either in abandoned areas with better soils, or lands often owned by prewar citizens/farmers who were forced to give up their lands to state farms. Many land disputes are still unsettled until the present time. Most of the state farms were failures, too, because the farm workers did not care about the farms. The successive financial losses brought most of the state farms to heavy debts to the national bank. The farms were then abandoned. However some innovative and defying state farm managers had gone ahead with non-conform management system, for example instead of treating workers as laborers they contract each worker's family with an assigned piece of land to produce within the production scheme of the state farm. The worker's family would try their best to obtain highest profits from the land after paying their share of costs of the land and the agricultural inputs to the state farm. A well-known successful state farm is Song Hau state farm, in O mon, Can tho.

### **3.3 The Spontaneous Movement on “*Trang Trai*” Establishment.**

- *Illegal commercial farms* - Another type farms was established illegally and spontaneously by vested interest groups such as the war veterans to occupy new coastal accretions to establish shrimp farms; rich businessmen to establish plantations on wasted state farm land or abandoned and war damaged lands; landless and jobless people moved to occupy newly opened lands. Indeed the abandoned lands of the state farms and state forests presented a big waste by the provincial governments. But they could not improve further since their finance was dried. In the meantime the businessmen in Ho Chi Minh City under the initial market economy have made quite good wealth but they dare not put money to industrial and service development for fear of being ‘killed’ by state enterprise. They saw the abandoned lands of the state farms and state forests a good opportunity to invest their capitals. The “*trang trai*” or ‘commercial farms’ were established sometime since the mid-90s, by businessmen and war veterans mostly from HCM City. This is an adventure for all of them, because it is unlawful since the Land Law only allows a maximum of 3 hectares of land per family. The *trang trai* range from 10 to as much as 650 hectares. After nearly 10 years of establishment, many *trang trai* became productive with public goods. No more bushes and abandoned lands. All were good looking orchards of mango, longan,

durian, rambutan, and even rubber, etc. Hearsay went around about nationalizing the farms, or the state farms would take back their lands from the borrowers. The *trang trai* owners requested me to make a case study to convince the government the justification of the *trang trai* as a new direction toward agricultural development coupled with population redistribution. I carried out a thorough study on this spontaneous movement of the people. Observing the successes and failures of more than 60 *trang trai* I made a strong recommendation to the government to recognize this type of investment by domestic capitalists. I emphasized that there is no way to deny this right when the legal policy was to invite foreign capitalists to invest in developing agricultural projects in the country. Then *trang trai* became legal by the Government Resolution no.03/2000/NQ-CP in late 2000. This change in government policy

According to estimates made by the Ministry of Agriculture and Rural Development<sup>3</sup> at that time there were already 113,000 commercial farms with an average size 3-5 ha/farm established. It was estimated that each year the farms in total generated 300,000 employments and additional 3 million part time jobs during the height of the seasons. The General Statistical Office on the other hand had their own data published online (see Table 2), which gave a total of 110,832 *trang trai* throughout the country. Most *trang trai* involve in annual crops and fisheries. The Mekong Delta has the most number of *trang trai* specially in fisheries and rice. The southeastern region (Binh phuoc, Binh duong provinces...) and the Central highlands have the most number of fruit orchards.

TABLE 1-2 Number and types of trang trai (medium and small farms) in 2004 in 7 agro economic regions of Vietnam.

	TOTAL	ANNUAL	PERENNIAL	LIVESTOCK	FISHERIES
		CROPS	CROPS		
TOTAL	110,832	32,961	22,759	9,967	35,424
1. North. hills/mountains	5,384	166	1,217	506	1,041
2. Red river delta	8,131	347	619	2,473	2,478
3. Northern central coast	5,882	1,551	1,081	556	1,160
4. Southern central coast	6,936	1,831	793	552	2,956
5. Central highlands	9,450	1,399	6,887	551	64
6. Southeast region	18,921	1,959	9,693	3,101	3,125
7. Mekong delta	56,128	25,708	2,469	2,228	24,600

Source: Vietnam General Statistical Office Online 2006

<sup>3</sup> NGUYEN PHUONG VI. 2001. Kinh tế trang trại cần khuôn khổ rộng rãi hơn để phát triển (Commercial farms need more incentive policy frame for better development . Read from: <http://www.mofa.gov.vn/quocte/NNG/5v.htm>

Regular wages ranged from VND 300,000 in the north to VND 600,000 in the south. Total annual value of agricultural products was about VND 12,000 billion in which 58% from plant products, 27.3% animal products, 13.7% fishery products, and 1.2% forestry products.

## **4. Constraints to Agricultural Development**

### **4.1 Human resources.**

In agricultural production, generally the human resources are numerous, hard working, and cheapest among their contemporaries elsewhere. They enjoy the new incentive policies but still remain poor in income and technology<sup>4</sup>. The technical manpower, on the other hand, is not uniformly trained due to difficulties in the education system. Thousands of university graduates are unemployed presently. On the job short term specialized training will be needed, particularly for provincial level technicians and administrators.

### **4.2 Technology.**

Generally agricultural technology is mainly concentrated in rice production. Research and development in other commodities is much less. Small scale rural industries need to be developed, particularly in post-harvest industries, including food processing.

### **4.3 Material inputs.**

At present Vietnam imports most of material inputs for agriculture. Domestic production of phosphorous and some nitrogenous fertilizers is functioning. Whether or not to invest in domestic production of urea is still debatable, the consensus is that it may turn out to be more economical if the capital is used for something else since urea production in Southeast Asia is in surplus. Other agrochemicals such as fungicides, insecticides, herbicides, and rodenticides have to be imported.

**4.4 Mechanical implements** are fast changing to serve the individual farm households instead of large scale state farms or cooperatives.

**4.5 Land management** under the new incentive policy in the Land Law, although having had the policy to establish *trang trai* still posing problems of consolidated farming. Small strips of unsynchronized individual plantings are common scenes in northern and central Vietnam.

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<sup>4</sup> CAO DUC PHAT. 1991. Socio-economic conditions of farming communities. Report at the Second Conference of Vietnam Farming Systems Network, held at University of Agriculture of Hue, 26-28 October 1991.

## **5. Prospects for Agricultural Development in Vietnam**

The Vietnamese people is hard working, since thousands of years we have been occupied with food self sufficiency. This instinct of 'food self sufficiency at any cost' has caused millions hectares of forest to be cut down, hundreds of thousand hectares of high value trees (specially fruit trees) were not allowed to occupy rice lands, even if these lands are not highly suitable to rice. Fortunately starting 2000, with a new policy on diversification (Decree no. 9/2000/TTg) the government allowed the provinces to encourage farmers to grow any crop they found fit for the market. But the diversification movement must be accompanied by a whole set of supporting services to be realistic.

### **5.1 Diversification of agriculture.**

Diversified agricultural potentials of the country got a head start since 2000 but it happened almost spontaneously with little guidance as well as investment by the government. There are excellent farming systems suitable to each agro-ecosystem throughout the country. Farmers who adopt these systems not only generating more goods for the society but also more income for their own family and more employment for the community compare to those only grow rice. Observing the approach for agricultural development of our neighboring countries, Malaysia for example, the government only encouraged farmers, by policy, to produce high value exportable agricultural products (and actively finding export markets for their farmers), less attention to food production because they realized that 'buying rice is much cheaper than producing it.' Can Vietnam determine to diversify her agriculture? Agricultural production based on comparative advantage seems very feasible in the very near future. If our agricultural policy can change faster toward this approach, the earlier the likelihood that we can obtain greater international assistance. The exchanges of goods between regions will stimulate stronger and faster economic growth of all the regions, providing jobs for millions workers who have no jobs at present. Development by comparative advantage during this time in history will create favorable conditions for specialization of each region, resulting in better efficiency in production and better quality of products. This is a direction that requires foremost priority; we stop spending scarce and precious capitals just to produce food for self sufficiency.

### **5.2 Development integrated agribusiness zones.**

The most important prerequisite for development is a renovation in the concept of development strategy. Farmers should no longer be left alone to fight in the wide market. We suggest that 'integrated agribusiness zones' will be developed to take care part of this problem, and at the same time provide a better opportunity to utilize precious capital that the government may generate. In these models, the capital will be used for infrastructures

of a newly opened area to provide living and working facilities to new settlers: access roads, housing, market, schools, health clinic... The settlers, many will come from unemployed former government workers, will receive, in addition, precise instructions on how to farm the land to produce the intended commodity for export. The capital to be used here may come partly from the retirement plan of the government, and partly from soft loans which may be obtained from international financing institutions. This integrated approach will hopefully solve the problem of employment, needed capital, and production of exportable products. Vietnam has more than 10 million hectares of denuded land to be developed in the future.

### **5.3 Processing of agricultural produces.**

So far Vietnam exports mainly raw materials. The processing facilities are still in an obsolete stage. Farmers lose so much product values through post-harvest handling of rice and other food grains, fruits, vegetables, fishery products, and animal products. More investments in terms of food science and technology should be forthcoming in these activities.

### **5.4 Marketing.**

Marketing of agricultural products in Vietnam still in the hands of middlemen, private and public. Farmers do not have bargaining power at all due to prevailing government policy in favor of the state enterprises. If agribusiness zones are established, naturally they will be linked with various businesses from both input and output ends. Product distribution will be a function of those enterprises that involve in processing and marketing.

**The domestic market.** As production is oriented to regional comparative advantage, domestic market will play a major role. North Vietnamese will likely buying mango, water melon, dried fishes... from the south while south Vietnamese will be able to enjoy lychee, small-seed longan, coal, apatite... from the north. Business will flourish within the country.

**The international market.** When the government switches to an open policy, the Vietnamese trader enter the free-market world just to realize that most potential clients have committed to other foreign traders. How can we sneak in the market? This will need a favorable foreign policy plus marketing skills. The government will need a stable and attractive policy on foreign trade. At present, it is quite difficult to predict precisely the trends in the international markets and the likelihood of winning more customers at this late period when neighboring countries have been comfortably enjoying the trading activities. Therefore Vietnam must turn mainly to our traditional customers, particularly



the former Eastern European bloc, Africa and China, for substantial trading. So far, market development efforts were too passive. While Vietnam's neighbors are producing similar products also destined for export, should it be time to form a Southeast Asian Common Market?

## **5.5 Capital**

During the past, our capital was meager and yet we used it wastefully due to bad management and inadequate economic assessment for prioritization of investment. Capital management, especially by many state enterprises, was so ineffective that government's budget deficit continues to drain the country's resources. The restructure of the public sector, with particular attention to state enterprises, will be extremely essential. Only when the enterprises generate real profits then the private Vietnamese dare to invest capital in them. As foreign capitals are coming in the prioritization of investments need to be analyzed carefully to avoid the inefficient development.

**Rural credit.** The government should increase the availability of rural credit, with easy terms to cope with the socialist situation where farmers only possess 'land user's rights' but not 'land ownership titles.' Without rural credit, the majority of farmers will not be able to adopt new technology, and will continue to be under the mercy of private exorbitant money lenders.

**Stimulating among better farmers.** As a result of more successful production, many farmers and rural investors will accumulate savings. These savings should be used to re-invest in small rural industries and services instead of to buy extravagant commodities. China and Thailand encourage establishment of small rural enterprises to attract numerous workers in the villages.

## **5.6 Infrastructures.**

Rural roads, bridges and means of transportation should be quickly established, preferable with capital from private sector who will have, in return, the right to take toll fees up to a certain period. Communications links should also be provided.

## **5.7 Prices.**

In market economy, government's intervention in prices of agricultural products should be minimum in order to allow healthy competitions for better quality and production efficiency. Modern methods in price analyses should be employed in order to stimulate production while sufficiently protecting the consumers.

## **5.8 Science and technology.**

Appropriate and sustainable technologies for each agro-ecosystem should be carefully developed. This will require a new science and technology policy and a reasonable restructuring of scientific institutions throughout the country. We cannot afford to let the situation go on as at present. Both formal and informal education should be reformed to tailor the needs of our growing society. A strong extension system should be formed central level to the grassroots.

Each sub-agroecosystem will be carefully surveyed for benchmark data on natural, biological, and socio-economic characteristics using asset-based community development approach and the rapid rural appraisal as tools. After analysis of the data, direction for development will be outlined as development models. Each model will be realized by the cooperation between interdisciplinary scientists and local farmers. Technology components (agricultural inputs, new varieties of plants and animals, equipment...) will be available to farmers at the right time and reasonable price.

## **6. Concluding Remarks**

The fortune that the Vietnamese Forefathers handed down to us and to our grandchildren is indeed very great. We often feel very proud of our “velvet mountains and rivers, golden forests, silver seas.” The world knew well our natural riches and intelligent and cheap labor. But, the Vietnamese people still live in poverty. Recognizing this drawback, we must do all we could to catch up with our neighbors. Basically appropriate education for the people will show us the way out of poverty. The real challenge is whether we can really take advantage of the ever-improving renovation policy of the government to introduce major reform in our economic development, in which our education system must be globalized to produce graduates who have the competence needed by the growing world.

This chapter is contributed by

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## **Chapter 2 Overview and its Agriculture in Surveyed Area**

### **1. Overview of Surveyed Area**

#### **(1) Introduction**

The cooperative selected as the survey site for this survey has its operations extended across Binh Phuoc Province and Binh Duong Province in the southern region of Vietnam. It is located about 80 kilometres from Ho Chi Minh City and 240 kilometres from the Cambodian border. There is a road connecting to Cambodia but is in poor condition and sometimes become unusable in the rainy season. Two-and-half hours of car travel was required to reach the destination in our case. Road maintenance project by support from JBIC was under way and paving work for the main road had been completed part of the way. It is hoped that road condition will be improved in the future. While agricultural activities of this region are recently attracting attention, difficult economic condition persists as development has only taken place in the past 10 years or so. According to the household expenditure survey conducted in 2002, monthly household income per capita in Binh Phuoc Province was 331,240 VND<sup>5</sup> (approximately 21 USD as of December 2005) which corresponds to the category of absolute poverty according to the World Bank categorization.

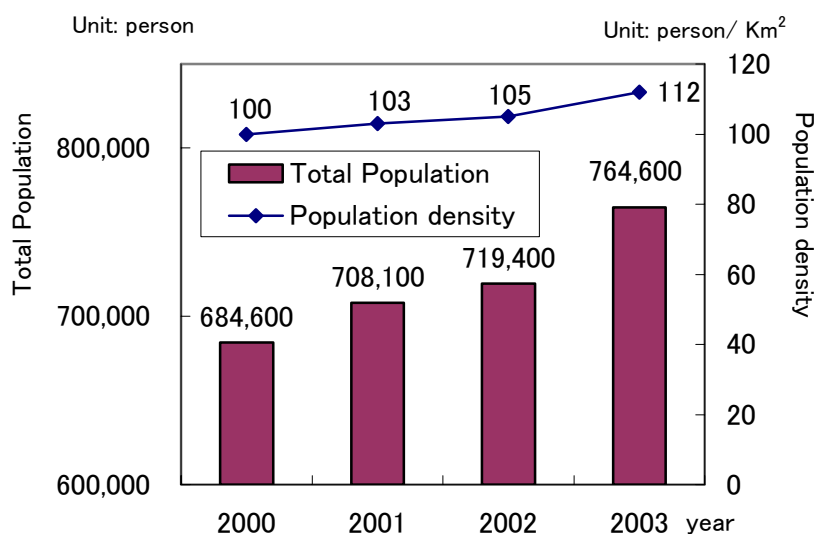
#### **(2) Population of the surveyed region, population influx and population programs**

According to the announcement by Vietnam Statistics Bureau, Binh Phuoc Province has a total population of approximately 765,000 and land area of 685,700 hectares. Forty-one ethnic minority groups are said to account for some 20% of total population. As will be shown later, this province is currently experiencing population increase with population density increasing from 100 per square kilometre in 2000 to 112 per square kilometre in 2003.

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<sup>5</sup> GSO(2004), *Result of the Survey on Households Living Standards 2002*, Statistical Publishing House, Hanoi.

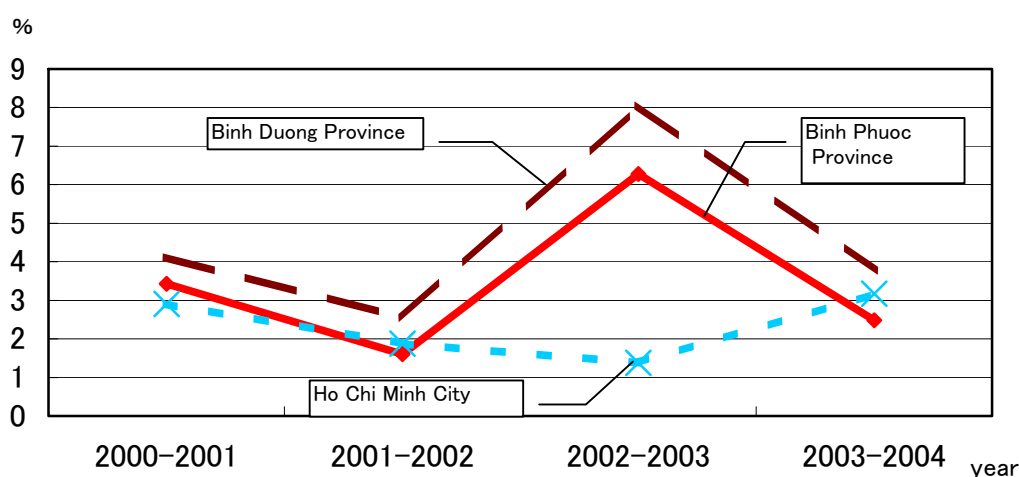
Figure 2-1 Total population and population density of Binh Phuoc Province 2000-2003



Source: GSO, *Socio-Economic Statistical Data of 64 Provinces and Cities*, Statistical Publishing House, 2005, Hanoi.

An extremely noteworthy characteristic of the population in this region is its strikingly high population growth rate. This fact becomes clear through comparison with the population growth rate of the neighbouring Ho Chi Minh City. A particularly significant increase has been indicated in 2002/03 period after registering a decline in 2001/02. Of particular interest is the fact that population growth rate in Binh Phuoc Province was actually high even though expected monthly income for Ho Chi Minh City was high at 904,120 VND<sup>6</sup> (approximately 57 USD as of December 2005).

Figure 2-2 Comparison of population growth rate by province (Binh Phuoc Province, Binh Duong Province, Ho Chi Minh City)



\*2004 provisional.

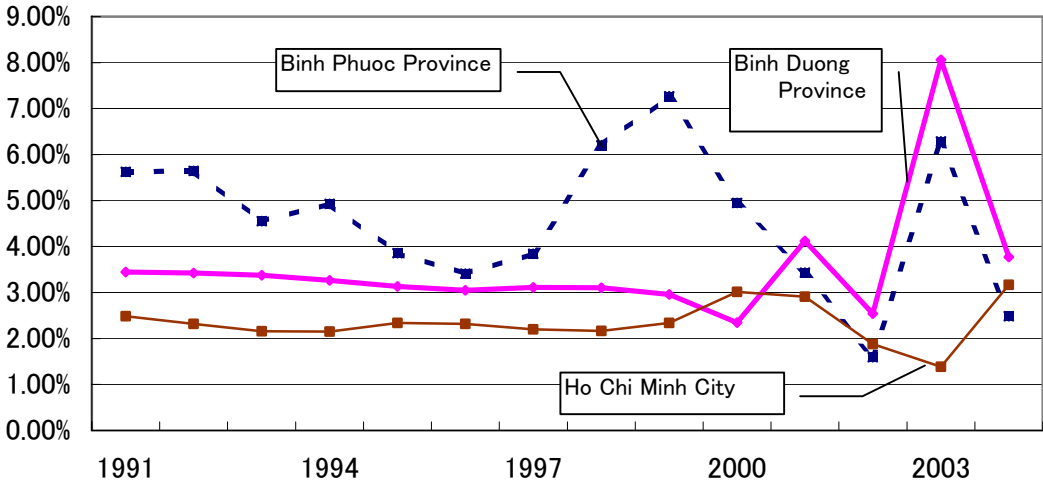
Source: GSO(2005), *Statistical Yearbook 2004*.

<sup>6</sup> GSO(2004), *Result of the Survey on Households Living Standards 2002*, Statistical Publishing House, Hanoi.

A look at changes in population growth rate from 1991 to 2004 shows a clearer picture of changes in long-term population growth rate. Population growth rates in Binh Phuoc Province, Binh Duong Province and Ho Chi Minh City were compared here. The following facts require particular attention aside from the overall trend of population increase.

- (1) Certain growth rate had been observed in Binh Duong Province but the rate was particularly accelerated from 2000 onward.
- (2) Ho Chi Minh City is usually showing a growth rate of about 2.5% a year.
- (3) Binh Phuoc Province has high population growth rate compared to other provinces on the whole but showed a markedly high growth rate during the 3-year period from 1997.

Figure 2-3 Changes in population growth rate by province (1991-2004)



Source: Constructed using data from *Vietnam Agriculture and Rural Area in the Renovation Period 1986-2002* and *Statistical Yearbook 2004*.

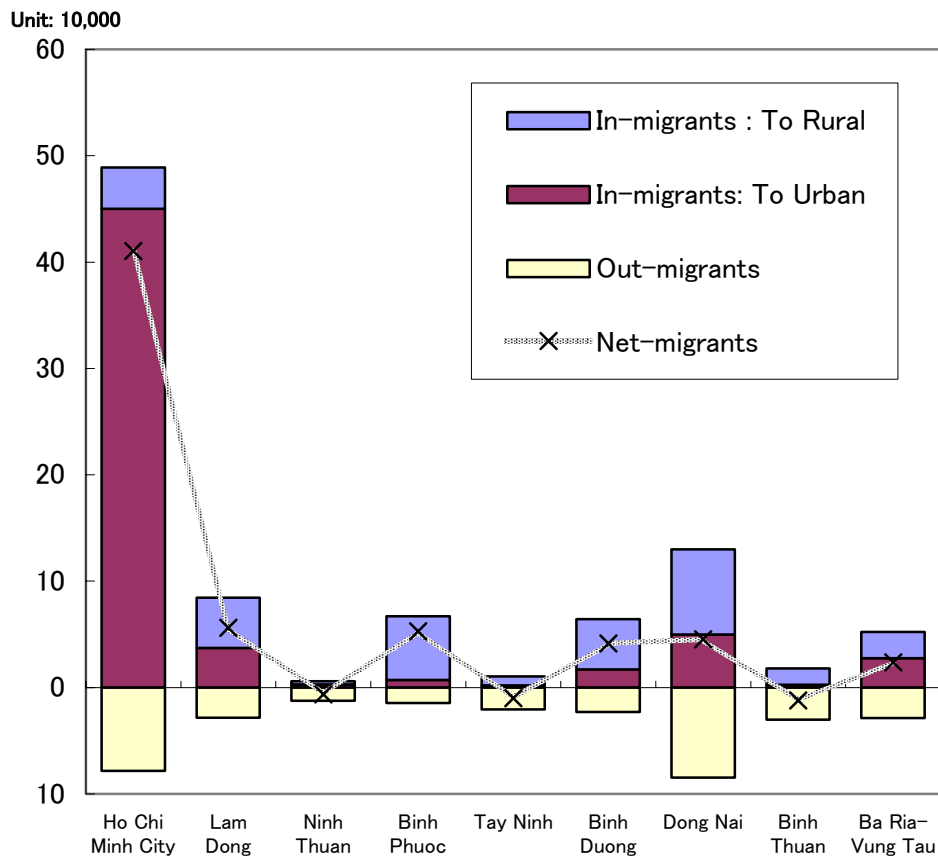
As usually seen in the phenomenon known as “urbanization,” influx of population to urban areas is seen as “general trend” in the developing world. However, the trend observed in this province appears to indicate the fact that an opposite case may hold true. For this reason, the manner of demographic change in Binh Phuoc Province will be examined in greater detail. Matters to be examined include: first, whether population is flowing in relative to the natural rate of increase; and second, what is triggering the population increase after population influx is confirmed. Moreover, data will be verified using labour statistics when searching for the cause of population increase.

### (3) Comparison of migration and population growth rate

The natural increase rate of 2.01<sup>7</sup> shows that the value of foregoing population growth rate is eventually accepting the migrants. In this sense, increase in population not categorized under natural increase is observed in this province to confirm the existence of population influx.

In fact, aforementioned data on migration shows the influx of population to this province. A detailed look at migration by region reveals that inter-provincial migration to the southeastern region is taking place in the following manner. While overwhelming size of migration to Ho Chi Minh City is obvious, one can see that migration to rural areas is more dominant cause of population increase than migration to urban areas in other provinces.

Figure 2-4 Population influx in southeastern Vietnam by province



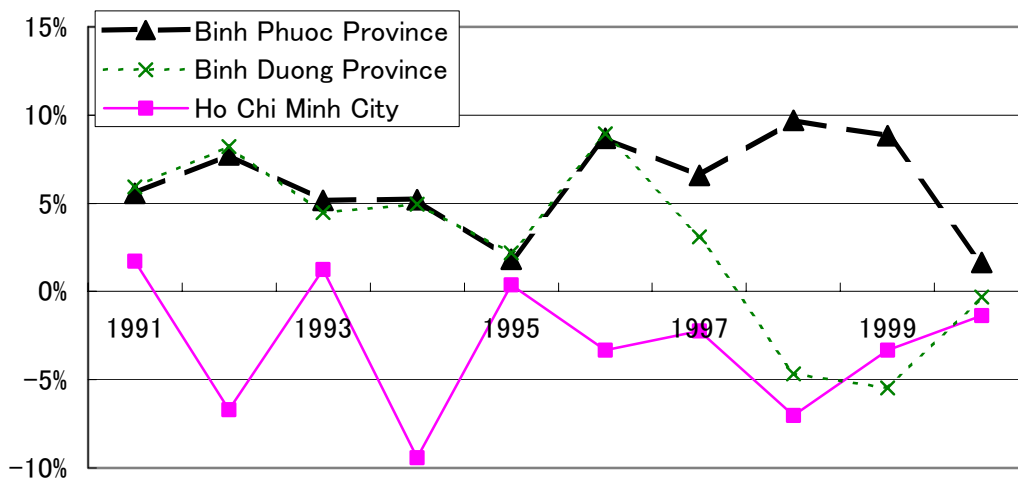
Source: GSO and UNDP, 1999 *Population and Housing Census: Census Monograph on Internal Migration and Urbanization in Vietnam*, 2001.

<sup>7</sup> GSO(2000), *Census Year 1999*.

#### (4) Causes of population increase

Now that population increase through migration has been confirmed, a question arises as to why population influx occurs in this province which relies on agriculture as main industry and is known to be in a state of absolute poverty. One of the possible cases of population increase under such situation is people migrating as factory workers to areas where factories are invited, for instance. According to statistics, however, it is agricultural population that is increasing. Agricultural population is increasing at a particularly high rate in Binh Phuoc Province compared to other provinces in southeastern Vietnam. The fact that increase rate of agricultural population in Binh Duong Province has taken a downward turn after 1998 highlights the uniqueness of Binh Phuoc Province.

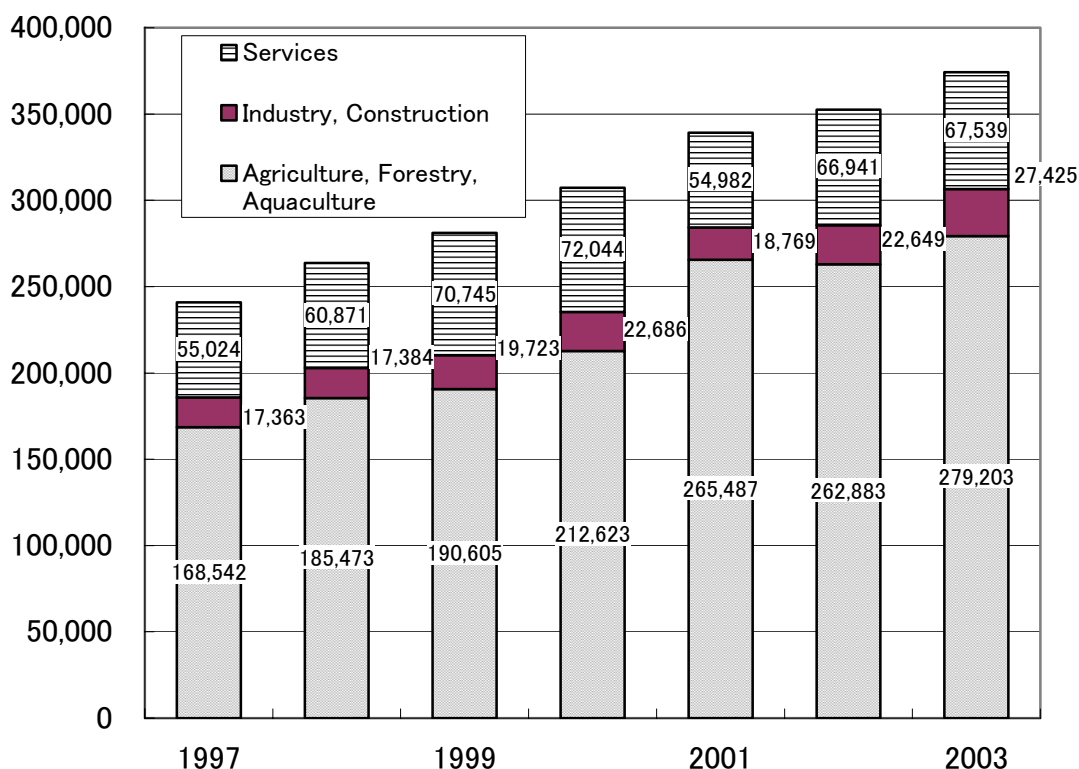
Figure 2-5 Changes in rate of agricultural population in the surveyed region (1991-2000)



Source: MoLISA (2004) *Labour – Employment in Vietnam 1996-2003*, Labour-Social Publishing House, Hanoi.

What is worthy of note here are the changes in labour population by occupation in Binh Phuoc Province. As already seen on the table, rural population in Binh Phuoc Province has continued to increase since 1995. This change is believed to be related to the facilitation of agricultural development through the announcement of Cooperative Act in 1997. While urban population has been increasing slightly in the recent years, it may be possible to attribute this increase to increase in rural population. In fact, urban population slightly decreased and increase in rural population in excess of that margin has been observed in the tentative figures for 2004.

Figure 2-6 Changes in labour population by occupation in Binh Phuoc Province (1997-2003)



Source: Constructed using data from MoLISA (2004), *Labour – Employment in Vietnam 1996 – 2003*, MoLISA (2002) *Statistical Data of Labour – Employment in Vietnam 2001*.

As shown above, population increase exceeding the natural increase rate has been observed in Binh Phuoc Province and agricultural population is increasing as if there is some correlation with natural increase rate. While agricultural development is regarded as a major cause of such increase in rural population, the true cause has yet to be determined. Background of agricultural activities by agricultural migrants and their present condition are therefore analyzed here based on data obtained from our hearing survey.



## 2. Characteristics of Agriculture and Rural Village in the Surveyed Area

### (1) Importance of agriculture in the Surveyed Area

Binh Phuoc Province is a region in which households having agriculture as their main source of income account for 90% of all households. In addition, agriculture, forestry and fisheries account for a little less than 90% of income source for rural households. Both of these percentages are higher than the national average.

In contrast, Binh Duong Province is close to Ho Chi Minh City and is more urbanized. Percentages of households having agriculture as main income source and agriculture, forestry and fisheries in income of rural household are low at 50% and a little less than 50%, respectively.

Percentage of rural household is higher in Dac Lak Province and Gia Lai Province compared to Binh Phuoc Province.

Table 2-1 Characteristics of industry and regular jobs in the surveyed area

	All	Region and Province			
		Central Highlands		Southeast	
		Gia Lai Province	Dal Lak Province	Binh Phuoc Province	Binh Duong Province
No. of Households	13,906,477	171,694	345,228	150,586	125,536
No. of Agriculture Households	10,689,753	159,753	321,601	134,296	67,392
Percentage (%)	100	100	100	100	100
Agriculture, Forestry, Aquaculture	79.07	91.62	92.73	88.7	54.45
Industry, Construction	6.12	1.71	0.85	1.92	22.4
Services	11.16	5.79	5.57	8.15	19.42
Others	3.65	0.89	0.85	1.23	3.75

Source: GSO(2003), Results of the 2001 Rural, Agricultural and Fishery Census, Statistical Publishing House.

## (2) Land use

Binh Phuoc Province has high percentage of forest area followed by growing area of permanent crops. Percentage of paddy is small. Dominant among permanent crop acreage are natural rubber, coffee and cashew nuts and their percentages are high compared to other provinces in the country. The province also has the largest growing area of pepper.

Binh Duong Province has high percentage of permanent crop growing area and low percentage of forest. Growing area of natural rubber is largest in the country.

Table 2-2 Land use in the surveyed area (1988, 1000 hectares, %)

	All	Region and Province			
		Central Highlands		Southeast	
		Gia Lai Province	Dal Lak Province	Binh Phuoc Province	Binh Duong Province
Total area	32,894	1,550	1,954	685	272
Agricultural land	8,080	277	391	274	198
Annual crop	5,763	157	149	26	37
Paddy field	4,213	42	44	8	21
Perennial crop	1,666	97	215	238	148
Fruits	610	2	6	13	9
Forest	11,985	858	1,215	352	15
Aquaculture pond	337	0	1	1	0

Source: GSO, *Statistical Data of Vietnam Agriculture, Forestry and Fishery 1975-2000*, Statistical Publishing House, 2000.

In Dac Lak Province, forest still accounts for more than 60% of the area and growing area of coffee is largest in the country. Gia Lai Province also has forest percentage in excess of 50% but also has more than 500,000 hectares of land other than farm and forest. Much of this is thought to be wasteland.

Table 2-3 Main crops in the surveyed area (number of households)

	All	Region and Province			
		Central highlands		Southeast	
		Gia Lai Province	Dal Lak Province	Binh Phuoc Province	Binh Duong Province
No. of farming households	10,689,753	159,753	321,601	134,296	67,392
Rubber	57,263	987	2,296	8,409	21,698
Coffee	561,439	73,315	239,489	23,898	211
Cashew nut	273,230	13,881	13,167	71,050	18,516
Pepper	240,222	19,847	22,117	60,187	10,441

Source: GSO, *Results of the 2001 Rural, Agricultural and Fishery Census*, Statistical Publishing House, 2003.

### (3) Farm income

Binh Phuoc Province has above-average income level of crop farms while that of Binh Duong Province on par with national average. Income levels of crop farms in Dac Lak Province and Gia Lai Province were lower than average.

Livestock farms in Binh Duong Province had high income level.

Table 2-4 Income of crop farms in the surveyed area

	Crop production farming households				
	All	Central highlands		Southeast	
		Gia Lai Province	Dal Lak Province	Binh Phuoc Province	Binh Duong Province
Labour power (unit: person)	6.4	6.3	4.4	5.0	14.9
Agricultural land (unit: ha)	5.5	5.1	4.5	5.3	10.5
Capital (million VND)	129.1	216.6	149.5	267.3	348.6
Income (million VND)	28.1	23.0	23.5	44.5	29.7

	livestock farmer				
	All	Central highlands		Southeast	
		Gia Lai Province	Dal Lak Province	Binh Phuoc Province	Binh Duong Province
Labour power (unit: person)	4.1	4.3	5.1	5.7	7.0
No. of livestock					
Cattle	14.6	45.9	55.2		5.2
Pig	69.9	39.0	20.9	23.3	66.8
Chicken	1882.6	28.1	33.5	5,500	2,514.7
Capital (million VND)	236.0	131.1	188.9	222.5	323.9
Income (million VND)	45.6	27.6	40.3	41.0	94.6

Source: GSO, *Results of the 2001 Rural, Agricultural and Fishery Census*, Statistical Publishing House, 2003.

#### **(4) Percentage of deprived population (chronically-deprived population)**

Degree of poverty in the surveyed area will be examined here based on estimates by Glewwe et al. (2004, ch.7).<sup>8</sup> This is because people may go in and out of poverty for tentative reasons.

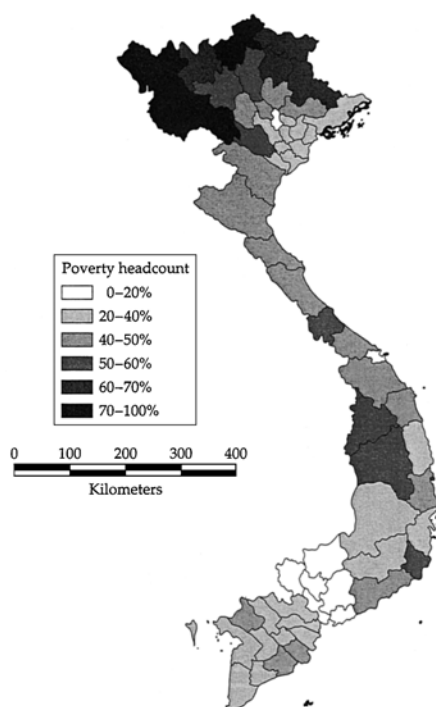
The method employed in the study by Glewwe et al. was to estimate consumption expenditure function through regression analysis by taking consumption level per capita as explained variable and variables concerning household characteristics (educational level, percentage of nonworking dependents, type of job, asset and living environment) and regional characteristics as explanatory variable in the first phase. The estimated consumption expenditure function is used to estimate the anticipated consumption expenditure for each household, marking those as “0” if the value is below the poverty line (i.e. the household is deprived) and as “1” if the value is otherwise. In the second phase, census data is used to estimate the likelihood of each household’s consumption level falling below the poverty line followed by calculation of average for each province.

The results of this estimation are shown in Figure 2-7 and Table 2-5. According to these results, Binh Duong Province has the second highest chronic poverty rate after Ho Chi Ming City. Binh Phuoc Province is also ranked low at 11th out of 61 provinces. Dac Lak Province has moderate poverty rate in the country while Gia Lai Province has high poverty rate of 65%.

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<sup>8</sup> Glewwe,P., Aggrawal,N., and Dollar D.,eds.,2004, *Economic Growth, Poverty, and Household Welfare in Vietnam*, Washington,World Bank.

Figure 2-7 Poverty occurrence rate by province



Source: Glewwe, Agrawal and Dollar (eds.), 2004, *Economic Growth, Poverty, and Household Welfare in Vietnam*, Washington D.C., Chapter 7.

Table 2-5 Poverty occurrence rate in the surveyed rural area (head count percentage)

	All	Central highlands		Southeast	
		Gia Lai Province	Dal Lak Province	Binh Phuoc Province	Binh Duong Province
Poverty Rate	44.1%	65.0%	45.1%	19.7%	9.2%
Ranking among 61 Provinces		11	31	54	2

Source: Glewwe, Agrawal and Dollar (eds.), 2004, *Economic Growth, Poverty, and Household Welfare in Vietnam*, Washington; World Bank.

### 3. T Agricultural Cooperative

#### (1) Background of establishment

T Agricultural Cooperative, located 80 kilometres north of Ho Chi Minh City in Ben Cat County of Binh Duong Province, is a production organization that mainly grows fruits. The cooperative's uniqueness lies in having transformed a wasteland that had poor water conditions and was regarded as unfit for cultivation into a fruit growing area in a short period of time.

This knowledge attracted the attention of Mr. Tan, a graduate of military academy born in 1946. He was running a nuoc mam factory in Can Tho for a while after retiring from the army and his wife was raising pigs for living. Mr. Tan discovered that fruit production was flourishing as business when he visited Thailand. He then realized that the climate and soil property of fruit growing region in Thailand are similar to those in Ben Cat County where he fought the American troops during the Vietnam War. So he studied the soil and found out that the soil in Vietnam had slightly lower pH and higher nutrition content. He sold his nuoc mam business and purchased 6 hectares of land in Ben Cat in 1996. It consisted of land where private landowners had only succeeded in planting eucalyptus and government-owned land. The government was sceptical about his project at the time and advised him not to go through with it.

Photo1: Mr. Tan spoken at agricultural cooperative office



According to Mr. Tan, his launching of business inspired his colleagues and subordinates during the service to follow suit, resulting in establishment of an agricultural cooperative consisting of 56 farms in 1997. However, it is easy to imagine that he had persuaded

others in the process and that establishment was backed by facilitation of agricultural development by agricultural cooperatives through the announcement of the Cooperative Act in 1997. The announcement encouraged large-scale farm development by the people and was in a way an encouragement of development projects by the private sector.

The cooperative had 77 member farms at the time of our survey. Fifty-six of these members were military veterans and the rest were retirees from government and private companies. Thirty-one billion VND were collected from the settlers at the time of development to put up electric wires and build 5.2 kilometres of main road, 25 kilometres of farm road and 10.4 kilometres of irrigation channel. As of the end of 2004, the farm had 412 hectares in area with an average of 5.3 hectares per farm (see table). It must be noted that the table does not show accurate farm area because the ceiling of land ownership for upland farming was 9 hectares when the cooperative was established but has now been raised to 30 hectares (3 hectares for paddy). For instance, Mr. Tan purchased 61 hectares at the time of his settlement but divided the ownership among his 8 family members. For this reason, the area of land ownership shown in the table indicates the area titled to the householder. According to Mr. Tan, the actual area under the control of the cooperative is 950 hectares.

Table 2-6 Basic data of agricultural cooperative members (as of the end of 2004)

Membership number	No. of family	Breakdown			Management area (ha)	No. of livestock
		Cooperative member	No. of Agricultural worker	Non-agriculture		
1	3	1	2	0	8.5	10
2	6	2	2	2	8.1	20
3	3	0	2	1	2.0	0
4	5	0	2	3	4.2	0
5	6	0	3	2	4.2	0
6	4	0	2	4	3.1	0
7	6	1	2	4	4.1	0
8	3	1	1	1	3.9	15
9	3	0	1	2	3.5	0
10	8	1	2	5	4.1	0
11	9	0	4	5	9.2	0
12	5	0	2	3	2.6	0
13	5	0	2	3	3.3	0
14	5	1	3	1	6.0	0

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15	11	1	2	2	22.0	60
16	7	0	4	3	10.1	0
17	7	0	2	5	2.6	0
18	8	0	3	5	10.2	50
19	6	0	2	4	5.1	0
20	6	0	2	4	9.8	0
21	6	0	2	4	5.8	0
22	5	1	1	3	6.5	0
23	5	0	2	3	2.5	0
24	6	0	3	3	5.5	0
25	6	0	2	4	2.3	0
26	6	0	3	3	15.0	30
27	6	1	3	2	6.1	5
28	7	0	3	4	8.8	0
29	7	0	3	4	6.2	25
30	7	1	2	5	2.7	0
31	8	0	3	4	3.7	0
32	5	0	3	2	2.7	0
33	7	0	4	2	8.2	20
34	7	0	4	3	7.8	0
35	8	0	4	4	8.8	60
36	7	1	4	2	3.6	0
37	5	0	2	3	2.3	0
38	5	0	2	3	2.3	0
39	7	0	2	5	4.7	0
40	10	1	4	5	22.0	20
41	9	0	4	5	17.4	0
42	8	0	4	4	17.4	0
43	7	0	3	4	4.8	0
44	5	0	2	3	3.0	0
45	5	0	2	3	1.7	0
46	3	0	2	1	1.6	0
47	5	0	3	2	1.0	0
48	7	0	3	4	5.1	0
49	7	1	3	3	5.7	0
50	7	0	2	5	3.7	0
51	7	0	3	4	5.0	20
52	3	1	1	1	2.0	0

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53	7	13	3	4	7.1	0
54	7	0	3	4	4.3	10
55	8	0	3	5	4.9	30
56	8	0	3	5	9.7	0
57	8	0	3	5	24.5	0
58	5	0	2	3	5.8	0
59	5	0	2	3	2.2	0
60	7	0	2	5	4.7	0
61	8	0	3	5	7.4	0
62	13	2	5	6	6.6	0
63	4	0	2	2	2.5	0
64	2	0	1	1	2.5	0
65	4	0	3	1	5.0	0
66	6	2	3	1	1.0	0
合計	411	32	171	216	410.7	375

Source: Internal data of T Agricultural Cooperative

The cooperative started by planting longan which can be harvested after one year for immediate income. It also planted taro between the trees and sold it to a Japanese noodle maker operating in a nearby industrial complex. The cooperative is no longer growing taro as the fruit trees grew after several years. Harvesting of mango and durian started 3 years after planting the trees.

Mango production continued until 2000 but 5 to 6 tons were left unsold every year owing to quality problem concerning colour and texture. A fruit drying facility was built in 2000 by taking a 500 million VND loan from the provincial government (20% of which was subsidy and 400 million VND has been paid off). Members also contributed 1.5 billion VND towards this facility by buying stock at 1 million VND per stock (limit of stock ownership was 30%). Raising the required fund was relatively easy as those owning the stock were given priority in use of the facility. Profit from this project will be distributed among the shareholders.

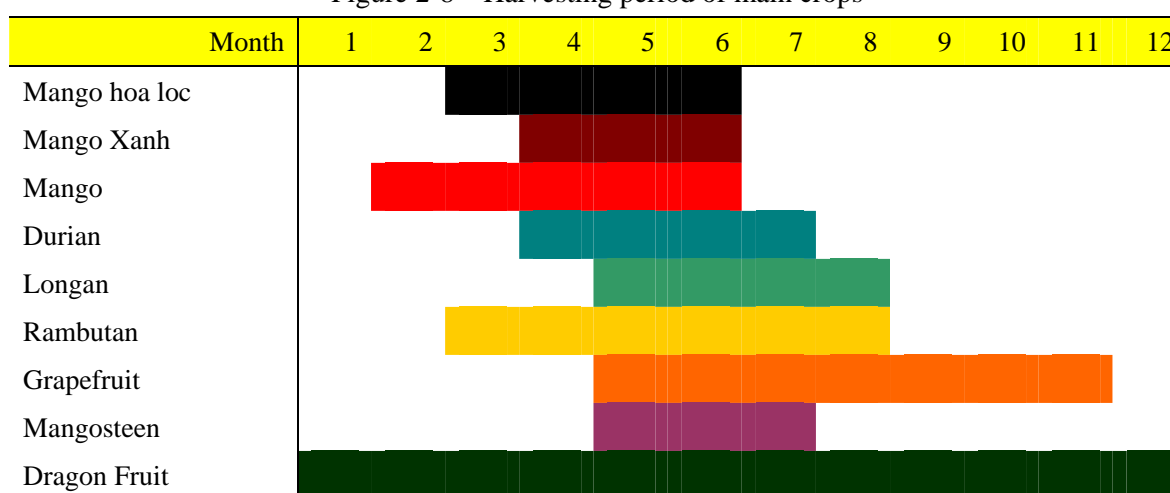
The chief crop from the viewpoint of sales (Table 2-7) is durian, followed by mango and rambutan. Planted area of longan has decreased following a decline in its market price. The rubber farm discussed later was also growing longan but had incurred large loss after its price dropped and had converted the longan field into rubber plantation 3 years ago.

Table 2-7 Production results for 2005

	Production (ton)	Average price (Dong/ton)	Sales (Dong/ton)
Durian	200	20	6,950
Mango	500	2	1,000
Rambutan	100	8	800
Orange	20	10	200
Pepper	50	19	950

Source: Internal data of T Agricultural Cooperative

Figure 2-8 Harvesting period of main crops



Source: Internal data of T Agricultural Cooperative

Table 2-8 T Agricultural Cooperative production results

Fiscal year	2002	2003	2004
Gross capital (million VND)	3415.5	3863.9	3888.4
Gross sales (million VND)	5427.8	6771.9	25102
No. of membership farms	63	67	77
No. of Workers	224	231	244
Net income			
Total of farms (million VND)	2171.73	2708.73	3765.23
Total of Cooperative (million VND)	12.7	67.72	24.5

Source: Internal data of T Agricultural Cooperative

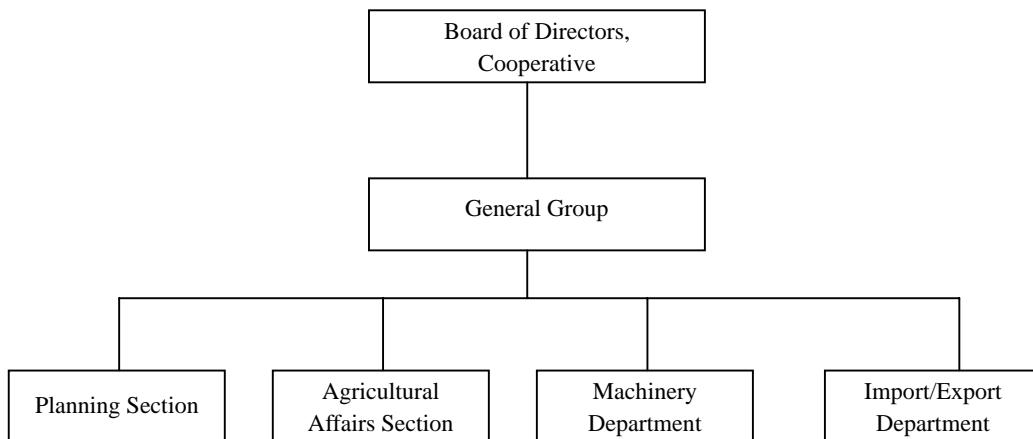
Net income per farm obtained from production results amounted to approximately 3,250 USD in 2004. However, actual income is assumed to be considerably higher as the data was obtained from the annual report of this cooperative (Table 2-8).

## (2) Form of organization

Organizational chart of the agricultural cooperative is shown below. Agricultural section purchases agricultural inputs such as fertilizer, insecticide and seeds at a budget size of 2.5 billion VND and distributes them among the farmers. The cost of input becomes about 5% lower than the market price through bulk purchase. Farmers pay for this cost at the time of their delivery.

Import and export section gathers market price information and signs export contracts. Cooperative members buy farms products from its members at market price and charges 100 VND per kilogram for longan and mango, 200 VND per kilogram for durian and a portion of market selling price for livestock as commission.

Figure 2-9 Organizational chart



## (3) Marketing

Thirty to 35% of income is obtained from export of durian, mango and rambutan to the Chinese and the Taiwanese markets. It also exports dried longan and durian to China.

Information about the Chinese market is obtained by calling the Vietnamese Embassy in China. Fruits are transported overland by freezer truck to the Chinese border where they are sold to Chinese merchants. It is a 48-hour travel to the border and a truck carries 20 tons of fruit. The cost is 9 million VND (approximately 500 to 600 USD).

Fruits are graded at the cooperative to ensure quality, although some farmers pack their own fruits and accept returns when they are not sold.

#### **(4) Future Plans**

T Agricultural Cooperative established a joint company named SR Vietnam with a company based in Seoul, Korea named Favia. The new company will lease a total of 260,000 hectares in Cu Jut County and Kal Rlap County of Dal Nong Province from 2005 to 2055, and plant acacia which will be sold as plywood material to Favia in Korea. T Agricultural Cooperative and Favia invested 10.8 million dollars and 25.2 million dollars, respectively. The company was established under the prodding of the Korean Government and also serves as the means through which Korea can purchase carbon dioxide emission credit.

This agricultural cooperative was also trying to launch a new rubber plantation project. At the time of the survey, the cooperative was in the process of leasing a 27,000 hectare land in Gia Lai Province, which is located about 200 kilometres north of Ben Cat Province where the cooperative is located, under a 50-year term leasehold interest from the provincial government. At the backdrop is the government's intention of conducting reforestation as private-sector undertaking after the government forestation plan of wild regions in Central Highlands failed several years ago.

The rent is 5,000 VND per square metre for 50 years which is reduced to 2,500 VND through Vietnam's Agricultural Cooperative Act that promotes large-scale development of farmland by private sector. The required capital amounts to an enormous 675 billion VND (45 million USD). The cooperative has a long way to go in raising this amount despite the investment of 21 billion VND (1.4 million USD) from its members. Once the land-use right is secured, the cooperative is considering taking out a loan from international organizations by using it as collateral.

This vast farm is scheduled to be divided into 40 hectare plots with farms being consigned to manage each plot. Since collection of rubber resin is labour-intensive it would be more efficient to sign these consignment contracts than to have a single company hire labourers under the plantation system. In addition, the cooperative is planning to build an agricultural school because formation and management of rubber forest requires knowledge including that of recycling-oriented farming and has already secured a place for it.

Reforestation of Central Highlands is expected to bring about enormous benefits including secured export item and secured employment opportunities. Moreover, it is expected to contribute greatly to environmental issues in connection with carbon dioxide emission rights, which, in turn, offers promise in terms of capital inflow from developed countries. No agreement has been reached with regard to ODA donor countries being entitled to

emission rights as a result of spending ODA budget. An approach towards ODA that would link funds for private enterprises to the reforestation project in Central Highlands therefore must be examined.

#### 4. Labour Migration in Vietnam

Vietnamese Government is hopeful about absorption of population taking place in Central Highlands. There is no denying that the labour migrations of the past had several problems of their own. The fact that Vietnamese Government approved the development centred around rubber plantation in Central Highlands can be regarded as a change of strategy towards enabling Central Highlands to absorb surplus labor rather than forcing Central Highlands.

Table 2-9 Inter-provincial migrants between and within regions by region 1994-1999

	Total Population Ages 5+	Migrant within region (A)	Migrant between region (B)	Total inter-provincial migrants (C)	% making inter-regional move (B/C)x100
Total	68,975,128	0.96	1.94	2.90	66.84
Red river delta	13,579,500	0.93	0.97	1.89	51.04
Northeast	9,796,818	0.68	0.66	1.34	49.50
Northwest	1,965,217	0.09	1.19	1.28	92.77
North Central Coast	8,942,617	0.26	0.45	0.71	63.00
South Central Coast	5,846,321	0.78	1.13	1.91	59.09
Central Highlands	2,624,361	0.35	9.12	<b>9.47</b>	<b>96.27</b>
Southeast	11,480,881	1.78	6.24	8.03	77.77
Mekong River Delta	14,739,413	1.26	0.38	1.64	23.13

Source: General Statistical Office, UNDP, *Census Monograph on Internal Migration and Urbanization in Viet Nam*, Statistical Publishing House, Ha Noi, 2001.

A look at percentage of migrants by region shows that that of Central Highlands is 9.47%, which is higher than the industrial Southeast region, making it a region with highest percentage of migrant labourers in Vietnam. What we must keep in mind here is the social peculiarity of Central Highlands. In the first place, Vietnam has a Gulliverish ethnic composition in which the Kinhs account for nearly 90% of the population and the remainder being made of numerous ethnic minority groups. However, minority groups

are concentrated in Central Highlands. Let us take a look at the ethnic composition of migrants and non-migrants in the 2004 Vietnam Migration Survey conducted by UNFPA. Please note that the areas covered by the survey were limited to Hanoi, Northeastern Economic Zone, Central Highlands, Ho Chi Minh City and Southeastern Industrial Zone. What is worthy of note here is the fact that, while Kinh account for more than 95% of both migrants and non-migrants in other regions, they only account for 54% of non-migrants and 62% of migrants in Central Highlands, indicating high presence of minority groups (Table 2-10).

As sporadic as it may be, insurgence by minority groups have been reported in Central Highlands. While development of this region is certainly important for Vietnam, it is also a region that may trigger serious problems unless proper measures are taken with regard to ethnic minority groups.

Table 2-10 Ethnic composition of migrants and non-migrants (Major ethnic group only)

	Kinh	Tay	Thai	Hoa	Kno Me	Muong	Nung	H' Mong	
<b>Non-migrants</b>									
Hanoi	99.3%	.1%	.0%	.2%	.0%	.2%	.2%	.0%	100.0%
Northeast Industrial Zone	99.2%	.2%	.0%	.4%	.0%	.1%	.1%	.0%	100.0%
Central Highlands	53.8%	10.2%	7.5%	.6%	.0%	4.3%	9.5%	.7%	100.0%
Ho Chi Minh City	97.1%	.3%	.0%	2.1%	.5%	.0%	.0%	.0%	100.0%
Southeast Industrial Zone	99.6%	.2%	.0%	.1%	.1%	.0%	.0%	.0%	100.0%
Total	89.8%	2.2%	1.5%	.7%	.1%	.9%	2.0%	.1%	100.0%
<b>Migrants</b>									
Hanoi	99.3%	.2%	.0%	.0%	.0%	.2%	.2%	.0%	100.0%
Northeast Industrial Zone	97.7%	1.0%	.2%	.4%	.0%	.2%	.3%	.0%	100.0%
Central Highlands	62.0%	7.7%	2.7%	.6%	.1%	2.4%	13.0%	5.8%	100.0%
Ho Chi Minh City	97.4%	.2%	.2%	1.0%	.4%	.4%	.4%	.0%	100.0%
Southeast Industrial Zone	95.2%	1.8%	.9%	.5%	.6%	.7%	.2%	.0%	100.0%
Total	90.3%	2.2%	.8%	.5%	.2%	.8%	2.8%	1.2%	100.0%

Source: UNFPA, The 2004 Vietnam Migrant Survey, 2005.

## 5. Rubber Production in Vietnam

Rubber is the third largest agricultural export item after rice and coffee. Planted area of rubber has been increasing since 1990 and reached 430,500 hectares in 2002. Latex production has amounted to 327,400 tons, 85% of which is exported. Main export destinations include China, Singapore, Malaysia, Taiwan and United States. Relatively stable demand can be expected for this primary product from rapid increase of demand for tire production in China. Fruit prices have been experiencing a slump in the past several years and orchards are being converted into rubber plantations. Latex production in 2003 amounted to 4,330,000 tons (377 million dollars) which is almost a sixfold increase from 1990.

Table 2-11 Planted area of rubber in main provinces (1,000 hectares)

	1995	1996	1997	1998	1999	2000	2001	2002
Total	278.4	303.4	347.5	383.0	394.4	413.8	415.8	430.5
Gia Lai Province	21.7	28.8	37.1	49.0	49.5	55.8	55.6	56.7
Dal Lak Province	19.1	20.5	25.1	26.0	26.2	26.4	26.8	28.8
Binh Phuoc Province	62.2	70.7	77.7	82.2	84.3	87.0	84.1	89.8
Tay Ninh Province	24.2	25.0	26.2	27.4	28.7	29.0	29.5	29.8
Binh Duong Province	67.1	69.0	83.9	89.8	92.2	94.6	98.1	99.0
Dong Nai Province	41.5	40.1	40.4	41.9	41.8	42.4	41.0	40.6
Binh Thuan Province	2.8	4.0	6.3	7.2	8.1	9.2	10.4	11.3
Ba Ria Province	18.2	18.6	18.1	18.4	17.8	19.5	20.1	20.1

Source: Statistical Publishing House, Vietnam Agriculture and Rural Area in the Renovation Period (1986-2002), Hanoi 2003.

Table 2-12 Production of rubber in main provinces (1,000 tons)

	1995	1996	1997	1998	1999	2000	2001	2002
Total	124.7	142.5	186.5	225.9	238.8	290.8	312.6	327.4
Gia Lai Province	4.8	7.7	10.5	35.2	14.8	31.0	33.5	32.5
Dal Lak Province	5.1	5.6	7.1	7.9	9.5	18.0	19.9	22.1
Binh Phuoc Province	26.2	30.9	36.3	46.7	60.7	67.0	68.9	71.9
Tay Ninh Province	9.0	9.3	29.6	11.8	16.0	22.5	25.7	28.2
Binh Duong Province	30.4	34.7	42.1	53.1	62.4	74.7	83.5	89.5
Dong Nai Province	31.3	33.6	35.8	36.8	46.0	42.7	44.3	43.5
Binh Thuan Province	0.3	0.4	0.5	0.5	0.9	0.6	0.9	1.5
Ba Ria Province	11.4	12.0	15.0	16.1	19.2	20.3	24.5	26.0

Source: Statistical Publishing House, Vietnam Agriculture and Rural Area in the Renovation Period (1986-2002), Hanoi 2003.



The government created state rubber plantations by taking over the rubber plantations that had been in existence since the French colonial days. The government then allocated land to small farmers and embarked on contracted cultivation because of the inefficiency of these state-owned plantations. However, productivity did not improve as the farmers did not take good care of the land they did not own. A business person from Ho Chi Minh City bought the land from 1992 to 1993 and launched a farm business that included rubber plantations.

However, state farms still produce 80% of the entire production and 50 rubber processing factories (large-scale processing factories) in existence are also owned by the state-owned Vietnam Rubber Cooperation.

Photo 2: Collected rubber sap



Rubber was regarded as main crop in the development scheme of Central Highlands. However, the government-led development ultimately failed. The government therefore made a policy shift to approve utilization of private-sector initiatives and led to large-scale development of T Agricultural Cooperative.

Rubber sap can be collected for about 20 years from the first collection 6 years after the trees are planted. Thirty kilograms of sap is collected per day from 1 hectare of land and converted into 7.5 kilograms of smoke sheet. Smoke sheets are exported at 1,650 USD per ton. For instance, a private rubber factory that owns 300 hectares of rubber plantation

and buying rubber sap from adjacent plantations was producing 1.5 to 2 tons of smoke sheets per day. Factories operate 9 months out of a year as saps cannot be collected during the season of intense heat that lasts for 3 months from mid-February when rubber trees drop their leaves.

Rubber sap is collected every other day but the aforementioned factory must collect sap from 150 hectares of rubber plantation every day. In this sense, it is quite labour intensive and would play a certain role in creating employment in the mountain region.



Photo 3:  
Private rubber smoke factory



Photo 4:  
Latex sheets are dried before  
being smoked



Photo 5:

Cassava is planted immediately after planting rubber trees for effective utilization of farmland. Intercropping is not possible once rubber trees become large.

### **Note: Migration to mountain region and ethnic minority issues**

The population of Vietnam is predominantly Kinh with the remaining ten-some percent consisting of a wide range of ethnic minority groups. The history of Vietnam is analogous to the history of Kinh people who are settled people subsisting on paddy rice. The Kinhs are believed to have followed a similar path as the Han people in China who shared and assimilated the same cultural identity between the northern Chinese and southern Chinese despite considerable differences in their genetic lineage.

Main ethnic minority groups of Indochina such as the Mons, Thais and Zaos are distributed from Xishuangbanna in China to all of Indochina. Most of them are living off migratory slash-and-burn farming and used to migrate without having the concept of national boundaries in the days when these boundaries in mountain regions were not clearly defined as they are today. Such activities are seen throughout Indochina with no marked difference between Vietnam, Laos and Myanmar. Many of them had been living without having any connection with modern world until very recently. For instance, during our survey of Laos in 1996, we asked one of the highland Lao person who started to settle in a new homestead village why she did not send her child to school; the response we got was “I didn’t know such thing existed until I came here.”

They have been obtaining livelihood by repeating traditional migratory slash-and-burn without any regard for national boundaries. For them, land ownership is the right to slash-and-burn that has been traditionally been secured and carried out over long interval of 10 to 20 years for the sake of sustainability.

As mentioned in the reason for selection of the region for this survey, Kinhs, the settled people, moved into the region originally inhabited by minority groups subsisting on slash-and-burn. For Kinhs who are mainly settled people following paddy agriculture, land was something that they used on a continual basis and its rights were exclusive.

Vietnamese Government is paying respect to ethnic minority groups and making efforts to protect their rights from the viewpoint of equality in line with their socialist ideology. However, it is not easy to bridge the difference in presumed understanding about land title. Migratory slash-and-burn farming uses vast areas of land. It is very difficult for a country's government to leave land in such state when it is necessary to absorb population pressure amidst continuing population increase. In the case of Vietnam, the country must create settlements in sparsely-populated migratory slash-and-burn regions to absorb population pressure. This can be regarded as the backdrop of the problem that occurred between settlers and ethnic minorities at a coffee plantation in Dak Lak Province. Problems of this nature occurred frequently in various parts of the world in the past. As is widely known, conflicts between Native Americans and white settlers seen in American cowboy films originated from difference in understanding about land rights.

Then how can one solve the issue of ethnic minority groups that have different concept of land use and lifestyle based on such concept when creating settlements? It is an issue for which no easy solution can be found as it cannot be solved without respecting the culture of minority people. Even if their settlement does move forward, it would be difficult for them to earn cash income as they do not have sufficient farming skills for settled agriculture. It would also be difficult to hire these people on a continuous basis as farm workers or factory workers as they have not adapted to modern work ethic or order.

One of the solutions is modernization through education. Although it would lead to loss of cultural diversity, it is not possible to realize development in modern society without education, and promotion of education is absolutely necessary from the viewpoint of right to development. Efforts made by the Vietnamese Government to disseminate education and advance settlement among ethnic minority groups from the viewpoint of equal right to education are valid in terms of securing equal rights to development.

Stabilization of population is a condition needed for protecting the lives of ethnic minority groups and maintaining their cultural diversity. Population of Vietnam demonstrated dramatic changes in the past 15 years with its fertility rapidly declining through the effort of the government. TFR—which indicates the number of births per woman—has dropped from 3.8 in 1989 to less than 2.1 in the 2005 estimate and is presumed to have fallen below the replacement level. Vietnam's population policy succeeded to the extent that the

country may face dwindling birthrate in the near future if this trend continues. However, population has a momentum and will continue to increase for the next 20 to 30 years owing to influence from population increase in the past. Population will then shift from a period of stability to rapid aging of society and depopulation. Ethnic minorities cannot isolate themselves from the current of informatization and globalization and are gradually being affect by these changes. As a result, although unfortunate from the viewpoint of cultural diversity, behavioural patterns of minority groups themselves are predicted to change over the next 20 to 30 years. In other words, issues in connection with population increase, settlement of mountain regions and ethnic minority will probably cease to exist after the next 20 to 30 years.

No one probably has clear answer to how these issues should be addressed during this period. Knowledge based on cultural anthropology and sociology studies tells us that the next best measure would be to promote system-derivative acceptance of modern rules and settlement culture among the minority groups. This would require offering cultural anthropologically and sociologically-reviewed education about their culture in addition to dissemination of ordinary education program. Offering opportunities for earning income is also an imminent task in which vocational training including transfer of agricultural technology would be helpful.



## Chapter 3 Findings of the Field Survey

### 1. Findings of the Agricultural Survey

#### (1) Household characteristics

Average age of householder was 54 years and average number of household members was 4.15 persons. Households were relatively advanced in age and number of household members was smaller than average. Family labour force averaged at 2.83 persons and the percentage of nonworking dependents was relatively low owing to high age of householders and the fact that many of their children have already left their home. The most common final schooling was elementary school and, combined with those who did not finish elementary school, accounted for the majority. The percentage of those who have completed junior high school is low compared to enrolment ratio of secondary education. Average household income exceeds 5,000 USD (more than 1,000 USD per person) which is more than 4 times the average for rural areas of southern Vietnam.<sup>9</sup>

Table 3-1 General condition of surveyed farm households

No. of Households	41
Average age of head of a household	54
No. of person living together	4.2
No. of labor power	2.8
No. of person living apart	0.6
<b>Education level of head of a household</b>	
Under primary school	7
Graduate primary school	19
Graduate junior high school	8
Graduate high school	2
Graduate vocational school	1
Graduate university and above	3
<b>Household income (VND)</b>	<b>82,219,272</b>
Farm income	72,733,174
Off-farm income	9,486,098

Source: Hearing survey

<sup>9</sup> See Glewwe, P., Aggrawal, N., and Dollar D. (eds.), 2004, *Economic Growth, Poverty, and Household Welfare in Vietnam*, Washington, World Bank. Chapter.5

## (2) Scale of farm ownership and farm management

Average farm ownership was about 5 hectares which is average size for this region (see Table 3-2). There are many farm households that bought farms here and moved in from other regions. Percentage of large farms exceeding 10 hectares is low at about 10%. Large farm owners living in cities usually hire permanent workers and seldom rent out their land (see “Permanent Labour” below).

Table 3-2 Farm ownership of surveyed farm households

	Less than 5ha	Over 5ha less than 10ha	Over 10ha less than 20ha	Over 20ha	Total	Average size (ha)
Size of owned farm	24	13	2	2	41	4.99
Size of managed farm	24	13	2	2	41	5.19

Source: Hearing survey

## (3) Water use conditions

As for water use conditions, well irrigation accounts for two-thirds of all irrigation and 30% of farmland remain unirrigated.

Table 3-3 Irrigation conditions

Irrigation condition	Number
Canal	2
Tubewell	36
Sprinkler	3
Non-Irrigated	16

Source: Hearing survey

## (4) Agricultural assets

Many farms own irrigation pumps. Other agricultural machineries owned include tractors and sprayers. However, the fact that asset evaluation of livestock is 6 times greater than that of machineries and buildings means that much greater asset is owned in the form of livestock such as cows and pigs.

Amount of agricultural assets is 1.85 times greater than the income. Return on capital estimated according to the following equation is approximately 8%.<sup>10</sup>

$$\text{Return on capital} = \{(\text{Agricultural income}) / (\text{Farm asset value} + \text{Farm asset value})\}$$

It appears that profitability of agriculture is not so high considering the inflation rate.

Table 3-4 Status of agricultural asset ownership

	No. of owners	Values per owned farm (1,000 VND)	Values per no. of farms (1,000 VND)
Fix capital for agriculture			
Tractor	11	43,309	11,620
Irrigation pump	28	18,354	12,535
Sprinkler			
Sprayer	19	1,703	789
Storage	4	4,300	420
Other	17	4,403	1,826
Livestock			
Cattle	14	226,400	77,307
Pig	16	143,019	45,348
Goat	3	33,197	2,429
Chicken	8	2,538	248
Average value for agricultural properties (1,000 VND)			152,520

Source: Hearing survey

## (5) Main farm products

Main farm products produced by the farms include, in order of high gross income, pork, fruits (durian, rambutan, longan, mango, orange etc.), natural rubber, watermelon, pepper and cashew. Fruits are grown at most farms.

Many farms are raising cows but have not expanded it to the extent of selling their meat.

<sup>10</sup> This value is overestimated in a strict sense as it is necessary to subtract the amount of self evaluation for family labour from agricultural income.



Table 3-5 Gross farm income

Items	Gross income (1,000 VND)	Gross income per farm (1,000 VND)
Fruits (Durian, Rambutan, Longan, Orange etc)		60,634.8
Pepper	52,100	1,270.7
Rubber	424,960	10,364.9
Cashew nut	21,075	514.0
Cassava	5,000	122.0
Melon	2,000	48.8
Water melon	200,000	4,878.0
Pig	2,764,550	67,428.0
Goat	33,000	804.9
Total	3,502,685	146,066.1

Source: Hearing survey

### (6) Permanent labour

As mentioned earlier, 40% of farms are hiring permanent labour. Farms hiring such labour hire 7.4 persons in average at wage level of approximately 50 USD a month which is about the same as monthly wage of factory workers.

Table 3-6 Permanent labour

Household number hiring permanent labour	16
Average number of hired person	7.4
Average monthly wage (1,000 VND)	753.8

Source: Hearing survey

### (7) Household expenditure

As we have seen earlier, surveyed farm households have high income level and the percentage of food expenditure in income (Engel's coefficient) is quite low. Percentage of household expenditure in income is high at approximately 0.8. This is presumably the result of having included electricity bill used by farms and debt payment in the household expenditure.

Table 3-7 Household expenditure

Total expenditure (VND)	65,641,632
(%)	100.0
Food	18.8
Cloths	2.6
Education	10.7
Medicines	3.5
Social Ceremonies	18.7
Transportation	4.6
Electricity	19.6
Fuel	4.5
Repayment to debt	18.7
Other	0.4

Source: Hearing survey

## 2. Findings of the Population Survey

### (1) Introduction

A hearing survey was conducted on the present condition and views regarding population by including questions about population in the farm household budget survey. The findings on each area are described in the following.

Forty-one respondents were comprised of 24 cooperative member farm households and 17 non-cooperative member farm households. The survey is intended to shed light on the difference between cooperative members and non-members. The survey was conducted in Binh Phuoc Province.

### (2) Basic attributes of survey respondents

Average age of survey respondents was 46.98 years and their median and mode were 48 years and 54 years, respectively. The age of youngest and oldest respondent was 26 years and 68 years, respectively. Two of the respondents were fatherless households and response was given by the mother. One of them was a cooperative member and the other was not.

Table 3-8 Age of survey respondents

	Cooperative member	Non-Cooperative	Total Respondents
Average age	46.6	47.5	47.0
Median	48.5	46.0	48.0
Mode value	54.0	43.0	54.0
Standard deviation	9.6	13.0	11.0
Minimum age	30.0	26.0	26.0
Maximum age	65.0	68.0	68.0
No.	24	17	41

Source: Hearing survey

### (3) Education and educational background

Questions were asked about the educational background of respondents to find out the educational level which serves as an indicator for transfer of agricultural technology and availability of market information. The response we obtained showed that dropout rate is high on the whole and accounted for a little over 70% (73.17%) of respondents. The tendency was particularly high among non-cooperative members. In general, non-cooperative members also had lower educational background. None of them moved on to high school with the exception of one person that had college diploma. They had dropped out before finishing junior high school.

Table 3-9 Education and educational background of respondents

	Cooperative member		Non-Cooperative member		Total	
	Respondent	%	Respondent	%	Respondent	%
No education	0	0.0%	1	5.9%	1	2.4%
Primary school	3 (2)	12.5% (8.3%)	4 (4)	23.5% (23.5%)	7 (6)	17.1% (14.6%)
Junior high school	10 (8)	41.7% (33.3%)	10 (10)	58.8% (58.8%)	20 (18)	48.8% (43.9%)
High school	8 (6)	33.3% (25.0%)	0	0.0%	8 (6)	19.5% (14.6%)
Vocational school	1	4.2%	0	0.0%	1	2.4%
University and above	2	8.3%	1	5.9%	3	7.3%
No answer	0	0.0%	1	5.9%	1	2.4%
<b>Total</b>	<b>24 (16)</b>	<b>100.0% (66.7%)</b>	<b>17 (14)</b>	<b>100.00% (82.4%)</b>	<b>41 (30)</b>	<b>100.0% (73.2%)</b>

\* Parenthetic number means drop-outs

Source: Hearing survey

We asked the same question about educational background to the wives of respondents and obtained the following results. Response from the householder was included for fatherless households. Wives had less education on the whole compared to their husbands. Although their dropout rate was also high at 68.29%, their overall dropout rate was lower than their husbands owing to slightly lower dropout rate in cooperative member households.

Table 3-10 Education and educational background of respondents’ wives

	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
No education	0	0.0%	1	5.9%	1	2.4%
Primary school	5 (4)	20.8% (16.7%)	6 (6)	35.3% (35.3%)	11 (10)	26.8% (24.4%)
Junior high school	9 (6)	37.5% (25.0%)	7 (7)	41.2% (41.2%)	16 (13)	39.0% (31.7%)
High school	7 (4)	29.2% (16.7%)	1 (1)	5.9%	8 (5)	19.5% (12.2%)
Vocational school	1	4.2%	0	0.0%	1	2.4%
University and above	2	8.3%	1	5.9%	3	7.3%
No answer	0	0.0%	1	5.9%	1	2.4%
<b>Total</b>	<b>24 (14)</b>	<b>100.0% (58.3%)</b>	<b>17 (14)</b>	<b>100.0% (82.4%)</b>	<b>41 (28)</b>	<b>100.0% (68.3%)</b>

\* Parenthetic number means drop-outs  
 Source: Hearing survey

**(4) Social structure**

1) Inheritance

Questions were asked about inheritance and the majority of respondents (about 76%) said that inheritance is made equally irrespective of gender. Although some said that their sons will inherit (8 out of 41 respondents (19.51%) responded either “sons will inherit equally,” “sons will inherit,” or “youngest son will inherit”), responses supporting gender-equal inheritance were far greater in number. No gender disparity was observed with regard to inheritance. (Gender disparity will be discussed further in the section on ideal education level for children.)

The results showed no clear difference between cooperative members and non-cooperative members although non-cooperative members had higher percentage of intention for equal inheritance.

Table 3-11 Form of property inheritance

	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
Equal	16	66.7%	15	88.2%	31	75.6%
Equal by boy	2	8.3%	1	5.9%	3	7.3%
Eldest son	1	4.2%	1	5.9%	2	4.9%
Eldest daughter	1	4.2%	0	0.0%	1	2.4%
Last son	3	12.5%	0	0.0%	3	7.3%
Others	1	4.2%	0	0.0%	1	2.4%
<b>Total</b>	<b>24</b>	<b>100.0%</b>	<b>17</b>	<b>100.0%</b>	<b>41</b>	<b>100.0%</b>

Source: Hearing survey

## 2) Ideal education level for children

As commonly known, education is a factor that plays an important role in eradication of poverty. In this study, we inquired about the ideal education level for children irrespective of actual economic condition and asked questions about ideal education level to confirm the respondents' social awareness with regard to ideal education level for their sons and daughters. The following responses were obtained as a result.

As for ideal education level of sons, 87.8% of respondents replied "college or higher." In particular, all except for those that did not respond to this question expressed their desire to provide high education to their sons by sending them to college and beyond.

Table 3-12 Ideal education level for sons

Education	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
Over 10th grade	2	8.3%	0	0.0%	2	4.9%
Diploma	1	4.2%	0	0.0%	1	2.4%
University or more	20	83.3%	16	94.1%	36	87.8%
Others	1	4.2%	1	5.9%	2	4.9%
<b>Total</b>	<b>24</b>	<b>100.0%</b>	<b>17</b>	<b>100.0%</b>	<b>41</b>	<b>100.0%</b>

Source: Hearing survey

Similar responses were also obtained for daughters. All non-cooperative members except those that did not reply wanted their daughters to move on to college and beyond. As mentioned slightly in the section about inheritance, it has become clear that gender disparity was not found in the response about ideal education level. Strong desire to send daughters to higher education indicated in this hearing survey of farm households suggests that farm households that would earn high income in the future would want to send their daughters to college, resulting in social advancement of women.

Table 3-13 Ideal education level for daughters

Education	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
Over 10th grade	1	4.2%	0	0.0%	1	2.4%
Diploma	1	4.2%	0	0.0%	1	2.4%
University or more	21	87.5%	16	94.1%	37	90.2%
Others	1	4.2%	1	5.9%	2	4.9%
Total	24	100.0%	17	100.0%	41	100.0%

Source: Hearing survey

3) Jobs expected for children

Questions were asked about the jobs they expected for their children. Hardly any gender difference was observed in these results either. About half of the respondents mentioned “engineer” as the jobs they expect for their sons. A particularly interesting point about this response is the fact that no one chose “farmer” or “public servant” as desirable jobs for their sons from the list of answers that were given. Combined with the fact that the vast majority of respondents said that they wanted their children to receive college education or higher, we can see that they are hoping to have their children choose better jobs than their parents as opposed to choosing the same job. And the occupation regarded as good job was engineer. Another point worthy of note is the fact that no one gave “public servant” as an ideal job. The response that jobs other than public servant are expected must be the result of judgment that it would be more reasonable to get high education and look for jobs in other areas than to look for more stable position in the government as transition to market economy advances.

Table 3-14 Jobs expected for sons

Occupation	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
Farmer	0	0.0%	0	0.0%	0	0.0%
Engineer	11	45.8%	7	41.2%	18	43.9%
Technician	3	12.5%	1	5.9%	4	9.8%
Teacher	1	4.2%	1	5.9%	2	4.9%
Police	1	4.2%	3	17.6%	4	9.8%
Military service	0	0.0%	1	5.9%	1	2.4%
Medical doctor	3	12.5%	2	11.8%	5	12.2%
Civil servant	0	0.0%	0	0.0%	0	0.0%
Business	2	8.3%	0	0.0%	2	4.9%
Others	3	12.5%	1	5.9%	4	9.8%
No answer	0	0.0%	1	5.9%	1	2.4%
Total	24	100.0%	17	100.0%	41	100.0%

Source: Hearing survey

The following responses were obtained for the job they expected for their daughters. The most common response was that expecting their daughters to become teachers and doctors while no one gave “housewife” as response to reflect that they expected their daughters to pursue a career. In addition, the fact that “doctor” was the expected job for daughters of many respondents while no one mentioned “nurse” shows expectations for acquiring high expertise. As in the case of their sons, no respondent expected their daughters to join the civil service.

Table 3-15 Jobs expected for daughters

Occupation	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
Housewife	0	0.0%	0	0.0%	0	0.0%
Teacher	7	29.2%	7	43.8%	14	35.0%
Engineer	1	4.2%	0	0.0%	1	2.5%
Nurse	0	0.0%	0	0.0%	0	0.0%
Business	2	8.3%	0	0.0%	2	5.0%
Medical doctor	10	41.7%	5	31.3%	15	37.5%
Civil servant	0	0.0%	0	0.0%	0	0.0%
Others	3	12.5%	4	25.0%	7	17.5%
No answer	1	4.2%	0	0.0%	1	2.5%
Total	24	100.0%	16	100.0%	40	100.0%

Source: Hearing survey

4) Response regarding number of childbirths

We asked about the number of children the respondents have given birth to and whether there were any that have died. In response to the question about number of births, 60.9% said that they have 1 or 2 children. Non-cooperative members tend to have more children than cooperative members with 5 out of 17 non-member households responding that they have given birth to 4 or more children.

Table 3-16 Number of childbirths

No of childbirth	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
One	5	20.8%	2	11.8%	7	17.1%
Two	11	45.8%	7	41.2%	18	43.9%
Three	6	25.0%	3	17.7%	9	22.0%
Four	1	4.2%	4	23.5%	5	12.2%
Five	1	4.2%		0.0%	1	2.4%
Six		0.0%	1	5.9%	1	2.4%
Average		2.3 (persons)		2.8 (persons)		2.5 (persons)
Total	24	100.0%	17	100.0%	41	100.0%

Source: Hearing survey

In response to a question whether there were any children that they have lost prior to this hearing survey, 38 households (92.68%) said that they have not experienced such loss. On the other hand, 3 households said that they lost their children. First household lost 2 boys and are raising 4 daughters. Second household lost a boy and is raising a daughter. Third household lost 2 daughters and is raising a daughter that survived. All of these households were non-cooperative members. As will be mentioned later, poor living conditions of non-cooperative members are revealed when analyzed in combination with response to a question about the status of toilet installation.

5) Ideal number of children

We asked about the ideal number of children. Four out of 41 households responded that they do not have any special opinion while 27 (65.85%) gave the same number as the number of children they currently have. As for the remaining responses, 5 households replied that they would like to have more children than they already have, 3 of which said that they wanted boys and 2 said that they wanted daughters. Three of these respondents were cooperative members and 2 were non-members. Meanwhile, 5 households replied that they have more children than their ideal number. One of them said that they have 4



daughters but wanted to have a boy. The 5 respondents consisted of 2 cooperative members and 3 non members.

**(5) Questions regarding social awareness.**

1) Religion

Although Buddhism is the most popular religion in Vietnam, we asked a question about religious affiliation as the survey was conducted in the southern region where traditional religion including CaoDai originated. The response consisted of Buddhists (75.60%), Confucianists (12.20%) and Christians (7.30%). Only one person was affiliated with Cao Dai.

Table 3-17 Religious affiliation of survey respondents

Religion	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
Buddhism	17	70.8%	14	82.4%	31	75.6%
Christianity	2	8.3%	1	5.9%	3	7.3%
Confucism	3	12.5%	2	11.8%	5	12.2%
CaoDai	1	4.2%	0	0.0%	1	2.4%
Others	1	4.2%	0	0.0%	1	2.4%
Total	24	100.0%	17	100.0%	41	100.0%

2) Values

We asked a question “What is most important in your life?” as part of a survey on worldly values and obtained the following results. On the whole, response placing value on family relationship such as “family” and “children” accounted for nearly 80% (78.10%) of all responses, followed by “money” (17.10%). Hardly anyone gave “social status” or “friends” as response and no one placed emphasis on “honour” to indicate that social relationship is not given more priority to family relationship. This point will be elaborated when we analyze the responses obtained about social relationship.

Here, it is necessary to note the fact that other trends can be identified from these responses by separating cooperative members and non-cooperative members. Among cooperative members, “family” and “children” accounted for nearly 90% (87.5%) of all responses while the percentage was 64.7% for non-cooperative members. Instead, at 35.3%, the percentage of “money” was just as high as “children.”

Table 3-18 Worldly values

Important matter	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
Money	1	4.2%	6	35.3%	7	17.1%
Social Status	1	4.2%	0	0.0%	1	2.4%
Family Relationship	10	41.7%	5	29.4%	15	36.6%
Honour	0	0.0%	0	0.0%	0	0.0%
Children	11	45.8%	6	35.3%	17	41.5%
Friends	1	4.2%	0	0.0%	1	2.4%
Enjoying life	0	0.0%	0	0.0%	0	0.0%
Total	24	100.0%	17	100.0%	41	100.0%

Source: Hearing survey

### 3) Ideas about social norm

The following response was obtained to a question about social norm to find out people's attitude towards work and their ideas about social relationship. Response was rated as follows:

1 = strongly agree

2 = more or less agree

3 = more or less disagree

4 = strongly disagree

In other words, more points were given as sense of disagreement increased.

Table 3-19 Ideas about social norm

Question item	Average		
	Cooperative	Non-Cooperative	Total
Tomorrow will be better than today.	1.208	1.294	1.244
Someone who is honest will be rewarded someday.	1.375	1.765	1.537
Someone who is honest will be rewarded in another world.	2.043	2.294	2.150
Do you feel valued by society?	1.875	2.000	1.927
Can you get help from friends when needed?	1.292	1.706	1.463
Do you think your society is fair to the all?	2.333	2.353	2.341
Laziness is a vice.	1.333	1.235	1.293
Dedication to work is a virtue.	1.250	1.294	1.268
It is social responsibility to work hard.	1.208	1.313	1.250
Working hard makes us successful in our life.	1.333	1.400	1.359
More leisure is bad for society.	1.478	1.040	1.579
One should carry work out to the best of one's ability.	1.348	1.471	1.400
Some say that spending money for educating children pays in the long run.	1.750	1.412	1.610

Source: Hearing survey

Several characteristics were observed from the analysis results.

- Those supporting the claim that “Society is fair to everyone” were fewest for both cooperative members and non-cooperative members among all of their responses, signifying that people are feeling social inequality in the surveyed region regardless of whether they are cooperative member or not.
- Few people, both cooperative members and non-members alike, agreed to the claim that “Honesty will be rewarded in heaven,” while many agreed to the claim “Honesty will eventually be rewarded.” It can be seen as evidence of stronger interest in this life than the next life.
- Percentage of those strongly agreeing to a claim “Tomorrow will be better than today” was high among cooperative members and all respondents. Hopes for future were particularly high among cooperative members, indicating that they have positive attitude towards future outlook about economic activities in the region. The fact that similar attitude is also observed among non-members may be an indication of activities in the region opening up promising prospects for the future.
- Almost all non-cooperative members strongly agreed to the claim “More leisure time is not good for the society.” It was the claim most strongly agreed by non-members on average and is filled with their particularly positive attitude towards work when considered in conjunction with their strong agreement to claims “Laziness is vice” and “Dedication to work is virtue.”
- While response from cooperative members is positive compared to non-members with regard to claims concerning social awareness, we have found that non-members are demonstrating positive affirmation of several claims. Firstly, it is a claim asserting that “Spending money on children’s education will pay off in the long-term” which was strongly agreed particularly by non-members. It is a reflection of their hopes for the next generation in unequal society as they maintain prospects for their own future. Secondly, it shows that non-members are holding stronger sense of refusal against leisure and laziness by supporting claims such as “More leisure is not good for society” and “Laziness is vice.”
- One of the claims that showed discrepancy in response between members and non-members was “Support from friends can be expected when needed.” Members were generally positive about support from their friends while non-members had slightly lower degree of positivity. The question specifically asked for “support from friends” and did not necessarily suggest support from the cooperative. However, the discrepancy shows that cooperative members have a strong tendency to rely on support from friends including the cooperative while non-members are not so positive about support from their friends. Although we occasionally come across research results asserting that Vietnamese people do not have very high opinion about the cooperative

system because of their past experience<sup>11</sup>, positive views regarding support from friends were found in our survey results. While it is not possible to identify any causal linkage as to whether the existence of trusting relationship would determine the success of a cooperative or whether the success of a cooperative would bring about creation of trusting relationship, one can anticipate a positive correlation between the effect of cooperative and establishment of trusting relationship.

#### 4) Hygiene (living environment and issues related to hygiene)

It is a well known fact that suppression of infant mortality rate is essential when realizing social change from high birth and infant mortality rates to low birth and infant mortality rates (the so-called demographic transition) (infant mortality survival hypothesis in demographic transition). Generally speaking, diarrhea is the most common cause that raises infant mortality in developing countries, followed by tetanus and pneumonia. We know that the greatest cause of diarrheal diseases is drinking water and that existence of custom for boiling the water to take the water in the form of tea largely reduces the contraction. For this reason, we asked questions about the source of drinking water, treatment at the time of drinking and sewage disposal, which is one of the causes of water contamination, with focus on availability of toilet to study the living environment and hygiene issues.

All respondents were using wells as the source of drinking water. As indicated earlier, existence of custom for boiling water is a treatment that is needed to prevent diarrheal diseases. Availability of toilets would also determine the prevention of sewage mixing into well water.

Table 3-20 Source of drinking water

	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
River	0	0.0%	0	0.0%	0	0.0%
Well	24	100.0%	17	100.0%	41	100.0%
Tapped water	0	0.0%	0	0.0%	0	0.0%
Selling water	0	0.0%	0	0.0%	0	0.0%
Others	0	0.0%	0	0.0%	0	0.0%
Total	24	100.0%	17	100.0%	41	100.0%

Source: Hearing survey

<sup>11</sup> Ishikawa, S., Hara, Y., eds. "Betonamu no Shijo Keizaika," Toyo Keizai Shinbunsha, 1994

To a question about the custom of boiling water before drinking, vast majority of respondents (95.12%), cooperative members and non-members alike, said that they have the custom of boiling water before drinking.

Table 3-21 Have you boiled water when you drink it?

	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
Yes	23	95.8%	16	94.1%	39	95.1%
No	1	4.2%	1	5.9%	2	4.9%
Total	24	100.0%	17	100.0%	41	100.0%

Source: Hearing survey

5) Hygiene (availability of toilet in house)

We asked whether there is a toilet in the house to find out the hygienic condition of living environment. A clear difference in response was observed between cooperative members and non-members. Nearly 70% (69.60%) of cooperative members had a toilet in their home. In contrast, nearly 70% (68.80%) of non-members did not have a toilet in their home. This fact can be regarded as an indicator showing the severity of living environment of non-cooperative members. While non-members told us about high cooperative contributions that must be paid to become a member during the hearing survey, availability of toilet in the house represents tangible difference that exists between members and non-members.

Table 3-22 Do you have a lavatory in your house?

Existence of toilet in the house	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
Yes	16	69.6%	5	31.3%	21	53.8%
No	6	26.1%	11	68.8%	17	43.6%
No answer	1	4.3%	0	0.0%	1	2.6%
Total	23	100.0%	16	100.0%	39	100.0%

Source: Hearing survey

6) Hygiene (measures in the event of illness and delivery)

As a general question, we asked “Where would you go when you are ill?” and “Where would you go when your wife delivers a child?” Number of response varied as multiple answers were allowed.

Hospitals and clinics accounted for 46.22% of the destination in the event of illness to show that respondents are receiving proper medical treatment. No significant difference was observed between cooperative members and non-members.

Table 3-23 Measures in the event of illness

	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
Hospital	19	26.4%	12	25.5%	31	26.1%
Clinic	14	19.4%	10	21.3%	24	20.2%
Health center	4	5.6%	3	6.4%	7	5.9%
Buy medicine at drug store	21	29.2%	16	34.0%	37	31.1%
Just take a herb medicine	9	12.5%	2	4.3%	11	9.2%
Just take rest at home	3	4.2%	4	8.5%	7	5.9%
Religious doctor	1	1.4%	0	0.0%	1	0.8%
Others	1	1.4%	0	0.0%	1	0.8%
<b>Total</b>	<b>72</b>	<b>100.0%</b>	<b>47</b>	<b>100.0%</b>	<b>119</b>	<b>100.0%</b>

Source: Hearing survey

As hospitals and clinics were visited for delivery by nearly 90% (89.47%) of respondents, we can conclude that proper medical treatment is available for child delivery as well.

Table 3-24 Measures in the event of delivery

	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
Hospital	18	52.9%	12	52.2%	30	52.6%
Clinic	10	29.4%	11	47.8%	21	36.8%
Health center	2	5.9%	0	0.0%	2	3.5%
Just take rest at home	1	2.9%	0	0.0%	1	1.8%
Religious doctor	1	2.9%	0	0.0%	1	1.8%
Others	2	5.9%	0	0.0%	2	3.5%
<b>Total</b>	<b>34</b>	<b>100.0%</b>	<b>23</b>	<b>100.0%</b>	<b>57</b>	<b>100.0%</b>

Source: Hearing survey

We also asked about breast feeding which is also important in securing birth spacing and infant health. All respondents said that they were breast feeding.

Table 3-25 Experience of breast feeding

	Cooperative member		Non-Cooperative		Total	
	Respondent	%	Respondent	%	Respondent	%
Breast feed	24	100.0%	17	100.0%	41	100.0%
No	0	0.0%	0	0.0%	0	0.0%
Total	24	100.0%	17	100.0%	41	100.0%

Source: Hearing survey

The following response was obtained for the period breast feeding was practiced.

# **Chapter 4 Farmland and Population Absorption in Indochina**

## **— Possibilities for Environmentally Sound Agriculture and Rural Development**

### **1. Background**

Population of Vietnam has demonstrated rapid changes with TFR, an indicator for average fertility rate of women, declining sharply over a 15-year period from 3.8 in 1989 to less than 2.1 in 2005. This is a value indicating that population will decrease in the long-term and suggests that the problem of population increase may have been solved in Vietnam. However, population will continue to increase for the next several decades owing to the momentum of population increase in the past. For this reason, migration from densely-populated regions to relatively sparsely-populated regions is inevitable to some extent despite the absorption of rising population pressure by rapid industrial development in Vietnam. This is where the importance of agricultural and rural development in Vietnam comes at the fore.

This study has revealed the possibilities for farmland and population absorption in Indochina which are issues deeply related to the modern history of this region. Vietnam War is known as one of global crises of the post-World War II era. Although the memory of Vietnam War has waned after the conflicts and wars broke out in Iraq and Afghanistan at the end of the 20<sup>th</sup> Century and continued into the 21<sup>st</sup> Century, it was a war of the Cold War era in which the U.S. troops boasting the sheer power of materials were virtually beaten by Vietnam that had hardly any means of fighting back. There is no question that it was an incident that caused significant changes in the world that followed.

Vietnam fought the war in the form of guerrilla warfare based on rural irrigation system while U.S. conducted repeated air-raids as represented by the bombing of North Vietnam to advance the war by relying on the overwhelming quantities of materials. The bombing was carried out intensely and was even extended to Laos that had not even declared war to cut off the so-called Ho Chi Minh Trail. The bombing carried out by ignoring national boundaries destroyed the eastern half of Laos and large amount of unexploded bombs are still significantly hindering the country's development. More than 300 million tons of bombs were dropped in Laos that must have had a population of less than 300 million.



This defies all imagination as it means that more than 1 ton of bombs were dropped for every Lao person.

Jungles were burnt down in areas where direct military action took place to destroy the guerrillas and facilitate the operations of U.S. troops, turning the vast areas from the central region to the hill and mountain areas in the south of Vietnam into wasteland. This subsequently created a major environmental damage as the land that had lost its cover also lost its top soil.

## **2. Summary of Interview Survey**

As mentioned in Chapter 2, the cooperative we visited this time found opportunities in such wasteland. The director of the cooperative who served in the war as an officer of the Vietnamese Army during the Vietnam War noticed the similarities of soil between the surveyed area and the fruit growing area that he visited in Thailand after the war and decided to homestead. At the time in 1996, the entire area was wasteland with no trees growing except eucalyptus; it was unsuited for growing most farm crops. In fact, we conducted a survey in the Dong Nai Province which is closer to Ho Chin Minh City than this area back in 1993. The former battleground had its trees burnt off and homesteaders were making a living by growing crops that grew in relatively desolate land such as maize and mung beans.

The fruit cooperative that we visited on this survey has cultivated this wasteland and is conducting large-scale production of durian. Director of the cooperative was engaged in fish sauce production and pig raising in Can Tho but invested all of his money on this land. Many people strongly discouraged him from making this investment at the time but the director began by buying the right of use for land and planted longan, a crop that can be shipped to the market after one year. The Vietnamese economy was growing rapidly at the time and the increasing demand for fruit boosted this effort.<sup>12</sup> At the same time, he planted durian trees and grew cassava and yam between the trees. A Japanese food company that noticed the high quality of his cassava and yam bought the entire crop on a trial basis, enabling him to maintain the farm for 2 years. He has been able to harvest durian and mango since then. Worthy of note in his case is the reason behind this former

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<sup>12</sup> It was also fortunate that inflow of foreign investment gained momentum with the development of Ho Chin Minh City and turned the neighbouring Dong Nai Province into an industrial complex, increasing the demand for fruit production in Binhphuoc Province as a result. Industrial complexes are also being built in Binhphuoc Province and has raised the land use fee by 20 times compared to the wasteland days. This has significantly increased the collateral value of the land owned by the cooperative.

officer's decision to start growing durian; he was convinced that there would be business opportunities for Vietnamese durian because it tasted better than the Thai counterpart.

The cooperative is practicing organic farming. It is applying industrial waste from Ajinomoto as biofertilizer in addition to applying large quantities of agricultural production waste which is often ignored in many developing countries of the tropics as green manure. The cooperative is also raising cow and chicken in the orchard to incorporate their droppings as fertilizer in the natural cycle. This has led to mass outbreak of worms which is creating an even better virtuous cycle. They have tried using chemical fertilizers but stopped using them because it had negative effect on the taste of the durian. It was a viewpoint of a merchant, a viewpoint different from that of farmers. It was not by any means an effort placing environment above everything else nor a firm belief in organic farming. The most important criterion was the needs of the market, and organic farming and recycling farming were adopted to meet these needs. Fertility was recovered and an orchard with lush vegetation emerged on this wasted land as a result. This farming method has created an even more complex cycle. For instance, eels raised by feeding the worms from this farm have very good taste and are receiving many inquiries. They are mainly exported to Taiwan and the farm is asked to increase its production.

### **3. Future Plans**

The director has a plan to invest in other former jungles that were burnt down and became a wasteland in Gai Lai province of Central Vietnam. The plan is to have the cooperative invest and create a rubber plantation. Rubber market has been growing steadily under the projection that demand for tires would rise sharply with the economic development of China. The director's plan is to plant rubber trees on 20,000 hectares of this wasteland. He would first plant cassava and herbs at the same time as planting rubber trees as he did with the orchard in Binh Phuoc Province to support living expenses. Rubber trees can be tapped from the third year and would provide a stable cash income. Compelled to advance tree planting following the enforcement of the Kyoto Protocol, Vietnamese Government is offering various forms of support under the condition that trees would not be cut. For this reason, homesteaders are not allowed to cut trees in new settlements.

The work performed at this farm includes tapping rubber trees, growing pepper and herbs among rubber trees and raising beef cattle using pasture. Cattle is slaughtered according to the Muslim rule and exported as Halal meat to the Middle East where quarantine is not

strict.<sup>13</sup> In addition, worms will be produced in the same manner by utilizing fallen leaves and agricultural waste to export eels for realization of diversified farm and rural development.

While regions surrounding Hanoi in the north and Ho Chin Minh City in the south are demonstrating rapid development, the coastal region of central Vietnam is a poor region with limited industry for its large population. The mountain region of central Vietnam has relatively small population and is mostly inhabited by ethnic minority groups that practice slash-and-burn farming and cannot be readily mobilized as labour force. Labourers are therefore brought in from the central costal region and are contributing to reducing poverty in central Vietnam.

#### **4. Significance of the Program**

This program offers an important case example of agricultural development in many ways. First, it shows that forests are formed as a result of migration from densely-populated region to sparsely-populated region and subsequent settlement. Second, a wide variety of products including rubber, fruits, herbs, meat and eel are produced at the same time as conserving the environment. Increased productivity leads to higher population carrying capacity of rural areas. This fact presents a completely opposite case to the generally accepted notion of migration to less-populated areas causing environmental destruction and offers a new paradigm for agricultural development.

Formation of forests is an effective tool for reducing carbon emission set forth by the Kyoto Protocol and expansion of such reduction can be regarded as increase in tradable emission rights. Implementation of such diversified recycling-oriented farming also leads to soil fertility and environmental protection while products of these activities sustains these activities in a self-reliant manner. However, this kind of agriculture is said to require very advanced know-how.

Migration from densely-populated regions to regions of relatively sparse population for settlement, including planned migration, has taken place in Vietnam in the past. However, the people that migrated to new settlements were forced to return to their former region because they did not follow such system of recycling agriculture and devastated the land by depleting fertility from the soil. In this sense, formation and sharing of skills are just as important as education of farmers.

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<sup>13</sup> Transportation to Thailand has been facilitated by the opening of the East-West Corridor, also making it easier to export products to Middle East.

The Vietnamese Government is currently supporting these new forms of cooperatives by offering numerous privileges to these cooperatives. A wide variety of meanings can be given in addition to these privileges through transfer and sharing of technology, group buying of various equipment and establishment of market. It has been pointed out that the strength of Vietnam in guerrilla warfare lies in development of small groups that had their historical base in irrigation groups for paddy farming. Groups of certain scale are thus compatible with the nature of Vietnamese people.

This program is not applicable only to Vietnam. It can also be applied to other countries that were devastated after being burnt down by the U.S. forces such as Cambodia and Laos and is expected to be effective in areas including environmental conservation, carbon fixing through forestation and formation of self-reliant rural areas.

## **Chapter 5 Challenges of Cooperation**

### **—Based on Field Survey Results—**

In this field survey, the survey team focused on the new form of agricultural management that has emerged in Vietnam concurrently with her remarkable economic development. In developing countries, urbanization generally advances through migration from rural areas to urban areas. In Vietnam, such phenomenon is taking place in Ho Chi Minh City and other cities. On the other hand, a case of migration to rural area was observed in our survey. It was a specific example that showed the relationship between urban-rural migration and agricultural development and at the same time demonstrated enormous potential for future agricultural development in Asian countries. The insight obtained from this survey will be described in detail in the following, followed by a review of challenges of cooperation that may subsequently arise.

#### **1. Insights Obtained from the Survey**

##### **(1) Population of Vietnam: Changes and Outlook**

Population of Vietnam has decreased with total fertility rate (TFR) dropping from 3.6 in 1989 to below the 2.1 replacement level mark in only 16 years, partly as a result of policy efforts made by the government. In this sense, population program itself has brought about significant results as Vietnam attained the so-called demographic transition whereby population shifts from high fertility/high mortality to low fertility/low mortality after going through a high fertility/low mortality phase in the shortest period of time among Southeast Asian countries.

Migration from north to south had historically existed in Vietnam to relieve the high population pressure of northern Red River Delta. While migration changed its style to a government-planned migration after the Vietnam War, repeated attempts to resolve the high population pressure in the north had been made over a long period of time. This environment concerning population had existed at the backdrop of population policy and program and their acceptance in Vietnam.

Whereas Vietnam's population policy produced significant results, it is necessary to consider two aspects of population issue in view of the intrinsic qualities of population.

Firstly, Vietnam's population will continue to grow for several decades despite the decline in fertility owing to population momentum which is property of population that requires considerable amount of time for total population to start declining after the fertility declines. Therefore, the country's population is estimated to increase by 1.5 times from the present 85 million to 120 million by 2050. At the same time, rapid decline in fertility will bring about rapid changes in population structure.

Population normally experiences a period in which the population in economically active age increases in percentage while that of elderly and young dependent population decreases in the process of demographic transition whereby transition is made from high fertility/high mortality to low fertility/low mortality after passing through a phase of high fertility/low mortality. This period known as "demographic bonus" is considered as a favourable opportunity for national development because of high percentage of population in economically active age. While it also has a risk of creating a cause of instability unless proper economic policy is adopted during this period by producing a large number of young and lively population without jobs, there is no doubt that utilization of labour force population during this period would offer a perfect opportunity for economic takeoff of developing countries.

However, this period of demographic bonus is followed by one-sided increase in elderly population and results in aging society with a falling birthrate. Many countries in Asia including Vietnam are currently entering this demographic bonus period. Judging solely from the aspect of population, the next several decades will indeed be the period offering potential for greatest economic development in the history of Vietnam. Elderly dependent population will rapidly increase after the demographic bonus considering the background behind rapid decline of TFR. In this sense, the period until 2030 when the percentage of population in economically active age reaches its peak will be the almost only opportunity available for building the foundation of future development.

## **(2) History of Vietnam's Agricultural Policy**

We must begin by reflecting on the impact of Vietnam War when examining the history and challenges of Vietnam's agricultural policy. The impact can be sorted into two points. Firstly, the environment of mountain regions in Vietnam deteriorated significantly by the bombing of Ho Chi Minh Trail and destruction of forests by Agent Orange and flame throwers during the Vietnam War. Top soil was eroded due to loss of soil cover and the area turned into barren land. Secondly, an extreme rice self-sufficiency policy was implemented under the strong initiative of the government after the Vietnam War as a measure against starvation. This led to planting of rice without any regard for geographic

and environmental conditions and resulted in collapse of farm management and exhaustion of agricultural production base. As mentioned in the main text of this survey, Doi Moi policy was initiated in response to these conditions.

### **(3) Background of New Agricultural Cooperatives**

We visited new types of agricultural cooperatives in this survey. The Vietnamese word for agricultural cooperative is “Hop Tac Xa Nong Nghiep” which is same as the name for cooperatives in the past. However, the cooperative we studied was completely different from those we had seen in the past. In this study, we analyzed the movement of organizing agricultural cooperatives and its background as well as its specific activities. The movement towards organization originated from changes on Vietnam’s agricultural policy to enable actual ownership of large land parcels by cooperatives at the backdrop of trend toward a market economy seen in Doi Moi policy in an effort to develop the conditions for creating efficient agriculture. Large land ownership by cooperatives and protection of their land title offered investment incentive for urban residents and realized flow of funds to rural areas.

Activation of new cooperatives has the potential for playing the role of reviving agriculture in Vietnam considering the fact that state-managed farming system has not functioned in the past. In addition, support programs for agricultural activities performed on land abandoned by state farms that failed and land bombed during the Vietnam War would bring about increase in employment absorption capacity of agriculture for the purpose of securing jobs for retired military personnel.

In view of aforementioned points, the movement of cooperative formation in Vietnam is expected to play an important role in the development of not only agriculture but the entire economy. The subject of this survey can be regarded as one of the signs of economic development in Vietnam that offers a successful example of cooperative formation in rural areas and the potential it demonstrates.

### **(4) New Agricultural Cooperative: Potential of Cooperative Activities as Seen from International Situation**

While we mainly studied the cooperative activities for fruits in this survey, the farming system which can be referred to as “new cooperative scheme” is not limited to fruit growing. The survey team took particular note of rubber planting by the cooperative. Sufficient productivity was not realized for rubber when it was grown at state-managed farms because of management problems. The case of rubber planting at this cooperative is generating profit under the mechanism of complete market economy. However,

activation of farming organization based on Doi Moi is not the only reason behind this success. At the backdrop was an economic environment in which Vietnam became the rubber supply base for the Chinese market. It enabled Vietnam to reap the fruit of Chinese economic growth thanks to the increase in demand for tires owing to China's rapid economic development. One can see the importance of the role played by cooperatives in the agricultural sector as an industry-fostering measure in meeting the tight demand for rubber.

#### **(5) New Agricultural Cooperative: Significance and Role in Agricultural Development**

As mentioned earlier, the example of cooperative we have seen can be characterized as that showing the potential of agricultural development not only in abandoned state-managed rubber plantations but in all regions that were devastated by Vietnam. We have discovered through our field survey that proper utilization of agricultural technology and formation of recycling agriculture centred around organic fertilizers that we saw in this cooperative gives birth to healthy fruit farms. Moreover, it has a potential of leading to agricultural development such as starting a rubber plantation after the successful operation of the cooperative. In this sense, it can be positioned as a concrete and substantial precedent for poverty reduction by offering an example of rural development based on dissemination of recycling agriculture. Moreover, it can be regarded as a program for reducing greenhouse effect gas such as carbon dioxide in the context of Kyoto Protocol as creation of rubber plantation in regions that lost oil cover can be interpreted as tree planting. The cooperative has included the sales of global warming gas emission credit into its business perspective in addition to sales of rubber raw material and would also have importance in this regard. Cooperative fruit and rubber production is expected to be fully effective in projects for forest regeneration and for addressing social problems such as employment for war veterans and support for the poor.

U.N.'s Clean Development Mechanism (CDM) in global warming gas emission trading issue is attracting much attention. As indicated in the principle of official development assistance outline (so-called ODA Outline), the subject of our survey has the potential of becoming an extremely important example of a project that "actively contributes to stabilization and development of developing countries through ODA" and at the same time "deeply connected to securing safety and prosperity of our country while promoting the interest of our people."

#### **(6) As an Example of Agricultural Development in Indochina**

Lastly, we must touch on the possibility of the development technique employed in the subject of our survey leading to agricultural development in countries that share borders



with Vietnam such as Laos and Cambodia. There is no question that wars and revolutionary movements in Indochina caused devastation of development, particularly agricultural development, in Laos and Cambodia in the same manner they did in Vietnam. The example of our survey in Vietnam suggests the possibility of agricultural development project in Indochina intended for reduction of global warming gas and is worthy of note as a form of agricultural development that would have different effect from mere production of agricultural crops. Like Vietnam, there are many regions remaining in Laos and Cambodia that had been bombed by the U.S. and agricultural development remains severely stagnant. It must be added that the results of this survey would also serve as a specific example of support activity for these regions.

## **2. Possible Challenges of Cooperation in the Future**

There are various forms of agricultural assistance in accordance with the agricultural development scheme in Vietnam described in the preceding section. The first of such form is the direct cooperation of carrying out poverty reduction program through investment and loans to cooperative that are working towards forest regeneration. According to the knowledge obtained in this field survey, rubber trees cannot be harvested for several years after planting and requires production of farm crops that can be harvested after 1 year such as longan and herbs to secure income during that period. Whether it is a long-term assistance leading to rubber cultivation or a short-term financial assistance for supporting fruit cultivation, it will be necessary to create a system for furnishing funds to agricultural cooperatives.

There are also cases for building schools intended for training agricultural engineers and dissemination of technology for which Japan can provide assistance and cooperation including technical cooperation in the agricultural sector. It is also possible to establish a foothold for strengthening the relationship with Japan by training experts for establishment of cooperatives at the same time.

These possibilities for specific technical cooperation only represent one of the ways for supporting cooperatives in Vietnam. Various forms of study-based cooperation can be considered in view of farming formats implemented by cooperatives that we saw in this survey. The issues come down to how to go about positioning this example of rural development in Vietnam as an ODA matter and setting up concrete assistance plan for agricultural development within the systematic development strategy. We hope that the results from this survey would produce concrete results and deepen the partnership between Japan and Vietnam.

# Appendix: Survey Member, Cooperator, Itinerary and Collected Material

## 1. Survey Committee

### (1) National Committee

Dr. Kawano Shigeto	Emeritus Professor, The University of Tokyo
Dr. Hara Yonosuke	Director, Institute of Oriental Culture, The University of Tokyo
Dr. Fukui Seiichi	Professor, Graduate School, Kobe University
Dr. Akihiko Ohno	Professor, Aoyama Gakuin University
Mr. Michio Ozaki	Executive Director/ Secretary General, APDA (Asian Population and Development Association)
Mr. Kusumoto Osamu	Assistant Secretary General/ Senior Researcher, APDA
Mr. Takemoto Masanori	Researcher, APDA

### (2) Survey Member (December 18, 2005-August 31, 2005)

Dr. Seiichi Fukui	Survey Team Leader
Dr. Akihiko Ohno	Survey Team Member
Mr. Kusumoto Osamu	Survey Team Member
Mr. Takemoto Masanori	Survey Team Member

## **2. Cooperators**

### **Embassy of JAPAN in Vietnam**

1. Mr. TAKIGAWA Takuya      Second Secretary

### **Vietnamese Association of Parliamentarians for Population and Development (VAPPD)**

1. Dr. Nguyen Van Tien      Executive Director
2. Mr. Nguyen Hoang Mai      Officer
3. Ms. Vu Binh Minh      Expert

### **General Statistical Office (GSO), Department of Population and Labour Statistics**

1. Mr. D. B. Huong      Director
2. Mr. Nguyen Van Phai      Deputy Director

### **Ministry of Agriculture and Rural Development, Department of Cooperatives and Rural Development**

1. Ms. Chu Thi Hao      Deputy Director General
2. Mr. Ngo The Hien      Head of Division
3. Ms. Phung Thi Dinh      Deputy Head of Division

### **Ministry of Labour, Invalids and Social Affairs (MOLISA)**

1. Mr. Nguyen Ngoc Quynh      Deputy Director General, Department of Overseas Labour
2. Ms. Le Kim Dung      Deputy Director, International Cooperation Department

### **United Nations Population Fund**

1. Mr. Ian Howie      Representative in Vietnam
2. Ms. Tran Thi Van      Assistant Representative
3. Ms. Do Thi Minh Chau      National Programme Officer

### **United Nations Development Programme**

1. Mr. Nguyen Tien Phong      Assistant Resident Representative/ Head, Poverty and Social Development Cluster
2. Mr. Junichi Imai      Programme Officer, Poverty and Social Development Cluster

### **Angian University**

1. Dr. Vo Thon Xuan      Rector
2. Mr. Vo Lam      Director, Integrated Rural Development Research Center

3. Mr. Nguyen Thanh Son      Lecturer, Department of Social Science and Natural Resources
4. Mr. Nguyen Huu Tri      Lecturer, Integrated Rural Development Research Center
5. Ms. Tran Nhut Phuong Dum      Lecturer, Integrated Rural Development Research Center
6. Mr. Vo Duy Thanh      Researcher, Integrated Rural Development Research Center

#### **T Agricultural Cooperative**

1. Mr. Tan      Chief of Cooperative
2. Mr. Thu      Chief of Control Department
3. Mr. Cnoi      Chief Accountant
4. Mr. Loc      Vice Chief of Cooperative
5. Mr. Dun      Vice Chief of Cooperative
6. Mr. Hai      Director of Rubber Factory

#### **Ho Chi Minh City Farmers Club**

1. Mr. Le Duy Minh      Chairman of club
2. Mr. Tran Quoc Dung      Vice Director  
Saigon Plant Protection State Limited Company

### 3. Survey Schedule

- 18-Dec-05 (Sun) \* 11:00 flight from Narita, JAPAN (VN 955) 15:10 arrive at Hanoi (Ohno, Kusumoto, Takemoto)
- 19-Dec-05 (Mon) \* 9:30-11:00 Visit to Vietnam Statistics Bureau to collect data materials, especially Macroeconomic data, Population Statistics, Human Development Reports, and others related to Social Development Statistics and Reports.  
\* 12:00-14:00 Collect Materials at Vietnam Development Information Center, etc.  
\* 16:00-17:30 Visit to the Japanese Embassy of Vietnam. Briefing by Mr. TAKIGAWA Takuya, Second Secretary, on Recent Vietnamese Agricultural Situation and the Japanese Cooperation for Vietnam.
- 20-Dec-05 (Tue) \* 9:30-11:00 Visit to the Ministry of Agriculture and Rural Development. Briefing by Staff on the present situation of Vietnamese Agriculture and Village economy.  
\* 11:30-12:30 Visit to the Hô Market to research a circulation of vegetables and fruits in Hanoi.  
\* 14:00-15:00 Visit to the Ministry of Labour, Invalids and Social Affairs (MoLISA) - Vietnam. Briefing by Staff on laws and regulations regarding labour movement, and inflow of labour power.  
\* 15:30-16:30 Collect Materials at Vietnam Development Information Center, etc.  
\* 17:00-18:00 Consultation with Dr. Nguyen Van Tien, Chief Secretary, VAPPD. Briefing on the policies and recent trends on the domestic migration.
- 21-Dec-05 (Wed) \* 9:30-10:45 Visit to the UNFPA Vietnam Office. Briefing by UNFPA staff on the Vietnamese population trends and challenges.  
\* 11:00-12:30 Visit to the UNDP Vietnam Office. Briefing by the UNDP staff on present situation and economy in the local area, based on the social development in Vietnam.  
\* 13:00-14:00 Collect Materials at UNFPA Library etc.
- 22-Dec-05 (Thu) \* 9:00-12:00 Visit to Ha Tay, the suburban area around Hanoi, to see residence for planned migration workers.  
\* 13:00-15:00 Collect Materials at GSO, UNFPA, UNFPA Library etc.  
\* 10:30 flight from Osaka, JAPAN (VN 941) 14:05 arrive at Ho Chi Minh City (Fukui)
- 23-Dec-05 (Fri) \* 10:00 Flight from Hanoi (VN217) 12:00 Arrive at Ho Chi Minh City (Ohno, Kusumoto, Takemoto)

- \* 13:00-14:30 Briefing to Research Assistants on the purpose and overview of the survey mission and field survey.
  - \* 17:30-18:00 Consultation with Dr. Vo Tong Xuan, Rector of Angiang University on the field survey.
  - \* 18:00-20:30 Move from the Ho Chi Minh City to the Binh Phuoc Province.
  - \* 20:30-22:00 Visit to the T Agricultural Cooperative. Briefing with Chief of Cooperative, Mr. Tan on the Labour Movement and the Cooperative Activities.
  - \* 22:00-24:00 Move from the Binh Phuoc Province to the Ho Chi Minh City.
- 24-Dec-05 (Sat)
- \* 8:00-11:00 Move from the Ho Chi Minh City to the Binh Phuoc Province.
  - \* 11:00-12:00 Briefing with Staff of the T Cooperative on management of the Cooperative and etc.
  - \* 13:30-15:30 Briefing with Mr. Tan, Chief of Cooperative of the T Agricultural Cooperative, on the migration from Mekong Delta and the background and the history of the Cooperative.
  - \* 15:30-16:30 Visiting to planting area in the targeted Area.
  - \* 17:00-19:00 1st Meeting with Team Member to review each questions and its implication of the questionnaire survey.
  - \* 20:00-21:00 2nd Meeting with Team Member to review each questions and its implication of the questionnaire survey.
- 25-Dec-05 (Sun)
- \* 9:00-10:00 Briefing with Research Assistants on the meanings and implications of questionnaire survey.
  - \* 10:00-12:00 Hands-on training for Hearing Survey with Research Assistants
  - \* 13:30-18:00 Hearing survey at the target Area.
- 26-Dec-05 (Mon)
- \* 9:00-13:00 Hearing survey at the target Area.
  - \* 14:00-17:30 Hearing survey at the target Area.
  - \* 14:00-17:30 Visit to the dry fruits factory & the organic fertilizer facility owned by the Cooperative. Briefing on the factory & facility by the chair of the Cooperative.
- 27-Dec-05 (Tue)
- \* 9:00-13:00 Hearing survey at the target Area.
  - \* 14:00-17:30 Hearing survey at the target Area.
  - \* 10:00-15:00 Visit to the Rubber factory at Tay Ninh Province. Briefing on the Rubber processing and the Rubber industry in Vietnam by the factory manager.
- 28-Dec-05 (Wed)
- \* Hearing survey at the target Village.
  - \* 9:30-12:00 Consultation with Dr. Vo Tong Xuan, Rector of Angiang

- University on the overview of Vietnamese agriculture after the Vietnam War.
- \* 13:30-15:30 Briefing with Mr. Tan, Chief of Cooperative of the T Agricultural Cooperative, on the migration from Mekong Delta and the background and the history of the Cooperative.
- 29-Dec-05 (Thu) \* Hearing survey at the target Village.
- \* Move from the Binh Phuoc Province to the Ho Chi Minh City
- 30-Dec-05 (Fri) \* 10:00-12:00 Visit to the Ho Chi Minh City (HCMC) Farmers Club. Briefing from Mr. Le Duy Minh, Chairman of the HCMC Farmers Club on the activities and its history of HCMC Farmers Club.
- \* 12:30-13:30 Consultation with Dr. Vo Tong Xuan, Rector of Angiang University on the Vietnamese Agriculture.
  - \* 14:00-16:00 Collect Materials
  - \* 23:40 Flight from Ho Chi Minh City (VN940) for Osaka (Fukui)
  - \* 23:55 Flight from Ho Chi Minh City (VN950) for Narita (Ohno, Kusumoto, Takemoto)
- 31-Dec-05 (Sat) \* 06:35 Arrive at Osaka (JAPAN) (Fukui)
- \* 07:25 Arrive at Narita (JAPAN) (Ohno, Kusumoto, Takemoto)

#### 4. Collected Material

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4. *Results of the 2001 Rural, Agricultural and Fishery Census*, General Statistical Office(GSO), Statistical Publishing House, 2003.
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15. *The 2004 Vietnam Migration Survey: Major Findings*, General Statistics Office (GSO) and United Nations Population Fund, Statistical Publishing House, 2005.
16. *Result of the Survey on Households Living Standards 2002*, General Statistics Office (GSO) and United Nations Population Fund, Statistical Publishing House, 2004.
17. *Participatory Poverty Assessment: Ho Chi Minh City*, Trinh Ho Ha Naghi, Huynh Thi Ngoc Tuyet with additions from Bill Tod, Save the Children Project Office, Ho Chi Minh City and Representative Office, Hanoi, 2003.
18. *Operations and Maintenance of Commune and Village Infrastructure*, Nguyen Kim Long and VICA Consultants Ltd., Ministry of Planning and Investment Partnership to Assist the Poorest Coomunes (PAC), 2004.
19. *Participatory Poverty Assessment: Mekong Delta*, United Nations Development Programme and Australian Agency for International Development(AusAID), 2003.
20. *Participatory Poverty Assessment: Red River Delta, Ha Tay and Hai Duong*, Rural Development Services Centre (RDSC) and The World Bank in Vietnam, 2003.
21. *Regional Poverty Assessment: Red River Delta Region*, Rural Development Services Centre (RDSC) and The World Bank in Vietnam, 2005.
22. *Fish Marketing and Credit in Vietnam* (FAO Fisheris Technical Paper 468), Audun Lem, Uwe Tietze, Erhard Ruckets and Raymon can Anrooy, Food and Agriculture Organization of the United Nations, 2004.
23. *Vietnam's Economy in 2004: A Reference Book*, Central Institute for Economic Management, Science and Technics Publishing House, 2005.
24. *Vietnam Achieving the Millennium Development Goals*, Socialist Republic of Vietnam, 2005.
25. *Linking Economic Growth and Poverty Reduction: Large-Scale Infrastructure in the Context of Vietnam's CPRGS (GRIPS Development Forum)*, National Graduate Institute for Policy Studies, GRIPS Development Forum and Japan Bank for International Cooperation, Hanoi Representative Office, 2003.
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