

CHAPTER IV

CHARACTERISTICS OF THE STUDY AREA

Content of this chapter relates to descriptions of the study area that include general information, characteristics of natural resources such as land, water and forestry, and socio-economic situation. Beside the characteristics of the study area, background of the surveyed households is also presented in this section.

4.1 General characteristics

4.1.1 *Geography and natural condition*

Vietnam is located in the Southeast Asia, from 8.30^0 to 23.22^0 north latitudes and 102.10^0 to 110^0 east longitudes. It borders on the People's Republic of China to the north, Laos People's Democracy Republic to the West, Kingdom of Cambodia to the southwest, and the Gulf of Tonkin and South China Sea to the east with 3,444 kilometers of coastal length. Vietnam lies on the tropical and monsoonal region with hot, rainy season (mid-May to mid-September) and warm, dry season (mid-December to mid-March). With total area of 329,560 square kilometers, of which nearly 80 percent is hilly and mountainous areas and the population of 79.9 million people on 10 Oct. 2002 - the day of Vietnam annual population statistics, Vietnam has the advantages in agricultural development. However, Vietnam has a limited land resource relative to its population. The population density is about 242 people km^2 , which is comparable to that of the Philippines, and twice that of Thailand. This comparison however understates scarcity of land in Vietnam.

Bacgiang is the province of midland and mountains, located in the northeast of Vietnam, adjacent to the economic hubs of the north. Provincial capital is 50 kilometers far from Hanoi to the south and 110 kilometers from Huu-Nghi-Quan border pass with China to the north and, is not far from the seaports such as Haiphong

and Quangninh. These advantages create favorable conditions for trade and economic development.

Located in northern midland, hilly and mountainous region so climate of Bacgiang province is characterized by four specific seasons i.e. spring, summer, autumn, and winter. Average annual temperature is 23.5 °C. It is coldest in December, January and February (about 18.8 °C), and the hottest month is June (27.8 °C). There are about 1,500-2,000 annual sunshine hours and 100 rainy days with average annual rainfall of 1,321 mm. The rainfall is highest during June, July and August. The humidity is usually more or less than 80 percent.

4.1.2 Population and labor characteristics

Bacgiang province is home to more than 1.52 million people, of which majority is Kinh (Vietnamese) ethnic group, occupying 86.4 percent, Nung (3.5 percent), Tay (1.9 percent), Sanchi (1.2 percent), Chinese (1.1 percent), Sandiu (1.1 percent), Dao (0.4 percent), Muong (0.1 percent) and others (Bacgiang Statistics Department, 2002). The population density in the province is 394 people km⁻², which is over 1.5 times higher than that of the country (242 people km⁻²).

Lucngan is the largest among the ten districts of the province, accounting for about 26.5 percent of the provincial natural area, but the population occupies about 12.5 percent of the provincial population. Sondong is most thinly populated district of the province with the density of 81 people km², followed by Lucngan district with 198 people km². Almost all districts with thinly populated density have high proportion of hilly and mountainous area that is suitable for litchi growth such as Lucngan, Sondong, Lucnam and Yenthe. The population distribution of the province is presented in Table 2.

Bacgiang's 870,000-strong labor force equivalent to 57 percent of the total population is mostly from rural areas while only 10 percent of which is vocationally trained. It is estimated that, by the year 2005, the labor force will be supplemented by

130,000 people and the rate of trained laborers will reach 25-30 percent in order to actively participate in the cause of industrialization and modernization of the local economy.

Table 2 Distribution of population in Bacgiang province in 2000

District	Natural area (km ²)	Population (people)	Population density (people km ⁻²)
Bacgiang town	32.2	94,755	2,943
Lucnan	1,012.2	190,395	198
Lucnam	596.9	197,950	332
Son dong	844.3	68,153	81
Yenthe	301.0	89,961	299
Hiep Hoa	201.1	206,764	1,028
Langgiang	245.8	192,570	783
Tanyen	203.7	160,578	788
Vietyen	171.4	154,408	901
Yendung	213.4	162,537	762
Total	3,822.0	1,522,807	398

Source: Bacgiang Statistics Department, 2002

4.2 Natural resources

4.2.1 Land resources

Bacgiang has 382,196 ha of natural land, of which 32.4 percent is dedicated to agricultural production; 28.9 percent to forestry land; 24.6 percent to urban, specialized and housing lands, and the 21.3 percent remaining is unused land. This resource is a favorable condition for the development of industry, agriculture, forestry and aquaculture. Concerning about agricultural lands, the districts considered to have high potentials are Sondong, Lucnan, Lucnam and Yenthe with the excesses of 0.1 ha capita⁻¹. Especially, forestland also distributes mainly in those districts with about 94 percent of the total provincial forest area. The district with highest forest land potential is Sondong (0.574 ha capita⁻¹), followed by Yenthe, Lucnam and Lucnan

with 0.165, 0.133 and 0.127 ha capita⁻¹, respectively (Table 3). The completion of the new National Highway 1A on the one hand helps meet the need of transportation and on the other hand creates a large land area for the development of industries and services of the province.

Bacgiang's agricultural land beside the task of ensuring food security is also suitable for the development and supply of different kinds of vegetables and fruits to Hanoi and neighboring provinces. The province has also planned to transform thousands ha of uncertain paddy fields into growing fruit trees, industrial plants and aqua-products.

Table 3 Land use in Bacgiang province in 2000 (Unit: ha)

District	Natural area	Types of land use					Agri.* land person ⁻¹	Forest* land person ⁻¹
		Agri. land	Forest land	Specialized land	Housing land	Unused land		
Bacgiang town	3,195	1,781	98	668	436	212	0.019	0.001
Lucngan	101,223	20,742	24,261	21,651	1,566	33,003	0.109	0.127
Lucnam	59,690	20,063	26,337	6,144	1,437	5,710	0.101	0.133
Son dong	84,432	8,593	39,125	8,287	722	27,705	0.126	0.574
Yenthe	30,102	9,502	14,817	2,315	806	2,661	0.106	0.165
Hiephoa	20,132	13,480	194	3,077	1,728	1,653	0.065	0.001
Langgiang	24,575	15,311	2,271	3,930	1,316	1,747	0.080	0.012
Tanyen	20,374	12,341	772	2,805	1,288	3,169	0.077	0.005
Vietyen	17,135	10,581	733	2,634	1,066	2,121	0.069	0.005
Yendung	21,338	11,307	1,998	3,391	1,252	3,390	0.070	0.012
Total	382,196	123,701	110,606	54,902	11,617	81,371	0.081	0.073

Source: Bacgiang Statistics Department, 2002; (*) Calculation

4.2.2 Water resources

Bacgiang has a great potential of water resources. Three large rivers flowing through the provincial territory, namely Cau, Thuong, and Lucnam with the total of 347 km length, supply water demands for the production and consumption of people in the province. On the other hand, the area of ponds, lakes and lagoons accounts for 16,300 ha, and nearly 10,000 ha of lowland fields that are reservoirs to store a great amount of water for agricultural production and aquaculture of the province.

4.2.3 Forestry resources

This is also one of the substantial resources for socio-economic development. However, this resource is exhausted gradually. According to the result of forestry statistics at present, the province has about 97,975 ha forestland, of which natural forest accounts for about 65.7 percent of forestland. The capacity of the standing trees is estimated about 2.9 to 3.5 million cubic meters. Beside that, there are more than 458 million bamboo trees that supply fuel wood for the local people.

4.3 Socio-economic situation

4.3.1 Economic structure and growth

It can be seen in Table 4 that economic growth of Bacgiang province in recent years is quite high and stable with the rates of 6.2 percent (in 1999), 7.3 percent (in 2000) and 7 percent (in 2001). However, the provincial economy bases mainly on agriculture with a share of 50 percent of annual GDP that is relatively high as compared with that of the whole country, 25 percent (Ministry of Fisheries, 2001). In general, industry sector occupies a small proportion of the GDP (14-15 percent). The service sector accounts for over 35 percent of the GDP. The shifting of economic structure of the province in recent years (1999-2001) seems to be slow.

Table 4 Economic structure and GDP growth of Bacgiang province

Sector	Unit	1999	2000	2001
GDP (at constant price in 1994)	million VND	2,462,556	2,642,698	2,828,016
Growth rate	%	6.2	7.3	7.0
GDP (at market price)	million VND	3,296,551	3,536,037	3,913,808
Agriculture (at market price)	million VND	1,672,910	1,763,437	1,952,125
Share of GDP	%	50.8	49.9	49.9
Industry (at market price)	million VND	462,009	518,994	574,526
Share of GDP	%	14.0	14.7	14.7
Services (at market price)	million VND	1,161,592	1,253,606	1,387,157
Share of GDP	%	35.2	35.5	35.4

Source: Bacgiang Statistics Department, 2002

4.3.2 Infrastructure

The province's transportation system comprising roads, railroads and river-ways is allocated conveniently. Important routes such as 37, 31, 279 have been upgraded; by the end of the year 2000, the new National Super Highway 1A was completed, creating even better conditions for economic exchange. The three railroad routes and three big rivers (Thuong, Cau and Lucnam) passing through the province jointly form a smooth transportation network.

Bacgiang's electricity system ensures needs of production activities and people's life. Up to now, one hundred percent of districts and town, and 215 out of 227 communes in the province have had access to the national electricity grid.

4.3.3 Agricultural production

Agricultural system in the study area has been set up based on the characteristics of its natural condition and topography. Similar to other northern provinces, Bacgiang's agricultural system consists of the two major components, crops and livestock. But the difference from the others is that the development of fruit trees is

being more prioritized than the other crops in which litchi has emerged as a main fruit tree of the province in recent years.

Bacgiang's terrain is divided into two clear biological regions, midland and mountainous, suitable for the development of a diversified agriculture. In 2001, apart from two main food crops (rice and maize) with annual production of 550,000 tons, Bacgiang also affirmed a strongly-developed farm economy with the on-going formation of the north's largest concentrated fruit area that produces litchi, pineapples, longan, persimmon, custard apple, etc. on an area of some 35,000 ha of fruit trees that generated about a great deal of 50,000 tons of various fruits, in which litchi output reached more than 30,000 tons. Bacgiang also has advantages in annual industrial crop like peanut, soybeans, sesame, tobacco, etc. that provide an annual volume of 11,000 tons of peanuts, over 7,000 tons of soybeans and nearly 1,000 tons of material tobacco (Bacgiang Statistics Department, 2002).

Animal husbandry occupies 33 percent of the value of agricultural components with 12,000 buffaloes, 70,000 cows, nearly 740,000 pigs, 7,500,000 poultry and 6,526 ha for fish raising with an annual output of 56,000 tons of pork, over 12,000 tons of poultry meat and nearly 5,000 tons of fish and aqua-products (Bacgiang Statistics Department, 2002).

4.3.4 Industry and others

Except for the large-scale Habac Nitrogenous Fertilizer and Chemical Factory, the province's sector of industries, small industries and handicrafts remains modest and has not developed in line with available potentials and strength in geography, land and labor force. At present, there are 57 state owned enterprises, 154 private owned enterprises and 202 co-operatives in different fields such as fertilizer production, processing agricultural and forestry products, construction materials, chemicals, consumer goods, mineral exploitation, fine arts and handicrafts, etc. These enterprises are mostly small and medium ones, employing more than 20,000 people.

Dinh Tram Industrial Zone is located on an area of 101 ha in Vietyen district. This site has a very favorable traffic condition: adjacent to the national highway, railway station and 47 kilometers from Hanoi. The power and water supplies for the industrial zone are always ensured.

As a link between Red River Delta region and northern mountainous regions, Bacgiang has favorable conditions for the exchange and development of trade and services. Advantages in transportation with a network of roads, railroads and riverways connecting to domestic and foreign economic centers like Hanoi, Haiphong, Quangninh and China, facilitate the formation of a trade center here.

4.4 Characteristics of the surveyed households

Being the locations of hill and mountain where both ethnic minorities and majority living together, so the differences of education, family size, production experience, litchi cultivation practices, life styles, etc. were not far. Even some parents of ethnic minority children did not teach them to speak their own languages since the area is located not far from Hanoi capital (about 90 km). Background information of the respondents is presented in Table 5.

4.4.1 Family size

Commonly, there are three generations living together under one roof in rural areas in Vietnam. There were the families separated into 2-3 households but living on one piece of land. Number of members in the selected households varied from 2 to 8 with an average size of 5.05 people. This figure in the Kinh (Vietnamese) group was 4.94 that was lower than that of other ethnic minorities (5.24) but not statistically significant. The number of workable labors in the households varied from 2 to 7 with an average of the workable of 3.16. This figure was 3.25 in the Kinh group that was higher than that of other ethnic groups (3.0) but not statistically significant. In other words, average family size in the ethnic minorities was greater than that of the Kinh group but the average workable was in the contrary.

4.4.2 Education

Regarding the schooling attainment, 100 percent of the household heads were literate with an average level of class 6.85 of formal education, equivalent to the last secondary school year in the education system of class 10. Of this, Kinh ethnic group was 7.28 higher than that of other minority groups, 6.11 years. This mean difference is 5 percent statistically significant. In general, the schooling level of the selected household heads in the study area were quite good as compared with that of the whole country as well as other mountainous areas.

4.4.3 Litchi production experience

Litchi has been cultivated primarily in Lucngan district since the 1960s, so the number of years of farmers' experience in litchi production was relatively long as compared with those of other districts in the province. It ranged from 5 to 34 years with an average of 14.48. Average years of experience in the Kinh group were 15.41 while this figure in other ethnic minorities was 12.83. This difference is statistically significant at 1 percent level of significance.

Table 5 Farm household's characteristics.

	Member (person)	Age (year)	Farm labor (person)	Education (year)	Experience (year)
Min	2.0	21.0	2.00	2.00	5.00
Max	8.0	73.0	7.00	10.00	34.00
Average	5.1	42.6	3.18	6.83	14.82
SD	1.2	9.9	1.42	2.28	6.57

Source: Survey, 2002

4.4.4 Agricultural land holding

Land is considered as the most important property of the farmers. In the study area, land was assigned to the households for long-term use. Difference from the

study area and the Red River Delta is that land in the area was allocated unequally per capita, the land was allocated based on the using demand, since about 10 years ago land fund in the area was available but now it becomes limited. From the survey, it was found that the agricultural land holding by the surveyed households varied from 0.27 ha to 2.84 ha. Average agricultural land size per household was 0.96 ha, of which fruit trees accounted for about 79.6 percent and paddy land was 20.4 percent. In 2002, agricultural land size per household in the study area was greater than that of the whole country. Average agricultural land per surveyed farm was 1.5 times higher in comparison to that of the whole country, while this figure of fruit tree area was over 16 times higher than the whole country average. However, average paddy land holding per capita and per farm household among the sampled farms were 82 and 62 percent of those of the whole country, respectively (Table 6).

Table 6 Agricultural land holding and allocation

Land type	Surveyed farms			Country average*	
	% of area	per capita (m ²)	per farm h.hold (m ²)	per capita (m ²)	per farm h.hold (m ²)
Rice	20.4	386	1,949	470	3,120
Fruit tree	79.6	1,508	7,613	71	475
Total agri. land holding	100	1,893	9,560	1,080	6,100

Source: Survey, 2002; * (Ministry of Agriculture and Rural Development, 2002)

4.4.5 Structure of household income

Almost all the respondents are living in hilly areas so the income sources mainly came from agricultural performances (96 percent), only few percent was from off-farm activities (4 percent). With regards to the activities in the surveyed households, preliminary findings showed that all of the surveyed households were involved in litchi growing; 19 percent had no paddy land; 93.7 percent had income from raising livestock; and 66.3 percent had no other income sources except from litchi, rice and livestock.

Average income per capita from litchi growing was 3,938 thousand VND year⁻¹, equivalent to 68 percent of total income; from rice, 641 thousand VND (11 percent); from pig breeding, 997 thousand VND (17 percent); and from other activities, 231 thousand VND (4 percent). Concerning about the output, average litchi output per household was 6,317 kg that was relatively high as compared to rice (1,798 kg) and pork (453 kg). Therefore, litchi was considered as the main income source of the households (Table 7).

Table 7 Sources of the household income

Index	Gross output (kg)			Value of Products (,000 VND)				
	Litchi	Rice	Pig	Rice	Litchi	Pig	Others	Total
Per household	6,317	1,798	453	3,235	19,887	5,033	1,166	29,322
%	n.a	n.a	n.a	11	68	17	4	100
Per capita	1,251	356	89	641	3,938	997	231	5,806

Source: Survey, 2002