

**Sustainable Management of Natural
Resources in Central Vietnam**



Report

Socio-Economic Baseline Survey for the Project Districts of Tuyen Hoa and Minh Hoa, Quang Binh Province

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September 2004



Sustainable Management of Natural Resources in Central Vietnam

Project implemented by GFA



German Technical Cooperation

SOCIO-ECONOMIC BASELINE SURVEY (REVISED REPORT)

**for the
Project Districts
Tuyen Hoa and Minh Hoa
Quang Binh Province**

Prepared by:
Bui Dung The

on behalf of



SEPTEMBER 2004

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PREFACE

The project “Sustainable Management of Natural Resources in Central Vietnam” is co-funded by the Governments of Vietnam and Germany, and implemented by the People’s Committee of Quang Binh and – on behalf of the German Development Cooperation (GTZ) - by the German consulting firm GFA terra systems. As designed, the project includes two three-year phases, Phase I: 2004- 2007; Phase II: 2007-2010. The project implementation just started in April 2004. The target area of the project includes the provinces of Quang Binh, Quang Tri and Thua Thien Hue, Central Vietnam. During Phase I, the project implementation is targeted at the mountainous districts of Tuyen Hoa and Minh Hoa, Quang Binh province.

As mentioned in the Terms of Reference (Annex 1), the general objective of the Socio-economic Baseline Survey was to produce, in a scientifically and methodologically sound way, empirically representative baseline data on the current socio-economic conditions of the target group household in the two districts of Tuyen Hoa and Minh Hoa, Quang Binh province. The survey fieldwork was undertaken in August 2004.

Staff of the project, concerned offices of the two districts, and the selected communes have been involved in the implementation of the survey. We appreciated the time and efforts they put into the survey. We would like to express our thanks to the respondents for the cooperation. We wish to thank Mr. Trang Hieu Tuong and Mr. Doan Ngoc Luong for their fruitful cooperation in the implementation of the survey and for their valuable comments and inputs to this report. Our special thanks go to the Chief Technical Advisor, Dr. Hans J. Wiemer, who has provided comments and technical support in the survey design and the preparation of this report.

We wish for a fruitful implementation of the project, Sustainable Management of Natural Resources in Central Vietnam, and hope that the project will be well managed to benefit the target population.

Bui Dung The

TABLE OF CONTENT

Preface	i
Table of content	ii
List of tables	iii
List of figures	iii
List of annex tables	iv
I. INTRODUCTION	1
1.1 Sustainable Management of Natural Resources in Central Vietnam project	1
1.2 Survey objectives	1
II. SURVEY DESIGN AND IMPLEMENTATION	1
2.1 Determining the measurement indicators	1
2.2 Determining the sample size and selecting the sample	2
2.3 Questionnaire design	4
2.4 Fieldwork	4
2.5 Data entry and analysis	4
III. MAJOR FINDINGS	5
3.1 Households resources for livelihood	5
3.2 Household income by source	8
3.3 Household income by gender and ethnic group	14
IV. CONCLUSIONS AND RECOMMENDATIONS	18
4.1 Conclusions	18
4.2 Recommendations	20
ANNEXES	
Annex 1: Terms of References	23
Annex 2: Project Planning Matrix	24
Annex 3: The Sample of the survey	28
Annex 4: Household resource for livelihood	30
Annex 5: Household income by source	41
Annex 6: Household income by ethnic group	53
Annex 7: Questionnaire	60
Annex 8: List of survey enumerators	75
Annex 9: List of reference materials	75

LIST OF TABLES

Table 3.1	Selected demographic characteristics of sampled households	5
Table 3.2	Land resources of sampled households	6
Table 3.3	Important production assets of sampled households	7
Table 3.4	Important durable appliances of sampled households	7
Table 3.5	Outstanding loan of sampled households	8
Table 3.6	Food shortage and income of sampled households	9
Table 3.7	Income from animal husbandry of sampled households	12
Table 3.8	Forestry and fishery income of sampled households	13
Table 3.9	Selected socio-economic characteristics of sampled households by ethnic group in the two district of Tuyen Hoa and Minh Hoa	15
Table 3.10	Income of sampled households by source and ethnic group in the two district of Tuyen Hoa and Minh Hoa	16
Table 3.11	Selected socio-economic characteristics of sampled households by ethnic group in the two selected communes of Thanh Hoa and Thuong Hoa	17
Table 3.12	Household income by source and ethnic group in two selected communes of Thanh Hoa and Thuong Hoa	17

LIST OF FIGURES

Figure 3.1	Income of sampled households by source	10
Figure 3.2	Agricultural income of sampled households	11
Figure 3.3	Income from crop production of sampled households	12
Figure 3.4	Income from trading, agro-forestry product processing and other income generating activities	14

LIST OF ANNEX TABLES

Annex Table 3.1	Interviewed household by commune and ethnic group	28
Annex Table 3.2	Interviewed households by villages	29
Annex Table 4.1	Demographic information of the sampled household in Tuyen Hoa and Minh Hoa	30
Annex Table 4.2	Land use of sampled households in Tuyen Hoa and Minh Hoa	31
Annex Table 4.3	Land use of sampled households in Tuyen Hoa	32
Annex Table 4.4	Land use of sampled households in Minh Hoa	33
Annex Table 4.5	Production assets of sampled households in Tuyen Hoa and Minh Hoa	34
Annex Table 4.6	Production assets of sampled households in Tuyen Hoa	35
Annex Table 4.7	Production assets of sampled households in Minh Hoa	36
Annex Table 4.8	Durable appliance of sampled households in Tuyen Hoa and Minh Hoa	37
Annex Table 4.9	Durable appliance of sampled households in Tuyen Hoa	38
Annex Table 4.10	Durable appliance of sampled households in Minh Hoa	39
Annex Table 4.11	Outstanding loan of sampled households in Tuyen Hoa and Minh Hoa	40
Annex Table 5.1	Food security and income of the sampled households by commune in the two districts of Tuyen Hoa and Minh Hoa	41
Annex Table 5.2	Income of sampled households by income source	42
Annex Table 5.3	Income of sampled households in Tuyen Hoaby income source	43
Annex Table 5.4	Income of sampled households in Minh Hoa by income source	44
Annex Table 5.5	Agricultural income of sampled households in Tuyen Hoa and Minh Hoa	45
Annex Table 5.6	Agricultural income of sampled households in Tuyen Hoa	46
Annex Table 5.7	Agricultural income of sampled households in Minh Hoa	47
Annex Table 5.8	Forestry and fishery income of sampled households in Tuyen Hoa and Minh Hoa	48
Annex Table 5.9	Forestry and fishery income of sampled households in Tuyen Hoa	49
Annex Table 5.10	Forestry and fishery income of sampled households in Minh Hoa	50
Annex Table 5.11	Household income from trade, agro-forestry and fishery processing and other income generating activities in Tuyen Hoa and Minh Hoa	51
Annex Table 5.12	Household income from trade, agro-forestry and fishery processing and other income generating activities in Tuyen Hoa	51
Annex Table 5.13	Household income from trade, agro-forestry and fishery processing and other income generating activities in Minh Hoa	52
Annex Table 6.1	Selected socio-economic characteristics of sampled household in Tuyen Hoa and Minh Hoa by ethnic group.	53
Annex Table 6.2	Income of sampled households in Tuyen Hoa and Minh Hoa by source and ethnic group	54
Annex Table 6.3	Income of sampled households in Tuyen Hoa by source and ethnic group	55
Annex Table 6.4	Income of sampled households in Minh Hoa by source and ethnic group	56
Annex Table 6.5	Selected socio-economic characteristics of sampled household by ethnic group in Thanh Hoa and Thuong Hoa communes	57
Annex Table 6.6	Household income by source and ethnic group in two selected communes of Thuong hoa and Thanh Hoa	58
Annex Table 6.7	Household income by source and ethnic group in Thanh Hoa commune, Tuyen Hoa district	58
Annex Table 6.8	Household income by source and ethnic group in Thuong Hoa commune, Minh Hoa district	59

1. INTRODUCTION

1.1 Project “Sustainable Management of Natural Resources in Central Vietnam”

The project “Sustainable Management of Natural Resources in Central Vietnam” is co-funded by the Governments of Vietnam and Germany, and implemented by the People’s Committee of Quang Binh and – on behalf of the German Development Cooperation (GTZ) - by the German consulting firm GFA terra systems. As designed, the project includes two three-year phases, Phase I: 2004- 2007; Phase II: 2007-2010. The project implementation started in April 2004. The target area of the project includes the provinces of Quang Binh, Quang Tri and Thua Thien Hue, Central Vietnam. During Phase I, the project implementation is targeted at the mountainous districts of Tuyen Hoa and Minh Hoa, Quang Binh province.

The overall goal of the project is to improve the living conditions of the population in the mountainous area of the project target provinces of Quang Binh, Quang Tri and Thua Thien Hue in accordance with a stabilization of the ecology. The project purpose is that the stakeholders in the project region manage their natural resources in a sustainable way.

The project has four results as follows:

1. Community-based village development planning (VDP), including sustainable natural resource management, is implemented and monitored by the stakeholders and officially recognized as a planning method.
2. Partner organization and target group are supported in the development, application and dissemination of more productive and ecologically sustainable farming systems.
3. Participatory allocation of barren and forestland as well as the development and application sustainable community-based forestry are supported.
4. Income opportunity from the processing and marketing of agricultural and non-timber forest products are supported, providing equal opportunities for men and women.

1.2 Survey objectives

As mentioned in the Terms of Reference (see Annex 1), the general objective of the Baseline Survey was to produce, in a scientifically and methodologically sound way, empirically representative baseline data on the current socio-economic conditions of the target group household in the two districts of Tuyen Hoa and Minh Hoa, Quang Binh province. The survey is related to relevant indicators in the Project Planning Matrix (see Annex 2).

2. SURVEY DESIGN AND IMPLEMENTATION¹

2.1 Defining the measurement indicators

The question “what is to be measured?” is determined by the survey objective and usually answered in terms of variables or indicators. This survey is to relate specifically to the re-

¹ In designing this survey, interests and information needs by the ABD-financed project “Central Region Livelihood Improvement” (CRLIP) in Quang Binh province have been explored and accommodated. Necessary collaborations with the ongoing farming systems analysis have been made to avoid duplication.

levant indicators in the Project Planning Matrix. This refers in particular to indicator No.1 on the project purpose level (livelihood), to indicator No.3 of Result 2 (net farm income) and notably to indicator No.2 and No.3 of result 4 (income from off-farm activities, and its gender-specific distribution).

Livelihood indicators used in this survey are based on the survey objective and the concept of Sustainable Livelihood (SL). The SL concept is a broad concept. It was first proposed by Robert Chambers and Gordon Conway in 1992. More recently, in the late 1990s, the Institute for Development Studies (IDS) and the British Department for International Development (DFID) have been putting into operation the SL concept and approach. The modified definition of SL states that

“A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base.” (Krantz, 2001).

The SL Framework is built around five principal categories of livelihood assets. These include financial, human, social, natural, and physical assets. The framework is graphically depicted as a pentagon to underline their interconnections and the fact that livelihoods depend on a combination of assets of various kinds, and not just from one category. Financial assets refer to the financial resources available to people that provide them with different livelihood options. Human assets include the skills, knowledge, ability to work and good health that enable individuals to pursue different livelihood strategies. Natural assets include the natural resource stocks from which resource flows useful for livelihoods are derived (i.e. land, forest, water, and wider environmental resource values). Social assets or the social resources upon which people draw in pursuit of livelihoods (e.g. networks, membership of groups, relationships of trust, access to wider institutions of society) and political assets, that determine the ability to influence decision-making. The SL framework is not intended to be comprehensive; it varies depending on the situation. In many cases the division between the different assets is more theoretical than practical, with substantial overlaps occurring.

In this survey the measurement unit is the household. Therefore, the livelihood indicators are those at the household level, such as household human resources (household members, age and education of the household head), household financial assets (income generating activities, income flow, credit, production assets, and appliances), and the natural and physical assets (land, forest, crops, livestock, poultry). The social assets are more relevant to the community level and mostly available at the statistical yearbook of the districts. It should be noted that the income indicators refer to net income, and that non-marketed products, labor and services were monetarized at current market prices.

2.2 Determining sample size and selecting the sample

Sample size

The sample size required for a given survey is determined by its measurement objectives. Given the measurement objectives, for surveys designed to measure either changes in indicators over time or differences in indicators between areas, the required sample size for a given indicator depends on several factors such as the population characteristics, availability of resources for the survey. Before work can start on determining the sample

size, information must be assembled on population of the survey. We can use the standard formula² to calculate sample size requirement for indicators that are expressed as means or total like this survey. However, the difficulty in using the formula is that it requires information on the standard deviation of the indicator being used in the sample size calculation. Given this constraint, the sample size has been determined based mainly on the assessment of the heterogeneity of the population, the number of indicators, and the availability of resources.

The two target districts of the project, Tuyen Hoa and Minh Hoa, consist of 36 communes with 282 villages. To justify the sample size it is relevant to briefly describe the socio-economic condition of these two districts. The socio-economic and natural conditions are heterogeneous between the two districts and the communes.

Tuyen Hoa district has 20 communes with a total population of about 78,500. Aside from the Kinh, the majority, there are four ethnic minorities (Ma Lieng, Chut, Sach, and Muong) living in the area with a population of 584 people, representing less than 1 % of the district's total population. Most of them live in Lam Hoa commune (357 people) and Thanh Hoa commune (138 people). According to poverty criteria of Ministry of Labour, Invalid and Social Affairs (MOLISA), it is reported that as of 31 March 2004 on average for the district, about 25% of the households are under the poverty line. The poverty incidence varies greatly across the communes, ranging from 4.8 % in Dong Le town to 61 % in Lam Hoa commune.

Minh Hoa district is administratively organized into 16 communes. The district population is about 44,000 people. The ethnic minorities living in the district include Khua, May, Sach, Ruc, Tho and Arem, with a population of 6,828 people, representing about 16 % of the district's total population. Most minority people are found living in the communes of Dan Hoa, Trong Hoa, Hoa Son, and Thuong Hoa. The average poverty incidence of the district is – according to the recent data of MOLISA – 39 %. The commune with lowest poverty incidence of about 15 % is Quy Dat town. Six communes have a poverty rate of higher than 50 %. Trong Hoa and Dan Hoa are the two poorest communes of the district with a poverty incidence of about 87 %.

Given the socio-economic conditions of the two districts, the survey objective, and the available resources, the sample size has been identified in a conventional way. The sample size was to be large enough to be representative for the heterogeneous population. Without the initial data necessary to calculate the sample size for household survey, normally a sample size equivalent to 2-5 % of the population is chosen. For this specific survey, a sample of about 3 % of the total population has been identified. This resulted in a sample size of 850 households. The number of completed interviews was 842, as presented in Annex 3.

Selecting the sample

First, the communes of each district were stratified into groups, based on several criteria, such as poverty, accessibility, range of income generating activities and ethnicity. It was found that there is strong correlation between these criteria. The communes with a high poverty incidence are also those with low accessibility, with a limited range of income generating activities, and with a high percentage of minority people. After the stratification, the population of each commune group was calculated. The selection of the representa-

² See Magnani (1997) for detailed explanations and example

tive communes for each group was done in consultation with the project staff and project partners at the districts who have been working in the area for years and have good knowledge of the communes.

The number of respondent households for each commune was calculated in a way to ensure that the sample is proportionate to the proportion of the population that each subsample was representative for. From each selected commune, two or three villages are chosen in consultation with the commune collaborator. The selection of respondent households was made randomly, based on the household list of the selected villages. The sample is presented in Annex 3. The procedure to select the sample as described ensured that the sample could adequately represent the population in the project area, given the survey objectives.

2.3 Questionnaire design

Based on the TOR and the measurement indicators identified, a draft questionnaire was designed and sent to project staff for comments. It then was revised for pre-test. The pre-test was done in combination with a training for enumerators of the two districts. They were either statistical cadres or budget accountants of the communes. The consultant, project staff and the enumerators carried out eleven pretest-interviews. After the pretest-interviews, discussion of how to improve the draft version of the questionnaire was held. The questionnaire was then finalized. The draft final-questionnaire was sent to the project Chief Technical Advisor for comments.

The questionnaire used in the survey can be found as Annex 7 to this report. The questionnaire includes several sections. Section 1 covered the demographic characteristics of the household. Section 2 focused on access to land and land use of the household. Section 3 focused on the income sources of the household. Section 4 aimed at housing characteristics, production assets, and durable appliances, reflecting the material standards of living of the household.

2.4 Fieldwork

The fieldwork, interviewing respondents, was undertaken by the local enumerators who had attended the interview training. Each enumerator was to interview respondents in his/her communes. On average, each enumerator made 65 interviews. The project staff supervised the fieldwork and provided timely assistance for the enumerator whenever necessary. The fieldwork took about two weeks, starting 12 August. All completed questionnaires were collected and kept at the project office in Dong Hoi.

2.5 Data entry and analysis

Data entry was done by the project staff using Excel software. It took about two weeks to complete data entry. The consultant designed the data entry heading/indicators in the spreadsheet and explained to the project staff the meaning of each heading and how each heading related to the questions in the questionnaire.

Data analysis was done by the consultant. The result is tabulated and attached to this report as Annex 4, 5, and 6.

3. MAJOR FINDINGS

3.1 Household resources for livelihood

Human resources

For the whole sample, the average household size is 4.8 persons and the household's equivalent labor was about 3.1 laborers. The mean age of the household head is 48 years. Most of them attained primary education. Many of them finished primary education through the illiteracy eradication programs offered mainly to the illiterate adults by the government after the liberation in 1975. A number of respondents reported that they had finished the first three grades of primary education a long time ago and now they forget what they had learned. They have become now illiterate, unable to write and read.

Table 3.1: Selected demographic characteristic of sampled households

	Whole sample	Tuyen Hoa	Minh Hoa
Age of HH head (year)	47.9	49.5	45.8
No. HH members (person)	4.8	4.6	5.2
HH labors (labor)	3.1	3.3	2.9
Education of HH head (highest completed grade)	6.4	7.0	5.1

The values of several human asset indicators of the household such as household size, household labor availability, and age of household head are almost the same for the two districts. However, it should be noted that the commune of Trong Hoa where the ethnic minority is the majority has the biggest household size of 6.4 people. As compared to Minh Hoa, the household head in Tuyen Hoa has higher level of educational attainment. The level of education of the household head varies remarkably across the communes. The average level of educational attainment is found to be lowest in the three communes with a large proportion of ethnic people in the population. These are Thuong Hoa and Trong Hoa communes of Minh Hoa district and the commune of Thanh Hoa of Tuyen Hoa district. The average educational level of household head of these communes is 2.8, 2.9 and 4.3 respectively (see Annex Table 4.1).

Land resources

Land is probably the most important physical asset controlled by rural households. Although the project area has a low population density, 31 people per square km in Minh Hoa and 68 people per square km in Tuyen Hoa, the land holding per household is only 0.68 ha. As for Minh Hoa, land holding per household is as low as 0.48 ha, i.e. only about 60 % of that in Tuyen Hoa (0.82 ha). This is due, among other things, to the fact that many households in Thach Hoa and Huong Hoa communes, Tuyen Hoa district, have contracted to protect a large area of protection forest under the 661 program. Obviously, given the current forestry policy the household has no alternative leverage on the forest prior to and after the termination of the contract. However, this forest area has been put in to the "other use" group to reflect the access of the household to non-timber forest products. The land resources in the area have been degraded. About 90 % of household land holding belongs to less productive land of categories 4, 5 and 6.

Table 3.2: Land resources of sampled households

	Whole sample		Tuyen Hoa		Minh Hoa	
	m ²	%	m ²	%	m ²	%
Total land holding	6823.2	100.0	8207.4	100.0	4785.8	100.0
Land quality						
Category 1-3	771.7	11.3	653.3	8.0	946	19.8
Category 4-6	6050.6	88.7	7552.6	92.0	3839.8	80.2
Land use						
Annual crop	1935.1	28.4	1784.7	21.7	2156.5	45.1
Industrial perennial crop	275.7	4.0	450.8	5.5	18.0	0.4
Fruit tree	225.5	3.3	148.1	1.8	339.4	7.1
Aquaculture	171.4	2.5	268.2	3.3	28.9	0.6
Forest	2024.5	29.7	2057.5	25.1	1975.9	41.3
Other use	2191	32.1	3498.1	42.6	267	5.6

For whole sample, more than one fifth of the households' landholding was used for annual crop such as rice, cassava, bean and vegetable. The limited area for food crops coupled with poor soil is one important factor leading to the problem of food insecurity for many household in the area. Land use under forestry accounted for about one fourth and two fifths of the households' landholding in Tuyen Hoa and Minh Hoa respectively. Only a small proportion of the households' landholding is used to grow industrial crops and fruit trees.

A similar picture of land use is observed for Minh Hoa and Tuyen Hoa. Household landholding varies across communes. As mentioned above, the "other use" land is found to be relatively large in Thach Hoa and Huong Hoa commune, Tuyen Hoa district. This is because it includes forest area under forest protection contracts by households in these communes. This implies opportunities for non-timber forest products for people of these two communes. For Huong Hoa, Thanh Hoa and Van Hoa communes, Tuyen Hoa district, the land resources have been so degraded that it is hard to find a piece of land that belongs to a productive land category. Such a condition is also found in Quy Dat, Thuong Hoa, and Xuan Hoa communes, Minh Hoa district (see Annex Table 4.3 and 4.4).

Production assets

The survey collected information on selected production assets of the households. For most rural households, perennial crop garden and working cattle are the most important production assets. About one third of the interviewed households have perennial crop gardens and most of them are in Tuyen Hoa. The average value of the garden was estimated at VND 13.5 million. About 60% of the households have oxen or buffaloes. On average each household has two to three oxen and/or buffaloes. Cattle are used for land preparation, transportation and providing manure for crops. Only 6.6 % of the households have fishponds for aquaculture.

Table 3.3: Important production assets of sampled households*

	Whole sample		Tuyen Hoa		Minh Hoa	
	(1)	(2)	(1)	(2)	(1)	(2)
Perennial crop garden	29.7	13526.4	49.5	13501	0.6	16500
Aquaculture area	6.6	6315.4	8.1	7707.9	4.4	2535.7
Breeding & working cattle	59.8	6899.2	54.8	7221.8	67.2	6512.1
Tractor	1.0	13625.0	1.1	14200.0	0.9	12666.7
Breeding pig	3.7	1309	2.8	1800.8	5	909.4
Milling machine	1.9	8045.6	2.1	9668.4	1.6	4800
Bee nest	4	926.2	3.8	881.9	4.4	983.2
Rice thresher machine	16.2	502.8	14.9	474.1	18.1	537.4
Pesticide sprayer	12.1	79.1	11.3	82.5	13.4	75.0

Note: (1) percentage of household who has the asset

(2) Current value per household who has the asset (VND 1000)

* Trong Hoa commune is excluded due to data missing

Very few households have agricultural machinery. The number of tractors per one hundred households is only one, and that of milling machine, rice thresher machine, and pesticide sprayer is 1.9, 16.2 and 12.1 respectively. It is hard to find a shop or a workshop outside the district capital of Minh Hoa and Tuyen Hoa. This indicates the underdevelopment of the non-farm sector and the poor market development in the area. Limited production assets also imply limited livelihood alternatives. Households in communes inhabited with ethnic minorities such as Thanh Hoa commune, Tuyen Hoa district and Thuong Hoa commune, Minh Hoa district have fewer production assets. For example, out of 13 types of production asset, only two and five of them are found in Thuong Hoa and Thanh Hoa respectively (see Annex Table 4.5, 4.6 and 4.7)

Durable appliances

Table 3.4: Important durable appliances of sampled households*

	Whole sample		Tuyen Hoa		Minh Hoa	
	(1)	(2)	(1)	(2)	(1)	(2)
Television	54.9	1803.2	55.0	2127.6	54.7	1323.1
Telephone	7.5	695.4	10.4	736.3	3.1	495.0
Bicycle	77.0	551.5	74.5	662.8	80.6	400.2
Motorbike	30.8	9591.8	27.4	12076.7	35.9	6804.4
Wardrobes	61.2	1585.8	66.7	1589.8	53.1	1578.6
Table-chair set	76.0	764.6	83.4	886.4	65.0	534.6
Water well	61.7	1425.8	74.3	1401.6	43.1	1487.3
Hygienic toilet	13.0	2128.2	17.6	2298.8	6.3	1420.0

Note: (1) Percentage of household who has the asset

(2) Current value per HH who has the asset (VND 1000)

* Trong Hoa commune is excluded due to data missing

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With regard to durable appliance, the survey collected information on ownership of selected consumer goods (radios, television, bicycle, and motorbike or other vehicles) and other basic living facilities of the household. Somewhat more than half the households in the sample (55 %) owned a television. About two thirds of the sampled households (77 %) have a bicycle and one third (31 %) have a motorbike. The majority of the sampled households have furniture such as wardrobe, table and chair. Only a small percentage (13 %) have a hygienic toilet. The number of telephone per every one hundred households is rather low, 10.3 and 3.1 for Tuyen Hoa and Minh Hoa respectively. None of the interviewed households in the communes of Thach Hoa and Thanh Hoa, Tuyen Hoa district and Yen Hoa commune, Minh Hoa district has a telephone (see Annex Table 4.8, 4.9. and 4.10)

Credit access

The survey also collected information on credit access of the households. For the whole sample about one half of the households (46 %) currently have an outstanding loan with an average value of about VND 4.2 million. The percentage of households with outstanding loan ranged from as low as 15.7 % in Thanh Hoa commune, Tuyen Hoa district, to as high as 81.5 % in Minh Hoa commune, Minh Hoa district.

Table 3.5: Outstanding loan of sampled households

	Whole sample	Tuyen Hoa	Minh Hoa
Total outstanding loan			
% HH with outstanding loan	45.5	37.0	56.4
Average loan (1000 VND)	4289.1	4943.0	3744.8
Production loan			
% HH with production loan	39.6	34.2	46.4
Average loan (1000 VND)	4001.1	4745.4	3303.3
Consumption loan			
% HH with consumption loan	5.6	2.7	9.2
Average loan (1000 VND)	2497.2	2055.9	2663
Other loan			
% HH with other loan	3.5	3.1	4.0
Average loan (1000 VND)	3195	3358.8	3033.6

It should be noted that most households borrowed money for production purposes. The percentage of household with production loan was about 40 %, and the average outstanding production loan was about VND 4 million. While the percentage of household with consumption loans was only about 5.6 %, with an average value of about VND 2.5 million. Communes with less than 25 % of households of outstanding production loan include Thach Hoa, Thanh Hoa, Mai Hoa communes of Tuyen Hoa district and the commune of Trong Hoa of Minh Hoa district. None of the interviewed households in Trong Hoa commune, Minh Hoa district has outstanding production loan (see Annex Table 4.11).

3.2 Household income by source

Food shortage and total income

About one third of the interviewed households suffered from food shortages for a period of three months during the last twelve months. The percentage of households with food shortages was found extremely high, about 82% and 88% in Trong Hoa and Thuong Hoa communes, respectively. In Thuong Hoa the problem of food shortage was more serious, persistent for about 5 months every year. Only Dong Le town was free from the food insecurity problem (see Annex Table 5.1).

Table 3.6 : Food shortage and income of sampled households

	Whole sample	Tuyen Hoa	Minh Hoa
Percentage of HHs with food shortage	29.6	19.5	42.3
Average no. of months with food shortage	3.4	2.9	3.7
Average HH income (VND 1000/year)	10415.4	13114.1	6989.4
Monthly income per capita (VND 1000)	180	239.9	112.8

Household income refers to net income from different sources. For the whole sample, average annual household income was VND 10.4 million, and the respective income per capita was VND 2.1 million per year (140 USD) or monthly income per capita of VND 180 thousand. Household income differed remarkably between the two districts. The average household income of Tuyen Hoa was about VND 13.1 million, almost double that of Minh Hoa (6.9 million).

Within each district, a great variation of household income across the communes was observed. As for Tuyen Hoa district, Thanh Hoa was the commune with the lowest income (monthly per capita of only VND 83 thousand), followed by Thach Hoa and Chau Hoa communes. Dong Le town had highest monthly income per capita of VND 475 thousand, about six times of that of Thanh Hoa commune. The reason for the relatively high income in Dong Le is, among other things, that many people there used to be government officers and now retired and have pension as a stable cash income (see Annex Table 5.1).

As for Minh Hoa district, the commune of Thuong Hoa has the lowest monthly income per capita of VND 50 thousand. Two other communes with monthly income per capita less than VND 100 thousand were the communes of Trong Hoa (VND 71 thousand) and Yen Hoa (VND 94 thousand). Quy Dat, the district town, has the highest level of household income of about VND 11.3 million, but this is still lower the average income of Tuyen Hoa district (see Annex table 5.2).

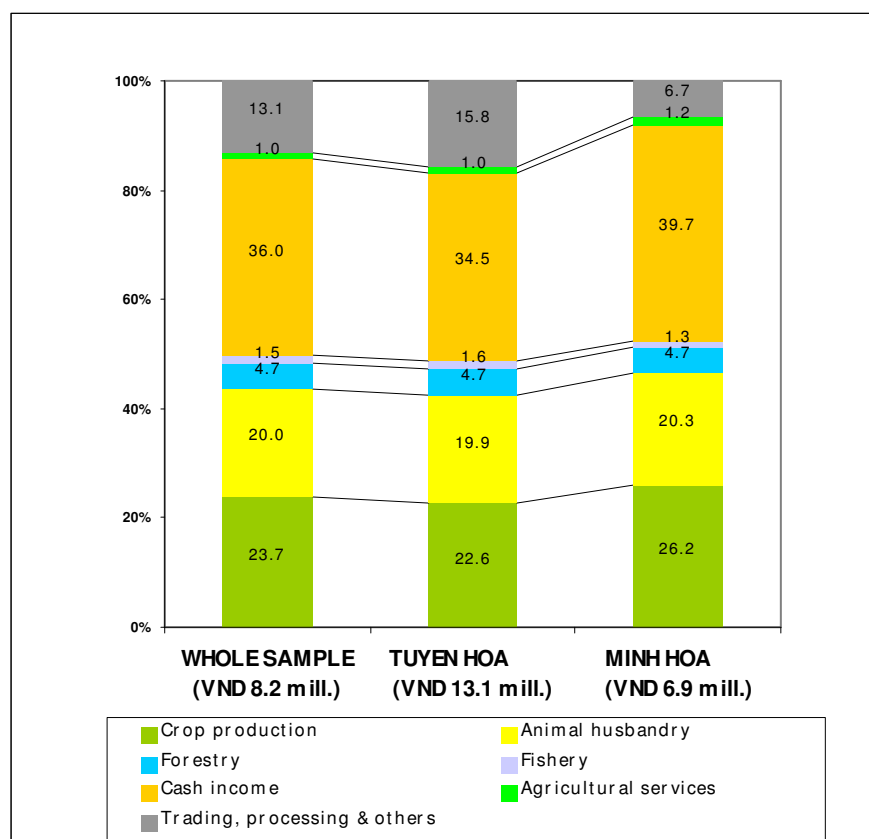
Income by source

In this survey, income generating activities of the households were classified into seven groups/sources. These include (1) crop production, (2) animal husbandry, (3) agricultural services, (4) forestry, (5) fishery, (6) trading, processing of agro-forestry and fishery product and other activities, (7) cash income including labor-wage, pensions, social subsidies, and the like.

For the whole sample, income from agriculture, including crop production (VND 2.5 mill.) and animal husbandry (VND 2.1 mill.), accounted for about one half (44 %) of the household income. For both districts, cash income proved to be an important income for households. Cash income made up to 40 % and 35 % of the household income in Minh Hoa

and Tuyen Hoa respectively. As shown in Figure 3.1, though having different income level, households in the two districts have similar income structure. The three most important income sources that together made up 80 % of the household income were crop production, animal husbandry, and the cash income. Income from agricultural services and forestry accounted for only 7 % of the household income.

Figure 3.1: Income of sampled households by source



It should be noted that income structure, or relative importance of income source, varies across communes within each district. Households in the communes of Van Hoa and Thanh Hoa of Tuyen Hoa district and Minh Hoa and Thuong Hoa communes of Minh Hoa district have less diversified income source (see Annex Table 5.3 and 5.4).

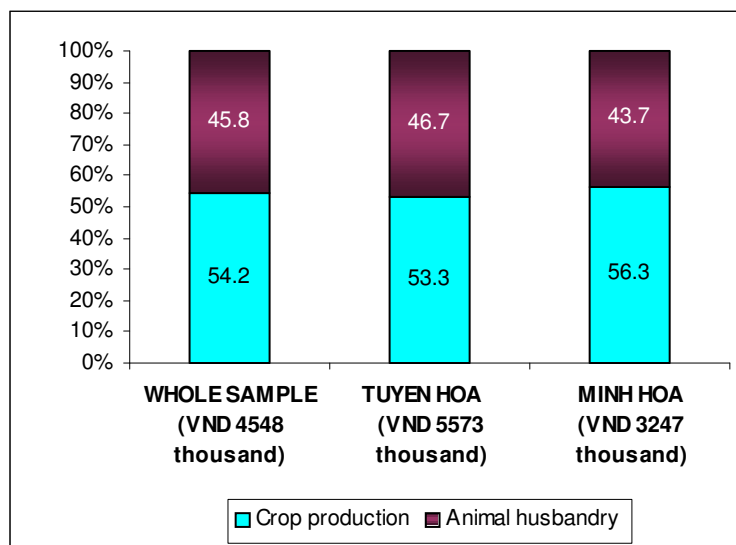
Given the TOR, the survey objective, and the nature of each income source as mentioned above, it is relevant to discuss and break down several income sources (such as crop production, animal husbandry, forestry, fishery, and trade and agroforestry-processing) into sub-sources. For example sub-sources of crop production included food crop, industrial perennial crop and fruit tree.

Income from agriculture

As discussed above, agriculture (crop production and animal husbandry) is the main income source, accounted for about one half (44%) of the household income in the area. As shown in Figure 3.2, the average household income from agriculture of Tuyen Hoa district is VND 5573 thousand, and that of Minh Hoa is VND 3247 thousand. Income from crop

production accounted for 54 % of household income from agriculture; the rest is from animal production. There are a variety of animals raised by households in the area such as ox, buffalo, goat, pig, chicken, duck, honeybee, and silkworm. They were classified into two groups, cattle-pig-goat and poultry-and-other. Income from animal husbandry was more or less on a par with crop production. Cattle and pig appeared an important source for cash income, while poultry was mainly for household consumption.

Figure 3.2: Agricultural income of sampled households

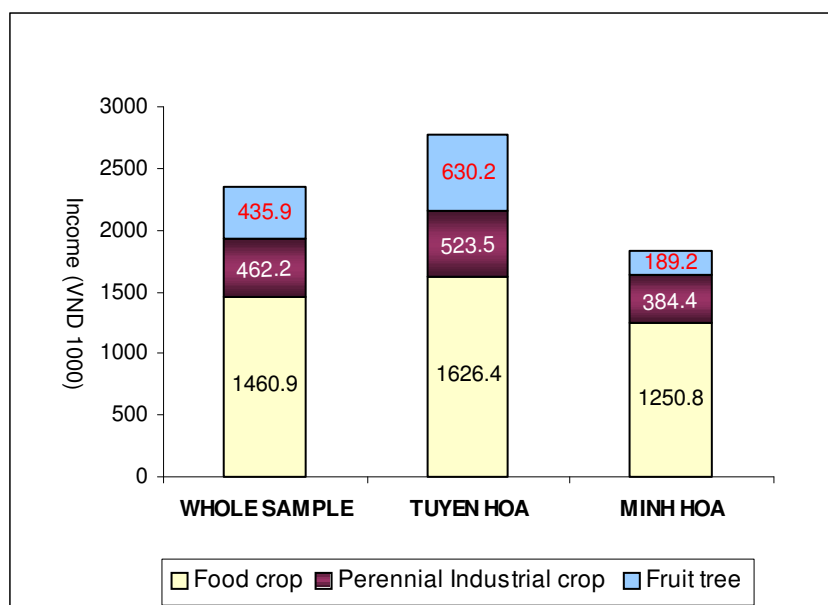


Income from crop production was estimated for each type of crop. As shown in Figure 3.3, for the whole sample, food crops remained an important income generating activity for the households. Income from food crops accounted for about 60% of household income from crop production. Income from perennial industrial crops and fruit trees made up the remaining proportion. It should be noted that given the natural conditions in the area (topography, soil, water, and climate), industrial crops and fruit trees could play an increasingly important role in improving household income (see Annex Table 5.5).

For Tuyen Hoa district, household income from crop production differed in terms of magnitude and composition across the communes. Huong Hoa commune was found to have the highest crop-income of about VND 5.8 million. It is quite special that for this commune, household income from fruit tree had the highest share of 45% in crop-income. Two other communes with relatively high crop income, but less dominated by food crop were Thach Hoa and Van Hoa. It is suggested to explore the experience from these three communes of Huong Hoa, Thach Hoa and Van Hoa to see what had lead to that. With all other communes, crop income was dominated by food crop (see Annex Table 5.6)

For Minh Hoa district, household income from crop production was found to be highest in Yen Hoa commune. Even there, however, the crop-related household income was less than one half of the average crop income in Tuyen Hoa district. Different from other communes in Minh Hoa district, the communes of Yen Hoa and Xuan Hoa have income from industrial crops accounted for a larger share, about one third of all crop income. It should be noted that the income from fruit tree has a remarkably big share for the commune of Trong Hoa (see Annex Table 5.7).

Figure 3.3: Income from crop production of sampled households



With regard to animal husbandry, for the whole sample, average household income from this source was estimated at VND 2087 thousand (about one fourth of total household income). Average household income from animal husbandry of Tuyen Hoa is almost two times of that of Minh Hoa (Table 3.7). Household income from animal husbandry by commune can be found in Annex Table 5.6 and 5.7 to this report. As for Tuyen Hoa district, Dong Le was found to have the highest income from animal production, followed by Huong Hoa. In the case of Minh Hoa, income from poultry-and-other source had a larger share for most communes, except for Trong Hoa and Thuong Hoa.

Table 3.7: Income from animal husbandry of sampled households

	Whole sample		Tuyen Hoa		Minh Hoa	
	VND 1000	%	VND 1000	%	VND 1000	%
- Cattle, pig, goat	867.6	41.9	1030.7	39.6	660.5	46.6
- Poultry and other	1212.9	58.3	1571.9	60.4	757.3	53.4
Total	2086.6	45.8	2603.4	46.7	1417.8	43.7

Income from Forestry and fishery

Forestry income included income from production forest and forestry contracts as well as income from natural forests (mainly non-timber forest products). As discussed earlier, for whole sample income from forestry accounted for less than 5% of the household income. As shown in Table 3.8, for both districts income from natural forests accounted for about 80% of forestry income of the household. This may be due to the fact that income from non-timber forest products from natural forest is quite regular through out the year, meanwhile farmers have income from production forest at the cut year only. However, it should

be noted that there were communes where the household has no direct access to natural forest for non-timber forest products such Dong Le, Van Hoa, Mai Hoa communes of Tuyen Hoa district, and Minh Hoa and Yen Hoa communes of Minh Hoa district (see Annex Table 5.9 and 5.10)

Table 3.8: Forestry and fishery income of sampled households

	Whole sample		Tuyen Hoa		Minh Hoa	
	VND 1000	%	VND 1000	%	VND 1000	%
Forestry	490.7	100.0	619.8	100.0	326.8	100.0
- Planted forest and forestry contract	107.2	21.8	147.2	23.8	56.3	17.2
- Natural forest	383.5	78.2	472.5	76.2	270.5	82.8
Fishery	154.9	100.0	207.6	100.0	88.0	100.0
- Aquaculture	129.9	83.9	206.5	99.5	32.6	37.1
- Natural catch	25.0	16.1	1.1	0.51	55.4	63.0

Studies elsewhere indicate that income from non-timber forest product is really important for rural households, especially the poor. It could help the poor overcome the slack season period when income from other sources is not available. It was also reported by a number of studies that income from non-timber forest products can be improved substantially through market development and marketing support. However, it should be alert that market development and sustainable use and management of this resource should be go hand in hand. It is suggested that an action research on the non-timber forest product harvest and marketing in the area should be carried to explore the possibility to improve income from this source.

Income from fishery, including aquaculture and natural catch, was trivial, accounted for about 2 % of household income. As shown in Table 3.8, fishery income of sampled households was only VND 155 thousand per household per year. Our observation is that potential to increase household income through fishery is limited.

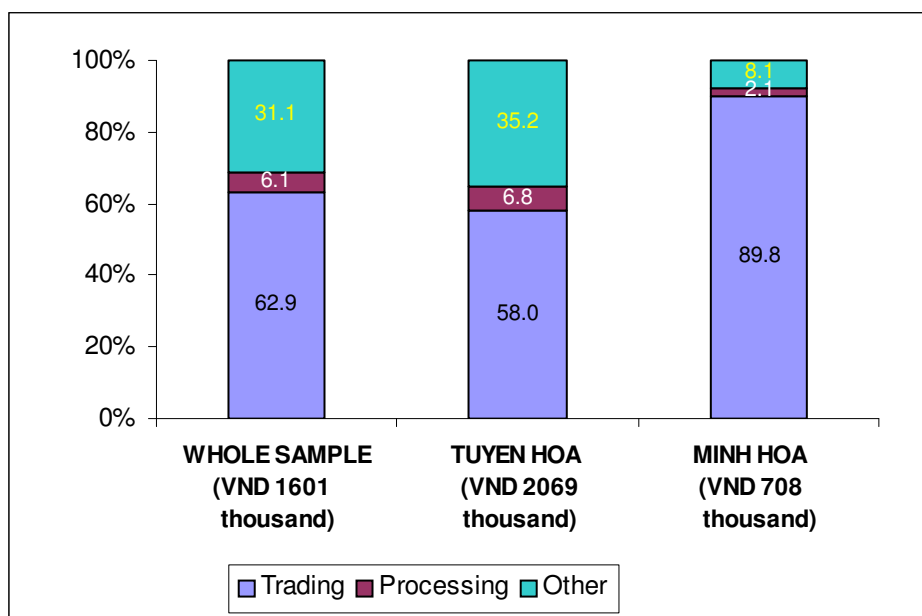
Income from trade, agroforestry processing and other activities

Household income from this source is trivial in the case of Minh Hoa and quite significant in Tuyen Hoa. This reflects higher level of development of Tuyen Hoa as compared to Minh Hoa. For Tuyen Hoa, the average household income from this source was estimated at VND 2.1 million; that of Minh Hoa was only VND 0.7 million. For the district of Tuyen Hoa, income from trading activities accounted for about 60% of total income from trade, agroforestry processing and other activities.

For whole sample, household income from processing of agricultural and forest products is trivial, less than VND 100 thousand. In the case of Minh Hoa district, income from this activity is almost nil. Income from other activities such as sand and gravel extraction, tailoring and embroidery and transport accounted for 31 % of household income from trade, agroforestry processing and other activities. This indicates the availability of non-farm employment opportunities in the area. It is learned from the survey data that for Tuyen Hoa, 25 % of the interviewed households engaged in either trade, processing of agro-forestry

products or other activities. In Minh Hoa, only about 10 % of the interviewed households had income from either trade, processing of agro-forestry products or other off-farm activities.

Figure 3.4: Income from trading, agro-forestry product processing and other income generating activities



Household income from trade, agroforestry processing and other activities was also estimated for each surveyed commune. Income from trading activities (mainly petty trade) was quite significant in the two district towns of Quy Dat and Dong Le and the commune of Huong Hoa (see Annex Table 5.12 and 5.13).

3.3 Household income by gender and ethnic group

Household income by gender

Gender is a crosscutting issue. It is important to see how men and women contribute to the household income. Admittedly, it is very difficult to have income information specific for each gender because what the household earns is actually, in most case, the fruit of the joint effort by women and men in the household. Therefore, household income contribution by gender can be inferred from a gender activity profile of the household. The profile provides information on the labor division between men and women for different income generating activities.

Recently, a study on gender issues was carried out in the districts of Tuyen Hoa and Minh Hoa, Quang Binh province (Nguyen Thi Phuong Hao, 2002). The study covered a wide range of issues related to gender relations, including labor division in domestic work and income generating activities. Therefore, it is appropriate to use the finding from this study to make inference about the income contribution by gender.

This study had made 150 household interviews. It was found that for more than one half of the interviewed households, the husband was the main earner, whilst for only 7% of the

households the wife contributed more to household income than her husband. About one third of the interviewed households reported an equal contribution of husband and wife to the household income. As for agriculture, men and women shared roughly similar tasks and labor. Whereas, forestry activities were found to be a male domain and the division of labor is clearly more to the side of men. With regard to off-farm income, paid job and seasonal employment are normally undertaken by men; petty trading and embroidery, tailoring activities are mostly managed by women. However, it should be noted that women spent almost twice as much time as men undertaking domestic work. Women were found overloaded with work burden.

Given above findings, it is likely that income contribution by men and women is almost the same for the household with agriculture as the major income source. Where income from forestry accounts for a substantial share in the household income, men may be the main income generator. For households with diversified income generating activities, it is hard to make any generalizations. Furthermore, other factors associated with ethnicity in terms of culture, tradition, norm and value system could contribute to shape the activity profile of men and women. This consequently affects the access of men and women to income generating activities.

Household income by ethnic group

As discussed earlier, aside from the Kinh ethnic – lowland Vietnamese – there are several ethnic minorities living in the districts of Tuyen Hoa and Minh Hoa. There are four ethnic minorities (Ma Lieng, Chut, Sach, and Muong) living in the Tuyen Hoa district with a total population of 584 people, representing less than one percent of the district's total population. Most of them live in Lam Hoa commune (357 people) and Thanh Hoa commune (138 people). As for Minh Hoa district, the ethnic minorities living in the district included Khua, May, Sach, Ruc, Tho and Arem, with a total population of 6,828 people, representing about 16% of the district's total population. Most minority people are found living in the communes of Thuong Hoa, Dan Hoa, Trong Hoa, and Hoa Son.

Table 3. 9: Selected socio-economic characteristics of sampled households by ethnic group in the two districts of Tuyen Hoa and Minh Hoa

	Whole sample		Tuyen Hoa		Minh Hoa	
	Kinh	Minority	Kinh	Minority	Kinh	Minority
Age of household head (year)	48.9	42.0	49.9	43.0	47.2	41.7
No. of people per HH (person)	4.7	5.3	4.6	4.4	5.1	5.5
No. of labor per HH (labor)	3.1	2.5	3.4	2.3	3.0	2.6
Education of HH head *	7.1	2.8	7.2	2.2	6.5	2.9
Total land area per HH (m ²)	7148.6	3363	8502.6	2940.8	4968.6	3608.5
Average household income	11453.1	4111.1	13643.2	3675.0	7926.9	4227.1

Note: * Highest completed grade

As shown in Table 3.9 the two groups, Kinh and minority, differ significantly in terms of family labor availability, education of the household head, land holding, and income. For the minority group, on average the household head has not finished primary education, whilst the household head of the Kinh group finished the first two grades of secondary school. For Tuyen Hoa district, landholding of the Kinh is about 0.8 ha, almost three times of that of the minority group. The income gap between the two groups is also large.

Household income of the minority group is less than one third of that of the Kinh. A similar picture is observed in Minh Hoa. The gap between the two groups is still large, but small than what observed in Tuyen Hoa, in both absolute and relative terms.

Income structure also differs between the two groups. For the Kinh, the three most important income sources making up about 80% of the household income are crop production, animal husbandry, and cash income. For the minority, these include the first two sources (crop production and animal husbandry) and forestry. Income from forestry accounted for more than 20% of household income. As discussed earlier, in the area forestry income is mainly from non-timber forest products collected from natural forest. This implies that sustainable management and use of non-timber forest products would improve income of the minority and at the same time contribute to the conservation of natural resources.

Table 3.10: Income of sampled households by source and ethnic group in the two districts of Tuyen Hoa and Minh Hoa

	Kinh		Minority	
	VND 1000	%	VND 1000	%
Crop production	2631.4	23.0	1467.0	35.7
Animal husbandry	2224.7	19.4	1208.2	29.4
Agricultural services	125.4	1.1	0.0	0.0
Forestry	426.7	3.7	879.7	21.4
Fishery	162.4	1.4	109.2	2.7
Trading, processing	1585.4	13.8	27.1	0.7
Cash income	4297.2	37.5	420.0	10.2
TOTAL INCOME	11453.1	100.0	4111.1	100.0

It should be noted that in this survey, about 15% of interviewed households in the sample belonged to the ethnic minorities. It means that the Kinh group dominated the sample. The ethnic minority people live concentratedly in several mountainous communes while the Kinh live in every commune. Therefore, it is not appropriate to classify the sample into two groups, Kinh and ethnic minority and make the comparison between them to see how ethnicity differences affect the household income. The comparison we have made is biased because other non-ethnic factors such natural conditions, accessibility, and the like have contributed to the big gap between the two ethnic groups. To accommodate this, from the sample, two communes – Thanh Hoa commune of Tuyen Hoa district and Thuong Hoa commune of Minh Hoa district – where both the Kinh and the minority lived inter-mixed were chosen for the analysis.

As presented in Table 3.11, the Kinh and the minority in the two selected communes are similar in terms of household size and availability of family labor. However, there exists a mean difference between the two groups in terms of education and age of household head, and household landholding. The Kinh group has a higher educational attainment. In Thanh Hoa, the minority group had larger land holdings, whereas the Kinh were found to have larger landholding in the case of Thuong Hoa. The Kinh group has higher income than the minority group. For the two selected communes as a whole, the average household income of the minority group was about two thirds of that of the Kinh. The income gap was bigger in the case of Thuong Hoa, where the average household income of the Kinh was two times of that of the minority group.

Table: 3.11 Selected socio-economic characteristics of sampled households by ethnic group in the two selected communes of Thanh Hoa and Thuong Hoa

	Both communes		Thanh Hoa		Thuong Hoa	
	Kinh	Minority	Kinh	Minority	Kinh	Minority
Age of HH head (year)	47.5	40.4	48.3	43.0	45.7	38.8
No. of people per HH (person)	4.4	4.5	4.0	4.4	5.3	4.5
No. of labor per HH (labor)	2.4	2.3	2.2	2.3	2.8	2.3
Education of HH head	4.8	2.4	5.5	2.2	3.3	2.6
Total land area per HH (m ²)	2634.8	2989.4	1858.8	2940.8	4342.0	3020.5
Household income (VND 1000)	4355.2	2735.6	4365.5	3675.0	4332.5	2133.5

As shown in Table 3.12, agriculture (crop production and animal husbandry) is the most important income source for both Kinh and minority people in the two communes. The Kinh group had more diverse income generating activities. None of minority households interviewed engaged in either trading or processing of agro-forestry products. Income from non-timber forest products collected from natural forest proved to be an important income source for minority people.

Table 3.12: Household income by source and ethnic group in two selected communes of Thuong Hoa and Thanh Hoa

	Kinh		Minority	
	VND 1000	%	VND 1000	%
Crop production	1205.0	27.7	1173.6	42.9
Animal husbandry	1116.7	25.6	586.6	21.4
Agricultural services	0.0	0.0	0.0	0.0
Forestry	204.1	4.7	461.5	16.9
Fishery	0.0	0.0	0.0	0.0
Trading, processing	800.8	18.4	0.0	0.0
Cash income	1028.6	23.6	514.0	18.8
TOTAL	4355.2	100.0	2735.6	100.0

The findings from the household analysis by ethnic group for the two selected communes where both the Kinh and the minority lived inter-mixed were consistent with the findings from the analysis for whole sample. However, the gap between the two groups was narrower when they live in the same environment. This implies that ethnic factor does matter but not as much as it is often assumed. Other non-ethnic factors such as natural conditions, accessibility, and the like are important determinants of income difference.

IV. CONCLUSIONS AND IMPLICATIONS

4.1 Conclusions

This baseline household income survey was undertaken in the two districts of Tuyen Hoa and Minh Hoa, with a sample of 842 households, about 3.4 % of the total number of households in the districts. The sample was distributed to 40 villages of 13 selected communes. The measurement indicators included household livelihood assets and income. A number of findings have been attained from the analysis of the collected data.

Livelihood assets

The sampled households had limited resources for livelihood and the quantity and quality of household resources differed between the two districts and between the communes. With regard to human assets, on average each household has about 5 people and three labors. Education of the household head is equivalent to grade 6. The educational attainment of the household head varies greatly across communes. In three communes where both Kinh and minority lived inter-mixed – Thanh Hoa, Trong Hoa, and Thuong Hoa – most household heads did not finish primary education.

With regards to land resource, average household landholding was 0.7 ha, allocated to different uses. The land resources in the area have been degraded. About 90% of household landholding is of low quality, classified as land categories 4, 5, and 6. In a number of communes such as Huong Hoa, Thach Hoa, Thuong Hoa, Xuan Hoa, and Quy Dat all interviewed households reported that they did not have any piece of land classified into good land category of 1, 2 and 3. Households in the district of Tuyen Hoa had more land than Minh Hoa. On average, a household in Tuyen Hoa has about 0.8 ha, whilst a household in Minh Hoa has only 0.5 ha.

With regard to production assets, one third of the interviewed households have perennial crop gardens and most of them are in Tuyen Hoa. The average value of the garden was estimated at VND 13.5 million. About 60% of the households have oxen or buffaloes, and on average each household has two to three oxen and/or buffaloes. Only a small proportion of the interviewed households has other production assets such as rice thresher machine, pesticide sprayer, tractor, and the like. Households in communes inhabited with ethnic minorities such as Thanh Hoa commune, Tuyen Hoa district and Thuong Hoa commune, Minh Hoa district have fewer production assets. Out of 13 types of production assets, only two and five of them are found in Thuong Hoa and Thanh Hoa respectively.

As for physical assets such as durable appliance, about three fifths of interviewed households have television, bicycle, wardrobe, table-chair set, and water well. Only 7.5 % of households have telephone and 13 % have hygienic toilets. All interviewed households in Thach Hoa, Thanh Hoa, and Yen Hoa do not have a telephone. It is hardly to find a hygienic toilet in the communes of Thanh Hoa, Thuong Hoa, and Xuan Hoa.

The survey also collected information on credit access of the household. For the whole sample about one half of the household (46%) currently have an outstanding loan with an average value of about VND 4.2 million. The percentage of households with outstanding loan ranged from as low as 15.7 % in Thanh Hoa commune, Tuyen Hoa district, to as high as 81.5 % in Minh Hoa commune of the Minh Hoa district. Four out of 13 surveyed communes have the percentage of households with outstanding production loan less than

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25%. None of the interviewed households in Trong Hoa commune, Minh Hoa district has outstanding production loan.

Household income

With respect to household income, for whole sample average household income was VND 10.4 mill per annum; the corresponding monthly income per capita was VND180 thousand. Households in Tuyen Hoa had an average annual income of VND 13.1 mill., almost two times of that of Minh Hoa (VND 7.0 mill.). All sampled communes in Tuyen Hoa, except for Thanh Hoa, had an average monthly per capita income greater than VND 100 thousand. Whereas three out of six sampled communes in Minh Hoa had an average monthly income per capita less than VND 100 thousand. Food insecurity remained a problem for most communes in the two districts. The problem was more severe in Minh Hoa, where 42 % households suffered from food deficiency for a bout four months every year.

Though having different income level, households in the two district have similar income structure. The most important income sources that together made up 80% of the household income were agriculture (crop production and animal husbandry) and the cash income. Income from agriculture (VND 4.5 mill.) accounted for about one half (44 %) of the household income. Cash income made up to 40 % and 35 % of the household income in Minh Hoa and Tuyen Hoa respectively. Income from agricultural services, and forestry accounted for only 7% of the household income.

As for agriculture, income from animal husbandry was more or less on a par with crop production. Food crops dominated income from crop production. Cattle and pig appeared an important source for cash income, while poultry was mainly for household consumption. Household income from agriculture was estimated for each survey commune.

For whole sample, forestry income, including income from production forest and non-timber forest products from natural forest, accounted for less than 5% of the household income. It should be noted that income from natural forests (VND 384 thousand) made up about 80% of household income from forestry. However, there were communes where the household had no direct access to natural forest for non-timber forest products such Dong Le, Van Hoa, Mai Hoa communes of Tuyen Hoa district, and Minh Hoa and Yen Hoa communes of Minh Hoa district.

Household income from trading, processing of agroforestry products and other income generating activities is trivial in the case of Minh Hoa and quite significant in Tuyen Hoa. This reflects higher level of development of Tuyen Hoa as compared to Minh Hoa. For Tuyen Hoa, the average household income from this source was estimated at VND 2.1 million; that of Minh Hoa was only VND 0.7 million. Household income from processing of agricultural and forest products is trivial, less than VND 100 thousand. In the case of Minh Hoa district, income from this activity is almost nil. Only small proportion of the interviewed households (25% in Tuyen Hoa and 10% in Minh Hoa) engaged in either trade, processing of agro-forestry products or other income generating activities.

With regard to gender, it is hard to make any generalizations. The previous gender study reported that contribution to agricultural income of the household by women was on par with men. However, this was not the case for forestry, which was likely to be a male domain, and the division of labor was clearly more to the side of men. For other income sources, the gender relation was hard to appreciate. Other factors associated with ethnicity in terms of culture, tradition, norm and value system could play an important role in

shaping the activity profile of men and women. This consequently affects the access of men and women to income generating activities.

It was established imperially in the comparative analyses for the two ethnic groups, the Kinh and the minority, above that there is a significantly difference between the two groups in terms of family labor availability, education of the household head, land holding, and income. For minority group, on average the household head has not finished primary education, whilst the household head of the Kinh group finished the first two grades of secondary school. For Tuyen Hoa district, land holding of the Kinh is about 0.8 ha, almost three times of that of the minority group. The income gap between the two groups is also large. Household income for the minority is less than one third of that of the Kinh in the case of Tuyen Hoa, and about one half in the case of Minh Hoa.

The minority group had a lower income than the Kinh. For the two selected communes (Thuong Hoa and Thanh Hoa) as a whole, the average household income of the minority group was about two thirds of that of the Kinh. The gap was bigger in the case of Thuong Hoa; the average household income of the Kinh was two times of that of the minority group. The Kinh have more diverse income generating activities. The minority group is not engaged in trading and processing of agro-forestry products.

Agriculture (crop production and animal husbandry) is the most important income source for households both Kinh and minority in the two communes. The Kinh group had more diverse income generating activities. None of minority households interviewed engaged in either trading or processing of agro-forestry products. Income from non-timber forest products collected from natural forest proved to be an important income source for minority people, but not for the Kinh.

4.2 Recommendations

For project evaluation

With regards to the use of the data from this survey for the evaluation of project impacts and achievement in the future, it is suggested that the future survey sample should be selected based on the sample of this baseline survey so that a panel data set can be created. The panel data set could help to have a proper assessment of the project impact.

The indicator No. 1 on the project purpose level of PMM (see Annex 2) states, *“By 03/2006, at least 50% of the stakeholders, including women and ethnic groups (Kinh and ethnic minorities) at village, commune and district level indicate that their livelihood has substantially improved”*. To know if the livelihood of the project stakeholders has been substantially improved we have to identify how much the increase in the household assets is. This can be done by comparing the level of assets the household has by 03/2006 with the baseline level of assets the household has currently, as measured in this survey and presented in Annex 4.

Indicator 3 of Result No 2 of the PPM (see Annex 2) states, *“Participating households, applying sustainable farming systems, have an increase of net income from farming of at least 5% per year”*. To know if this is achieved, we compare the net income from farming of the household with the baseline farm income level estimated in this survey and presented in Annex 5.

Sustainable Management of Natural Resources in Central Vietnam



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Indicator No. 2 of result No. 4 in the PPM states, “Among the participating households, the additional income increases by 10% annually” (see Annex 2). Additional income from processing and marketing of agricultural and non-timber forest product and its increase rate can be calculated using the annual survey data and the baseline data established by this survey. Household income from non-timber forest products (collected from natural forest) and processing of agricultural and forest products was estimated for both district and each surveyed commune (see Annex Table 5.11, 5.12 and 5.13).

Indicator No. 3 of result No. 4 in the PPM states, “The additional income is distributed about evenly among men and women.” It is admitted that in this survey household income from processing of agricultural and non-timber forest products was not segregated by gender. The level of participation by men and women in income opportunities in processing and marketing of agricultural and non-timber forest products depends on, among other things, the nature of the activity and the process of how the opportunities would be created by the project. It is suggested that to overcome the above mentioned limitation it is important to involve both man and woman in the implementation of the project activities correlated with result No. 4 of the project (see Annex 2).

For project implementation

Given the great heterogeneity in the household assets and livelihoods, the design and implementation of any interventions should be specific for each group of households who may have similar asset portfolio. The “one-size fits all” strategy is unlikely to be effective. The major principle to be followed is that the intervention should be location-specific and should respect the cultural, ecological and economic circumstances of the households and the commune.

Land resources in most sampled communes were degraded. Sustainable management of the resources, including land is of vital importance. However, under such conditions, the win-win situation, increased income and improved land resources, could be challenging because it could be costly and take a long time to restore the degraded resources to be productive. It is thought that PTD (participatory technology development) may be of help. For example, the PTD methods can be used in the development, test, and evaluation of farming systems.

Among the surveyed communes, Huong Hoa was found to have the highest crop-income (about VND 5.8 million) with the highest share (45%) from fruit tree. Two other communes with crop income relatively high, and less dominated by food crop were Thach Hoa and Van Hoa. It is suggested to explore the experience from these three communes of Huong Hoa, Thach Hoa and Van Hoa to see what had lead to that.

As discussed earlier, households in the area have limited access to credit. Four out of 13 surveyed communes have percentage of households with outstanding production loan less than 25%. None of the interviewed households in Trong Hoa commune, Minh Hoa district has outstanding production loan. It implies that technical support alone could not help the household overcome its constraints. Collaboration with other programs such as ADB project to gain synergy effect for common aims, i.e. to reduce poverty, increase food security and achieve environmental protection is of vital importance.

Sustainable Management of Natural Resources in Central Vietnam

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ANNEXES

Sustainable Management of Natural Resources in Central Vietnam

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ANNEX 1: TERMS OF REFERENCES

Economist (Expert on empirical socio-economic research)

The service provider will perform his duties partly in his home office in Hue and partly in the project office in Dong Hoi, Quang Binh, with occasional fieldwork in the project districts.

The Expert will be working under the supervision of the Chief Technical Advisor (CTA) and reports directly to him. In practical terms, the expert will discuss and coordinate his work closely with the responsible project staff assigned to this task. The general objective of the assignment is to produce, in a scientifically and methodologically sound way, empirically representative baseline data on the current socio-economics conditions of the target group households in the two districts of Minh Hoa and Tuyen Hoa, Quang Binh province.

The survey will relate specifically to the relevant indicators in the Project Planning Matrix, as defined in the planning workshop of July 2004. This refers in particular to indicator No.1 on the project purpose level (livelihood), to indicator No.3 of Result 2 (net farm income) and notably to indicator No.2 and No.3 of result 4 (income from off-farm activities, and its gender-specific distribution).

For the measurement of the livelihood indicator the concept has to be broken down into verifiable sub-indicators, according to the academic literature (see 1.e, University of Sussex, England) in order to operationalize the indicator. The income indicator refer to net income and attempt to monetarize (in terms of VND) non-marketed products, labour and services at current market prices. The survey design, the questionnaire, the sampling and the report on all indicators and survey results have to be gender-specific and separate for ethnic groups in the project area.

In designing the survey, the expert will coordinate with the ADB-financed project "Central Region Livelihood Improvement Project" (CRLIP) in Quang Binh province to verify their interest and information needs (and possible contribution) to the survey. The results of the meeting with this project will be documented and signed by the expert.

For the indicators on result No.2 (farming systems), a close collaboration with the ongoing farming systems analysis is necessary to avoid duplication. If possible, part of the two surveys may be done together, using the same field staff during the same period.

After pretest and revision of the questionnaire, the final version of the questionnaire has to be sent to and be approved by the CTA before the commencement of the actual field survey. After submitting the draft report, the major results of the survey have to be presented to the project staff in a short workshop in Dong Hoi. The final version will take all comments of the project staff into account.

The English version of the final report has to be approved by the CTA. If the English language proficiency is considered inadequate, the costs of final editing by a third person may be deducted from the expert's fees. The translation into Vietnamese will be done by the project's own staff.

Sustainable Management of Natural Resources in Central Vietnam

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ANNEX 2: PROJECT PLANNING MATRIX

Summary of objectives	Indicators	Source/Mean of Verification	Assumptions
<p>Overall goal</p> <p>The living conditions of the local population in the mountainous areas of the project region are improved in accordance with a stabilization of the ecology.</p>			
<p>Project Purpose</p> <p>The stakeholders in the project region manage their natural resources in a sustainable way.</p>	<ol style="list-style-type: none"> 1. By 03/2006, at least 50% of the stakeholders, including women and ethnic groups (Kinh and ethnic minorities) at village, commune and district level indicate that their livelihood has substantially improved. 2. Three years after completion of land use planning and land allocation, the forest cover in at least 75 % of the project communes is at least 10 % higher than before. 3. The poverty rate in all communes of the project area decreases steadily. 4. By 03/2005, the dissemination of selected project concepts has effectively started in the neighboring Provinces of Quang Tri and Thua Thien Hue (in short: Hue) on the basis of agreements with the relevant authorities. 5. By 03/2010, the project implementation partners (technical services on provincial, district and communal levels, mass organizations, private sector organizations, etc.) are sufficiently qualified and experienced to render efficient services to target groups. 	<ul style="list-style-type: none"> - Socio-economic Surveys, baseline and annual representative checks - Project M&E, impact monitoring - Land use Survey, Forest Inventory - DOLISA poverty statistics - Workshop documents, Project Agreements, M&E - Qualification of staff, capacity statements 	<ul style="list-style-type: none"> - The political framework conditions will continue to favor decentralization, economic liberalization and environmental concerns. - Investment capital for forest plantations is available from other sources. - No major natural calamities - Authorities and relevant institutions in neighboring Provinces express their demand for dissemination activities by the project.

Sustainable Management of Natural Resources in Central Vietnam

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Summary of objectives	Indicators	Source/Mean of Verification	Assumptions
<p>Result No 1</p> <p>Community-based village development planning (VDP), including sustainable natural resources management, is implemented and monitored by the stakeholders and officially recognized as a planning method.</p>	<ol style="list-style-type: none"> 1. By 10/2004, 50% of the project villages have elaborated or updated VDP, and by October each of the following years, 90% of the project villages have elaborated or updated VDP according to the quality standards defined by the provincial VDP working group. 2. At least 50 % of the planned activities are executed by self-help efforts and/or with external support, thereof at least 30% are given to women's priorities. 3. By 03/2005, VDP is proposed as the official planning method for all districts of the province. 4. The investment needs expressed in VDP/CDP are annually submitted to relevant authorities and respective donors, including the ADB-CRLIP project. 	<ul style="list-style-type: none"> - Project M&E, VDP Reports - Project Documents - Project Documents 	<p>The policy conditions and the planning authorities (MPI, PPC, DPI, DPC) relevant to participatory planning approaches remain supportive.</p>
<p>Result No 2</p> <p>Partner organizations and target groups are supported in the development, application and dissemination of more productive and ecologically sustainable farming systems.</p>	<ol style="list-style-type: none"> 1. By 03/2006, at least 3 sustainable farming systems (flexible modules for upland and lowland conditions) are successfully tested and available for dissemination. 2. By 03/2007, at least 30% of the households in 50% of the project villages have started to apply sustainable farming systems. 3. Participating households, applying sustainable farming systems, have an increase of net income from farming of at least 5% per year. 4. The soil fertility of the agricultural land belonging to participating households is improved or at least maintained on the level before introducing new farming techniques. 	<ul style="list-style-type: none"> - Project Documents - Project M&E, Reports - Household Books, Representative Surveys - Simple Soil Fertility Tests, Baseline and Regular Checks 	<p>Credit from ADB-VBARD or others and agricultural inputs are accessible for the target groups.</p>

Sustainable Management of Natural Resources in Central Vietnam

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Summary of objectives	Indicators	Source/Mean of Verification	Assumptions
<p>Result No 3</p> <p>Participatory allocation of barren and forestland as well as the development and application of sustainable, community-based forestry are supported.</p>	<ol style="list-style-type: none"> By 03/2005, the methods of participatory forestland use planning (LUP) and of forestland allocation (FLA) are approved by the District People's Committees, and applied in selected communes in the project area: (by 03/2005: 40%, by 03/2006: 60%, by 03/2007: 80% and by 03/2007: 100%). Selected project communes that have elaborated the Forest Protection Regulations (FPR) and community-based Forestry Management Plans (FMP) in a participatory way, have submitted them to authorities for approval are: 40% by 12/2005, 60% by 12/2006, 70% by 12/2007 and 100% by 12/2008. Selected project communes that apply at least one sustainable forestland use option are at least 50% by 03/2007 and 100% by 03/2010. 	<ul style="list-style-type: none"> - Project M&E, Reports - Documents of FPR and FMP - Project M&E, Reports 	<p>Relevant authorities issue forestland titles (Red Book Certificates with the names of husbands and wives) with reasonable delay (not later than 3 months after completion of field work and mapping).</p>
<p>Result No 4</p> <p>Income opportunities from the processing and marketing of agricultural and non-timber forest products are supported, providing equal opportunities for men and women.</p>	<ol style="list-style-type: none"> By 03/2007, at least 10% of the households in the project region effectively participate in income generating activities. Among the participating households, the additional income increases by 10% annually. The additional income is distributed about evenly among men and women. By 03/2006, at least 20% of participating households have been assisted in accessing and using short and medium term credit from ADB-VBARD and other financing institutions. 	<ul style="list-style-type: none"> - Baseline and Annual Surveys, Project M&E - Annual Surveys, Project M&E - Annual Surveys, Credit Applications 	<p>Credit from ADB-VBARD or others are accessible for the target groups</p> <p>Mass organization (WU, FU, etc) participates effectively in project implementation.</p>

Sustainable Management of Natural Resources in Central Vietnam

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Activities		
<p>Major Activities of Result No. 1:</p> <ol style="list-style-type: none"> 1.1 Support stakeholders to elaborate community-based VDP/CDP with orientation to natural resources management. 1.2 Support stakeholders to implement and monitor elaborated VDP/CDP. 1.3 Support stakeholders in evaluating VDP/CDP implementation and VDP/CDP establishment for the following year. 1.4 Support relevant organizations in VDP/CDP institutionalization. 1.5 Disseminate VDP/CDP method to other provinces. 1.6 Extract from VDP/CDP village investment proposals and submit them to financing institutions, including the ADB project. 	<p>Major Activities of Result No. 2:</p> <ol style="list-style-type: none"> 2.1 Assess and categorize existing farming systems, including gender-specific tasks and roles. 2.2 Develop, test and evaluate farming systems for sustainability together with target groups. 2.3 Strengthen the capacities of relevant partner organizations in the dissemination of successful farming systems. 2.4 Support relevant partner organizations in the training of target groups on improved farming systems. 2.5 Facilitate the access to inputs required by target groups to apply improved farming systems (ADB credit, seeds, fertilizer and etc.). 	<p>Major Activities of Result No. 3:</p> <ol style="list-style-type: none"> 3.1 Support the application of participatory forestland allocation (FLA) and forestland use planning (LUP) methods. 3.2 Support villages in community-based forest protection management and document the procedures for further dissemination. 3.3 Test and document technical options for forest land utilization on demonstration plots and develop them for further application. 3.4 Support target groups to establish nurseries and other services.
<p>Major Activities of Result No. 4:</p> <ol style="list-style-type: none"> 4.1 Conduct survey on identification of households income in the project area (income sources, structure) 4.2 Support local economic development (LED). 4.3 Support for promotion of business knowledge and skills of local entrepreneurs 4.4 Provide training for project staff and staff of local partners 4.5 Support for value added through processing and marketing of agricultural products and non-timber forest products 4.6 Facilitate the access of participating households to credit and inputs from ADB-VBARD and other sources. 4.7 Support the dissemination of tested production and marketing methods to other districts and provinces. 4.8 Conclude "lesson learn of Result 4" 		<p>General Activities in all Results Areas:</p> <ol style="list-style-type: none"> 1. Establish/operate a flexible and cost-effective organizational and management structure. 2. Exchange and disseminate experiences and know-how in the region. 3. Collaborate with other projects/programs and relevant authorities. 4. Develop/implement an overall training approach and strategy based on expressed demand of partners and target groups. 5. Incorporate project concepts and tools into national/provincial structures. 6. Develop and implement an overall monitoring and evaluation system (M&E) which includes and emphasizes ecological aspects.

Sustainable Management of Natural Resources in Central Vietnam

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ANNEX 3: THE SAMPLE OF THE SURVEY

Annex Table 3.1: Interviewed household by commune and ethnic group

Commune/ DISTRICT	Both	Kinh	Minority
Thach Hoa	68	68	0
Huong Hoa	68	68	0
TT Dong Le	67	67	0
Thanh Hoa	69	44	25
Mai Hoa	69	69	0
Van Hoa	60	60	0
Chau Hoa	70	70	0
TUYEN HOA	471	446	25
Trong Hoa	51	0	51
Minh Hoa	65	64	1
Thuong Hoa	59	20	39
Xuan Hoa	65	64	1
Yen Hoa	65	65	0
Quy Dat	66	64	2
MINH HOA	371	277	94
WHOLE SAMPLE	842	723	119

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Annex: Table 3.2 Interviewed households by villages

DISTRICT/ Commune/Village	No. of sampled households	DISTRICT/ Commune/Village	No. of sampled households
TUYEN HOA	471	MINH HOA	371
Thach Hoa	68	Minh Hoa	65
<i>Huyen Thuy 1</i>	<i>25</i>	<i>Tan Hoa</i>	<i>20</i>
<i>Hong son</i>	<i>25</i>	<i>Kim Bang 2</i>	<i>20</i>
<i>Thiet Son</i>	<i>18</i>	<i>Lac Thien</i>	<i>25</i>
Huong Hoa	68	Thuong Hoa	59
<i>Tan Duc 1</i>	<i>25</i>	<i>Khaj hoa</i>	<i>18</i>
<i>Tan Ap</i>	<i>24</i>	<i>Yen Hop</i>	<i>21</i>
<i>Tan Duc 4</i>	<i>19</i>	<i>On</i>	<i>20</i>
Dong le	67	Xuan Hoa	65
<i>Dong Van</i>	<i>23</i>	<i>Quy hop 3</i>	<i>20</i>
<i>Luu Thuan</i>	<i>25</i>	<i>Cay Da</i>	<i>19</i>
<i>Tieu Khu 4</i>	<i>19</i>	<i>Ba nuong</i>	<i>26</i>
Thanh Hoa	69	Yen Hoa	65
<i>Thanh Lang 3</i>	<i>21</i>	<i>Tan Son</i>	<i>24</i>
<i>Bac Son 2</i>	<i>23</i>	<i>Yen Nhat</i>	<i>21</i>
<i>Ban Ca xen</i>	<i>25</i>	<i>Yen Binh</i>	<i>20</i>
Mai Hoa	69	Quy Dat	66
<i>Bac hoa</i>	<i>30</i>	<i>Dong Hoa</i>	<i>25</i>
<i>Tay Hoa</i>	<i>30</i>	<i>Sat</i>	<i>25</i>
<i>Tan Hoa</i>	<i>9</i>	<i>Minh Phu</i>	<i>16</i>
Van Hoa	60	Trong Hoa	51
<i>Bau</i>	<i>20</i>	<i>La Trong</i>	<i>13</i>
<i>Trung Lang</i>	<i>20</i>	<i>Ong Tu</i>	<i>13</i>
<i>Phuc tu</i>	<i>20</i>	<i>Khe Cay</i>	<i>16</i>
Chau Hoa	70	<i>Ong Hung</i>	<i>9</i>
<i>Uyen Phong</i>	<i>22</i>		
<i>Lam Lang</i>	<i>24</i>		
<i>Lac son</i>	<i>24</i>		

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ANNEX 4: HOUSEHOLD RESOURCES FOR LIVELIHOOD (From Annex Table 4.1 to Annex Table 4.11)

Annex Table 4.1: Demographic information of the sampled household in TUYEN HOA and MINH HOA

Commune/ DISTRICT	Age of HH head (year)	No. HH members (person)	HH labors (labor)	Education of HH head (Highest completed grade)
Thach hoa	50.3	5.8	3.9	7.0
Huong Hoa	45.8	5.0	3.9	6.8
Dong Le	49.1	4.2	3.3	8.3
Thanh Hoa	46.4	4.1	2.2	4.3
Mai Hoa	46.9	4.3	3.4	7.5
Van Hoa	56.3	3.7	2.3	8.3
Chau Hoa	52.9	4.8	3.3	6.8
TUYEN HOA	49.5	4.6	3.3	7.0
Trong Hoa	43.3	6.4	2.7	2.9
Minh Hoa	49.9	5.0	2.9	6.9
Thuong Hoa	41.1	4.8	2.5	2.8
Xuan Hoa	43.4	4.8	2.6	n.a
Yen Hoa	47.6	5.5	3.3	n.a
Quy Dat	48.4	4.8	3.1	7.3
MINH HOA	45.8	5.2	2.9	5.1
WHOLE SAMPLE	47.9	4.8	3.1	6.4

Note: n.a means not available

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Annex Table 4.2: Land use of sampled households in TUYEN HOA and MINH HOA (Household average)

	WHOLE SAMPLE		TUYEN HOA		MINH HOA	
	m ²	%	m ²	%	m ²	%
Total land holding	6823.2	100.0	8207.4	100.0	4785.8	100.0
Category 1-3	771.7	11.3	653.3	8.0	946.0	19.8
Category 4-6	6050.6	88.7	7552.6	92.0	3839.8	80.2
Annual crop	1935.1	28.4	1784.7	21.7	2156.5	45.1
Category 1-3	715.9	37.0	636.4	35.7	833.0	38.6
Category 4-6	1219.2	63.0	1148.4	64.3	1323.5	61.4
Industrial crop	275.7	4.0	450.8	5.5	18.0	0.4
Category 1-3	0.0	0.0	0.0	0.0	0.0	0.0
Category 4-6	275.7	100.0	450.8	100.0	18.0	100.0
Fruit tree	225.5	3.3	148.1	1.8	339.4	7.1
Category 1-3	49.0	21.7	5.5	3.7	113.0	33.3
Category 4-6	176.5	78.3	142.6	96.3	226.5	66.7
Aquaculture	171.4	2.5	268.2	3.3	28.9	0.6
Category 1-3	0.0	0.0	0.0	0.0	0.0	0.0
Category 4-6	171.4	100.0	268.2	100.0	28.9	100.0
Forest	2024.5	29.7	2057.5*	25.1	1975.9	41.3
Category 1-3	0.0	0.0	0.0	0.0	0.0	0.0
Category 4-5	2024.5	100.0	2057.5	100.0	1975.9	100.0
Other use	2191.0	32.1	3498.1	42.6	267.0	5.6
Category 1-3	6.8	0.3	11.5	0.3	0.0	0.0
Category 4-6	2183.2	99.6	3485.1	99.6	267.0	100.0

Note: * See foot note of Table 1.3

Sustainable Management of Natural Resources in Central Vietnam

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Annex Table 4.3: Land use of sampled households in TUYEN HOA (Household average)

	TUYEN HOA		Thach Hoa		Huong Hoa		TT Dong Le		Thanh Hoa		Mai Hoa		Van Hoa		Chau Hoa	
	m ²	%	m ²	%	m ²	%	m ²	%	m ²	%	m ²	%	m ²	%	m ²	%
Total land	8207.4	100	27023.0	100	12861.3	100	6928.0	100	2250.8	100	2741.6	100.0	2340.3	100.0	2921.1	100.0
Category 1-3	653.3	8.0	2200.3	8.1	0.0	0.0	146.9	2.1	0.0	0.0	1947.9	71.0	43.3	1.9	160.7	5.5
Category 4-6	7552.6	92.0	24822.8	91.9	12861.3	100.0	6770.7	97.7	2250.8	100.0	793.8	29.0	2297.0	98.1	2760.4	94.5
Annual crop	1784.7	21.7	2200.3	8.1	1635.3	12.7	713.0	10.3	1516.5	67.4	2092.1	76.3	1699.3	72.6	2586.6	88.5
Category 1-3	636.4	35.7	2200.3	100.0	0.0	0.0	27.6	3.9	0.0	0.0	1947.9	93.1	43.3	2.6	160.7	6.2
Category 4-6	1148.4	64.3	0.0	0.0	1635.3	100.0	685.4	96.1	1516.5	100.0	144.2	6.9	1656.0	97.4	2425.9	93.8
Industrial crop	450.8	5.5	176.6	0.7	29.4	0.2	2515.7	36.3	77.5	3.4	29.0	1.1	25.0	1.1	298.8	10.2
Category 1-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Category 4-6	450.8	100.0	176.6	100.0	29.4	100.0	2515.7	100.0	77.5	100.0	29.0	100.0	25.0	100.0	298.8	100.0
Fruit tree	148.1	1.8	7.4	0.0	279.4	2.2	541.6	7.8	166.2	7.4	0.0	0.0	0.0	0.0	35.7	1.2
Category 1-3	5.5	3.7	0.0	0.0	0.0	0.0	38.4	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Category 4-6	142.6	96.3	7.4	100.0	279.4	100.0	503.2	92.9	166.2	100.0	0.0	0.0	0.0	0.0	35.7	100.0
Aquaculture	268.2	3.3	882.4	3.3	72.1	0.6	916.4	13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Category 1-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Category 4-6	268.2	100.0	882.4	100.0	72.1	100.0	916.4	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forest	2057.5	25.1	2721.8	10.1	9529.4	74.1	2000.0	28.9	0.0	0.0	29.0	1.1	0.0	0.0	0.0	0.0
Category 1-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Category 4-5	2057.5	100.0	2721.8	100.0	9529.4	100.0	2000.0	100.0	0.0	0.0	29.0	100.0	0.0	0.0	0.0	0.0
Other use	3498.1	42.6	21034.6 ³	77.8	1315.7	10.2	241.2	3.5	490.5	21.8	591.6	21.6	616.0	26.3	0.0	0.0
Category 1-3	11.5	0.3	0.0	0.0	0.0	0.0	80.8	33.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Category 4-6	3485.1	99.6	21034.6	100.0	1315.7	100.0	150.0	62.2	490.5	100.0	591.6	100.0	616.0	100.0	0.0	0.0

³ Including forest area under protection contract of the 661 program

Sustainable Management of Natural Resources in Central Vietnam

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Annex Table 4.4: Land use of sampled households in MINH HOA (Household average)

	MINH HOA		Minh Hoa		Thuong Hoa		Xuan Hoa		Yen Hoa		Quy Dat	
	m ²	%	m ²	%	m ²	%	m ²	%	m ²	%	m ²	%
Total land holding	4785.8	100.0	6243.4	100.0	3468.5	100.0	4926.5	100.0	7077.5	100.0	2132.3	100.0
Category 1-3	946.0	19.8	1923.2	30.8	0.0	0.0	0.0	0.0	2734.0	38.6	0.0	0.0
Category 4-6	3839.8	80.2	4320.2	69.2	3468.5	100.0	4926.5	100.0	4343.5	61.4	2132.3	100.0
Annual crop	2156.5	45.1	1786.2	28.6	3104.1	89.5	1891.6	38.4	2722.2	38.5	1377.9	64.6
Category 1-3	833.0	38.6	1500.2	84.0	0.0	0.0	0.0	0.0	2600.9	95.5	0.0	0.0
Category 4-6	1323.5	61.4	286.0	16.0	3104.1	100.0	1891.6	100.0	121.2	4.5	1377.9	100.0
Industrial crop	18.0	0.4	71.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.8
Category 1-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Category 4-6	18.0	100.0	71.1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	100.0
Fruit tree	339.4	7.1	423.1	6.8	364.4	10.5	138.7	2.8	770.8	10.9	7.6	0.4
Category 1-3	113.0	33.3	423.1	100.0	0.0	0.0	0.0	0.0	133.1	17.3	0.0	0.0
Category 4-6	226.5	66.7	0.0	0.0	364.4	100.0	138.7	100.0	637.7	82.7	7.6	100.0
Aquaculture	28.9	0.6	0.0	0.0	0.0	0.0	127.0	2.6	15.4	0.2	0.0	0.0
Category 1-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Category 4-6	28.9	100.0	0.0	0.0	0.0	0.0	127.0	100.0	15.4	100.0	0.0	0.0
Forest	1975.9	41.3	3803.1	60.9	0.0	0.0	2370.8	48.1	3553.8	50.2	0.0	0.0
Category 1-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Category 4-5	1975.9	100.0	3803.1	100.0	0.0	0.0	2370.8	100.0	3553.8	100.0	0.0	0.0
Other use	267.0	5.6	160.0	2.6	0.0	0.0	398.5	8.1	15.4	0.2	729.6	34.2
Category 1-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Category 4-6	267.0	100.0	160.0	100.0	0.0	0.0	398.5	100.0	15.4	100.0	729.6	100.0

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Annex Table 4.5: Production assets of sampled households in TUYEN HOA and MINH HOA *

	WHOLE SAMPLE		TUYEN HOA		MINH HOA	
	(1)	(2)	(1)	(2)	(1)	(2)
Perennial crop garden	29.7	13526.4	49.5	13500.9	0.6	16500.0
Aquaculture area	6.6	6315.4	8.1	7707.9	4.4	2535.7
Breeding & working cattle	59.8	6899.2	54.8	7221.8	67.2	6512.1
Tractor	1.0	13625.0	1.1	14200.0	0.9	12666.7
Breeding pig	3.7	1309.0	2.8	1800.8	5.0	909.4
Milling machine	1.9	8045.6	2.1	9668.4	1.6	4800.0
Bee nest	4.0	926.2	3.8	881.9	4.4	983.2
Boat	0.8	9439.9	1.3	9439.9	0.0	0.0
Rice thresher machine	16.2	502.8	14.9	474.1	18.1	537.4
Pesticide sprayer	12.1	79.1	11.3	82.5	13.4	75.0
Workshop	0.5	15185.1	0.6	13580.2	0.3	20000.0
Shop	3.3	9061.7	4.7	9959.3	1.3	4125.0
Other production asset	17.7	2904.7	28.7	2770.1	1.6	6540.0

Note: (1) = % HH who has the asset

(2) = Current value per HH who has the asset (VND 1000)

* Trong Hoa commune, Minh hoa district is excluded due to data missing

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Annex Table 4.6: Production assets of sampled households in TUYEN HOA

	TUYEN HOA		Thach Hoa		Huong hoa		Dong Le		Thanh hoa		Mai Hoa		Van Hoa		Chau Hoa	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Perennial crop garden	49.5	13501.0	54.4	4732.4	67.6	26884.8	23.9	39812.5	56.5	2038.5	4.3	10333.3	61.7	9051.4	78.6	11845.5
Aquaculture area	8.1	7707.9	0.0	0.0	20.6	6728.6	31.3	8938.1	1.4	5000.0	2.9	3000.0	0.0	0.0	0.0	0.0
Working cattle	54.8	7221.8	77.9	5984.9	60.3	12000.0	14.9	8400.0	47.8	5652.1	68.1	6295.7	36.7	6559.2	74.3	6601.9
Tractor	1.1	14200	1.5	7000.0	4.4	16333.3	1.5	15000.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Breeding pig	2.8	1800.8	8.8	2766.7	0.0	0.0	1.5	2000.0	4.3	720.0	4.3	933.3	0.0	0.0	0.0	0.0
Milling machine	2.1	9668.4	2.9	9500.0	1.5	7000.0	1.5	4000.0	0.0	0.0	0.0	0.0	3.3	14500.0	5.7	9575.0
Bee nest	3.8	881.88	4.4	1583.3	4.4	1200.0	4.5	1208.3	0.0	0.0	5.8	700.0	0.0	0.0	7.1	240.0
Boat	1.3	9439.9	2.9	8500.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	20000.0	4.3	6666.7
Rice thresher	14.9	474.14	11.8	350.1	0.0	0.0	3.0	300.0	0.0	0.0	39.1	357.4	18.3	459.1	31.4	695.5
Pesticide sprayer	11.3	82.493	5.9	75.0	5.9	87.5	4.5	85.0	18.8	105.4	4.3	80.0	0.0	0.0	37.1	72.5
Workshop	0.6	13580	1.5	10000.0	1.5	30000.0	0.0	0.0	0.0	0.0	1.4	1000.0	0.0	0.0	0.0	0.0
Shop	4.7	9959.3	1.5	3000.0	10.3	19571.4	4.5	9333.3	0.0	0.0	4.3	500.0	6.7	9250.0	5.7	3500.0
Other production asset	28.7	2770.1	88.2	827.3	8.8	42166.7	1.5	5000.0	0.0	0.0	88.4	691.8	11.7	3785.7	0.0	0.0

Note: (1) = % HH who has the asset

(2) = Current value per HH who has the asset (VND 1000)

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Annex Table 4.7: Production assets of sampled households in MINH HOA*

	MINH HOA		Minh Hoa		Thuong Hoa		Xuan Hoa		Yen Hoa		Quy Dat	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Perennial crops garden	0.6	16500.0	1.5	3000.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	30000.0
Aquaculture area	4.4	2535.7	10.8	1971.4	0.0	0.0	9.2	3283.3	0.0	0.0	1.5	2000.0
Breeding & working cattle	67.2	6512.1	81.5	8811.3	50.8	5476.7	72.3	7112.8	100.0	5315.4	30.3	4450.0
Tractor	0.9	12666.7	1.5	7000.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	15500.0
Breeding pig	5.0	909.4	4.6	500.0	20.3	1020.8	0.0	0.0	1.5	800.0	0.0	0.0
Milling machine	1.6	4800.0	1.5	4000.0	0.0	0.0	1.5	7000.0	3.1	5500.0	1.5	2000.0
Bee nest	4.4	983.2	7.7	300.0	0.0	0.0	13.8	1362.8	0.0	0.0	0.0	0.0
Boat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rice thresher machine	18.1	537.4	12.3	337.5	0.0	0.0	21.5	175.0	52.3	221.2	3.0	9250.0
Pesticide sprayer	13.4	75.0	10.8	80.0	0.0	0.0	16.9	74.5	38.5	73.8	0.0	0.0
Workshop	0.3	20000.0	0.0	0.0	0.0	0.0	1.5	20000.0	0.0	0.0	0.0	0.0
Shop	1.3	4125.0	1.5	5000.0	0.0	0.0	1.5	5000.0	0.0	0.0	3.0	3250.0
Other production asset	1.6	6540.0	0.0	0.0	0.0	0.0	3.1	8000.0	1.5	10000.0	3.0	3350.0

Note: (1) = % HH has the asset

(2) = Current value per HH who has the asset (VND 1000)

* Trong Hoa commune, Minh Hoa district is not included due to missing data

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Annex Table 4.8: Durable appliance of sampled households in TUYEN HOA and MINH HOA*

	WHOLE SAMPLE		TUYEN HOA		MINH HOA	
	(1)	(2)	(1)	(2)	(1)	(2)
Television	54.9	1803.2	55.0	2127.6	54.7	1323.1
Telephone	7.5	695.4	10.4	736.3	3.1	495.0
Bicycle	77.0	551.5	74.5	662.8	80.6	400.2
Motorbike	30.8	9591.8	27.4	12076.7	35.9	6804.4
Wardrobes	61.2	1585.8	66.7	1589.8	53.1	1578.6
Table-chair set	76.0	764.6	83.4	886.4	65.0	534.6
Water well	61.7	1425.8	74.3	1401.6	43.1	1487.3
Hygienic toilet	13.0	2128.2	17.6	2298.8	6.3	1420.0

Note: (1) = % HH who has the asset
 (2) = Current value per HH who has the asset (VND 1000)
 * Trong Hoa commune is excluded due to data missing

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Annex Table 4.9: Durable appliance of sampled households in TUYEN HOA

	TUYEN HOA		Thach Hoa		Huong hoa		TT Dong Le		Thanh hoa		Mai Hoa		Van Hoa		Chau Hoa	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Television	55.0	2127.6	20.6	1814.3	72.1	2371.4	95.5	2003.1	20.3	2064.3	47.8	2287.9	66.7	1933.8	64.3	2211.1
Telephone	10.4	736.3	0.0	0.0	11.8	1300.0	47.8	631.6	0.0	0.0	5.8	575.0	6.7	567.5	1.4	900.0
Bicycle	74.5	662.8	86.8	262.7	98.5	1089.6	65.7	609.1	24.6	417.6	91.3	491.3	75.0	1286.7	80.0	382.0
Motorbike	27.4	12076.7	8.8	6916.7	55.9	12889.5	64.2	14648.8	18.8	8307.7	11.6	10712.5	13.3	10250.0	18.6	9307.7
Wardrobes	66.7	1589.8	33.8	1050.0	83.8	1956.5	89.6	2871.7	69.6	769.2	50.7	1591.4	75.0	914.4	65.7	1248.9
Table-chair	83.4	886.4	95.6	201.7	95.6	1949.2	86.6	1656.9	71.0	459.6	59.4	783.2	86.7	483.7	90.0	518.4
Water well	74.3	1401.6	44.1	1903.3	91.2	1403.2	91.0	1704.1	59.4	1187.8	60.9	2202.4	85.0	408.0	90.0	1277.8
Hygienic toilet	17.6	2298.8	1.5	3000.0	44.1	2040.0	22.4	6233.3	0.0	0.0	11.6	1000.0	25.0	653.3	20.0	1092.9

Note: (1) = % HH who has the asset

(2) = Current value per HH who has the asset (VND 1000)

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Annex Table 4.10: Durable appliance of sampled households in MINH HOA*

	MINH HOA		Minh Hoa		Thuong Hoa		Xuan Hoa		Yen Hoa		Quy Dat	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Television	54.7	1323.1	63.1	1389.0	10.2	1833.3	56.9	917.6	50.8	792.4	87.9	1784.5
Telephone	3.1	495.0	1.5	700.0	1.7	150.0	6.2	525.0	0.0	0.0	6.1	500.0
Bicycle	80.6	400.2	93.8	574.6	37.3	290.9	81.5	345.3	95.4	354.8	90.9	358.3
Motorbike	35.9	6804.4	30.8	7310.0	25.4	6673.3	50.8	5430.3	29.2	5810.6	42.4	8807.1
Wardrobes	53.1	1578.6	84.6	1574.5	8.5	1760.0	46.2	1612.0	58.5	1294.7	63.6	1795.2
Table-chair set	65.0	534.6	90.8	718.6	11.9	500.0	58.5	411.8	96.9	360.3	62.1	657.3
Water well	43.1	1487.3	70.8	1582.6	6.8	1250.0	47.7	1095.2	18.5	1416.7	68.2	1700.0
Hygienic toilet	6.3	1420.0	21.5	1185.7	0.0	0.0	0.0	0.0	3.1	1000.0	6.1	2450.0

Note: (1) = % HH who has the asset

(2) = Current value per HH who has the asset (VND 1000)

* Trong Hoa commune is excluded due to data missing

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Annex Table 4.11: Outstanding loan of the sampled households in TUYEN HOA and MINH HOA

Commune/ DISTRICT	Total loan		Production loan		Consumption loan		Other loan	
	No. HH with loan (%)	Average (VND 1000)	No. HH with loan (%)	Average (VND 1000)	No. HH with loan (%)	Average (VND 1000)	No. HH with loan (%)	Average (VND 1000)
Thach hoa	17.6	2250.0	17.6	2166.7	2.9	500.0	0.0	0.0
Huong Hoa	68.1	7521.3	63.8	7131.8	7.2	3740.0	4.3	7000.0
TT Dong Le	69.6	8354.2	62.3	7965.1	5.8	6000.0	8.7	4000.0
Thanh Hoa	15.7	4272.7	14.3	4600.0	0.0	0.0	0.0	0.0
Mai Hoa	26.1	2861.1	23.2	2593.8	1.4	2000.0	5.8	2000.0
Van Hoa	17.1	3833.3	17.1	3833.3	0.0	0.0	0.0	0.0
Chau Hoa	42.9	5453.3	40.0	4896.4	1.4	2000.0	2.9	10000.0
TUYEN HOA	37.0	4943.0	34.2	4745.4	2.7	2055.9	3.1	3358.8
Trong Hoa	23.7	841.4	0.0	0.0	23.7	841.4	0.0	0.0
Minh Hoa	81.5	3541.5	56.9	2870.3	15.4	4450.0	10.8	5428.6
Thuong Hoa	32.2	3857.9	30.5	2811.1	15.3	2522.2	0.0	0.0
Xuan Hoa	80.0	5403.8	72.3	5255.3	3.1	2800.0	6.2	4625.0
Yen Hoa	70.8	4393.5	69.2	4277.8	1.5	5000.0	4.6	3200.0
Quy Dat	40.9	3814.8	37.9	3840.0	0.0	0.0	1.5	4000.0
MINH HOA	56.4	3744.8	46.4	3303.3	9.2	2663.0	4.0	3033.6
WHOLE SAMPLE	45.5	4289.1	39.6	4001.1	5.6	2497.2	3.5	3195.0

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ANNEX 5: HOUSEHOLD INCOME BY SOURCE (FROM Annex Table 5.1 TO Annex Table 5.13)

Annex Table 5.1: Food security and income of the sampled households by commune in the two districts of TUYEN HOA and MINH HOA (Household average)

Commune/ DISTRICT	No. of sampled household (HH)	Household with food shortage (%)	Months with food shortage (month)	Average annual HH income (VND 1000)	Monthly income per ca- pita (VND 1000)
Thach Hoa	68	7.4	3.2	7567.3	109.7
Huong Hoa	68	30.9	3.2	24883.3	415.9
Dong Le	67	0.0	0.0	23614.4	474.8
Thanh Hoa	69	39.1	3.8	4115.3	83.0
Mai Hoa	69	11.6	1.9	9406.9	183.4
Van Hoa	60	26.7	0.8	13261.3	301.4
Chau Hoa	70	21.4	3.5	9417.2	162.5
TUYEN HOA	471	19.5	2.9	13114.1	239.9
Trong Hoa	51	82.4	3.4	5404.7	70.7
Minh Hoa	65	6.2	2.8	8203.0	136.7
Thuong Hoa	59	88.1	4.8	2878.9	50.2
Xuan Hoa	65	23.1	4.0	7121.3	124.4
Yen Hoa	65	43.1	2.8	6206.1	93.9
Quy Dat	66	24.2	2.3	11286.7	197.2
MINH HOA	371	42.3	3.7	6989.5	112.8
WHOLE SAMPLE	842	29.6	3.4	10415.8	180.0

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**Annex Table 5.2: Income of sampled households by income source
(Household average)**

Income source	WHOLE SAMPLE		TUYEN HOA		MINH HOA	
	VND 1000	%	VND 1000	%	VND 1000	%
Crop production	2466.8	23.7	2969.4	22.6	1828.8	26.2
Animal husbandry	2081.0	20.0	2603.4	19.9	1417.8	20.3
Agricultural services	107.6	1.0	126.0	1.0	84.4	1.2
Forestry	490.7	4.7	619.7	4.7	326.8	4.7
Fishery	154.9	1.5	207.6	1.6	88.0	1.3
Trading, processing & others	1365.4	13.1	2069.7	15.8	471.4	6.7
Cash income	3749.3	36.0	4518.7	34.5	2772.4	39.7
TOTAL	10415.8	100.0	13114.6	100.0	6989.5	100.0

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Annex Table 5.3: Income of sampled households in TUYEN HOA by source

	TUYEN HOA	Thach Hoa	Huong Hoa	Dong Le	Thanh Hoa	Mai Hoa	Van Hoa	Chau Hoa
Crop production	2969.4	3417.7	5895.9	1680.6	1552.9	3221.8	2444.2	2522.5
	(22.6)	(45.2)	(23.7)	(7.1)	(37.7)	(34.2)	(18.4)	(26.8)
Animal husbandry	2603.4	1846.0	4269.8	5275.6	1006.7	1885.6	2615.8	1433.9
	(19.9)	(24.4)	(17.2)	(22.3)	(24.5)	(20.0)	(19.7)	(15.2)
Agricultural services	126.0	158.8	632.4	17.2	0.0	0.0	0.0	62.7
	(1.0)	(2.1)	(2.5)	(0.1)	(0.0)	(0.0)	(0.0)	(0.7)
Forestry	619.7	150.0	3384.6	13.4	524.6	37.7	0.0	169.3
	(4.7)	(2.0)	(13.6)	(0.1)	(12.7)	(0.4)	(0.0)	(1.8)
Fishery	207.6	213.2	730.0	404.0	0.0	39.1	0.0	55.2
	(1.6)	(2.8)	(2.9)	(1.7)	(0.0)	(0.4)	(0.0)	(0.6)
Trading, processing & others	2069.2	312.9	6538.2	3771.4	742.8	668.8	979.0	1426.6
	(15.8)	(4.1)	(26.3)	(16.0)	(18.0)	(7.1)	(7.4)	(15.1)
Cash income	4518.7	1468.7	3432.4	12452.1	288.4	3553.9	7222.3	3747.0
	(34.5)	(19.4)	(13.8)	(52.7)	(7.0)	(37.8)	(54.5)	(39.8)
TOTAL	13114.1	7567.3	24883.3	23614.4	4115.3	9406.9	13261.3	9417.2

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Annex Table 5.4: Income of sampled households in MINH HOA by source

	MINH HOA	Trong Hoa	Minh Hoa	Thuong Hoa	Xuan Hoa	Yen Hoa	Quy Dat
Crop production	1828.8 (26.2)	1483.0 (27.4)	1584.1 (19.3)	764.1 (26.5)	1985.7 (27.9)	2691.1 (43.4)	2285.0 (20.2)
Animal husbandry	1417.8 (20.3)	1992.2 (36.9)	1231.5 (15.0)	670.3 (23.3)	1438.1 (20.2)	787.6 (12.7)	2426.0 (21.5)
Agricultural services	84.4 (1.2)	0.0 (0.0)	30.8 (0.4)	0.0 (0.0)	0.0 (0.0)	315.4 (5.1)	133.3 (1.2)
Forestry	326.8 (4.7)	1473.4 (27.3)	0.0 (0.0)	108.5 (3.8)	418.5 (5.9)	0.0 (0.0)	189.4 (1.7)
Fishery	88.0 (1.3)	226.3 (4.2)	121.8 (1.5)	0.0 (0.0)	127.8 (1.8)	58.2 (0.9)	16.5 (0.1)
Trading, processing & others	471.4 (6.7)	63.3 (1.2)	0.0 (0.0)	0.0 (0.0)	782.4 (11.0)	189.2 (3.0)	1643.9 (14.6)
Cash income	2772.4 (39.7)	166.5 (3.1)	5288.3 (64.5)	1336.0 (46.4)	2368.7 (33.3)	2164.7 (34.9)	4588.5 (40.7)
TOTAL	6989.5	5404.7	8203.0	2878.9	7121.3	6206.1	11286.7

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Annex Table 5.5: Agricultural income of sampled households in TUYEN HOA and MINH HOA (Household average)

	WHOLE SAMPLE		TUYEN HOA		MINH HOA	
	VND 1000	%	VND 1000	%	VND 1000	%
Crop production	2466.8	54.2	2969.4	53.3	1828.8	56.3
Crop product	2358.9	95.6	2780.0	93.6	1824.4	99.8
- Food crop	1460.9	61.9	1626.4	58.5	1250.8	68.6
- Industrial crop	462.2	19.6	523.5	18.8	384.4	21.1
- Fruit tree	435.9	18.5	630.2	22.7	189.2	10.4
Crop by-product	129.3	5.2	189.4	6.4	52.9	2.9
Animal husbandry	2086.6	45.8	2603.4	46.7	1417.8	43.7
- Cattle, pig, goat	867.6	41.9	1030.7	39.6	660.5	46.6
- Poultry and other	1212.9	58.3	1571.9	60.4	757.3	53.4
Total agricultural income	4547.9	100.0	5572.9	100.0	3246.6	100.0

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Annex Table 5.6: Agricultural income of sampled households in TUYEN HOA (Household average)

	TUYEN HOA		Thach Hoa		Huong Hoa		Dong Le		Thanh Hoa		Mai Hoa		Van Hoa		Chau Hoa	
	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%
Crop production	2969.4	53.3	3417.7	64.9	5895.9	58.0	1680.6	24.2	1552.9	60.7	3221.8	63.1	2444.2	48.3	2522.5	63.8
<i>Crop product</i>	<i>2780.0</i>	<i>93.6</i>	<i>2816.8</i>	<i>82.4</i>	<i>5831.2</i>	<i>98.9</i>	<i>1650.0</i>	<i>98.2</i>	<i>1552.9</i>	<i>100.0</i>	<i>3047.7</i>	<i>94.6</i>	<i>2254.5</i>	<i>92.2</i>	<i>2257.9</i>	<i>89.5</i>
- Food crop	1626.4	58.5	1865.9	66.2	1906.5	32.7	706.0	42.8	1088.6	70.1	2563.8	84.1	1109.3	49.2	2051.8	90.9
- Industrial crop	523.5	18.8	715.8	25.4	1308.8	22.4	392.7	23.8	203.0	13.1	376.7	12.4	538.6	23.9	146.4	6.5
- Fruit tree	630.2	22.7	235.1	8.3	2616.0	44.9	551.3	33.4	261.2	16.8	107.2	3.5	606.6	26.9	59.6	2.6
<i>Crop by-product</i>	<i>189.4</i>	<i>6.4</i>	<i>600.9</i>	<i>17.6</i>	<i>64.7</i>	<i>1.1</i>	<i>30.6</i>	<i>1.8</i>	<i>0.0</i>	<i>0.0</i>	<i>174.1</i>	<i>5.4</i>	<i>189.8</i>	<i>7.8</i>	<i>264.6</i>	<i>10.5</i>
Animal husbandry	2603.4	46.7	1846.0	35.1	4269.8	42.0	5275.6	75.8	1006.7	39.3	1885.6	36.9	2615.8	51.7	1433.9	36.2
- Cattle, pig, goat	1030.7	39.6	533.4	28.9	811.5	19.0	2992.0	56.7	580.2	57.6	137.1	7.3	1661.8	63.5	633.3	44.2
- Poultry and other	1571.9	60.4	1312.6	71.1	3449.8	80.8	2285.9	43.3	426.4	42.4	1748.5	92.7	954.1	36.5	800.6	55.8
Total income	5572.9	100.0	5263.6	100.0	10165.7	100.0	6956.2	100.0	2559.6	100.0	5107.4	100.0	5060.0	100.0	3956.3	100.0

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Annex Table 5.7: Agricultural income of sampled households in MINH HOA (Household average)

	MINH HOA		Trong Hoa		Minh Hoa		Thuong Hoa		Xuan Hoa		Yen Hoa		Quy Dat	
	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%
Crop production	1828.8	56.3	1483.0	42.7	1584.1	56.3	764.1	53.3	1985.7	58.0	2691.1	77.4	2285.0	48.5
<i>Crop product</i>	<i>1824.4</i>	<i>100</i>	<i>1835.9</i>	<i>100.0</i>	<i>1584.1</i>	<i>100.0</i>	<i>764.1</i>	<i>100.0</i>	<i>1784.9</i>	<i>100.0</i>	<i>2671.2</i>	<i>100.0</i>	<i>2204.7</i>	<i>100.0</i>
- Food crop	1250.8	68.6	1077.7	58.7	1148.2	72.5	631.4	82.6	1032.4	57.8	1614.9	60.5	1895.6	86.0
- Industrial crop	384.4	21.1	73.1	4.0	349.7	22.1	131.9	17.3	589.3	33.0	1043.3	39.1	33.9	1.5
- Fruit tree	189.2	10.4	685.1	37.3	86.2	5.4	0.7	0.1	163.1	9.1	13.0	0.5	275.2	12.5
<i>Crop by-product</i>	<i>52.9</i>	<i>2.9</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>200.8</i>	<i>10.1</i>	<i>19.8</i>	<i>0.7</i>	<i>80.3</i>	<i>3.5</i>
Animal husbandry	1417.8	43.7	1992.2	57.3	1231.5	43.7	670.3	46.7	1438.1	42.0	787.6	22.6	2426.0	51.5
- Cattle, pig, goat	672.1	47.4	1562.7	78.4	409.2	33.2	479.7	71.6	646.6	45.0	83.1	10.5	954.7	39.4
- Poultry and other	758.8	53.5	429.5	21.6	822.2	66.8	190.7	28.4	791.5	55.0	704.5	89.5	1471.3	60.6
Total income	3246.6	100.0	3475.2	100.0	2815.6	100.0	1434.4	100.0	3423.8	100.0	3478.7	100.0	4711.0	100.0

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Annex Table 5.8: Forestry and fishery income of sampled households in TUYEN HOA and MINH HOA (Household average)

	WHOLE SAMPLE		TUYEN HOA		MINH HOA	
	VND 1000	%	VND 1000	%	VND 1000	%
Forestry	490.7	100.0	619.8	100.0	326.8	100.0
- Planted forest	107.2	21.8	147.2	23.8	56.3	17.2
- Natural forest	383.5	78.2	472.5	76.2	270.5	82.8
Fishery	154.9	100.0	207.6	100.0	88.0	100.0
- Aquaculture	129.9	83.9	206.5	99.5	32.6	37.1
- Natural catch	25.0	16.1	1.1	0.51	55.4	63.0

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Annex Table 5.9: Forestry and fishery income of the sampled households in TUYEN HOA (Household average)

	TUYEN HOA		Thach Hoa		Huong Hoa		Dong Le		Thanh Hoa		Mai Hoa		Van Hoa		Chau Hoa	
	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%
Forestry	619.7	100.0	150.0	100.0	3384.6	100.0	13.4	100.0	524.6	100.0	37.7	100.0	0.0	0.0	169.3	100.0
- Planted forest	147.2	23.8	0.0	0.0	894.6	26.4	13.4	100.0	15.4	2.9	37.7	100.0	0.0	0.0	56.4	33.3
- Natural forest	472.5	76.2	150.0	100.0	2490.0	73.6	0.0	0.0	509.1	97.1	0.0	0.0	0.0	0.0	112.9	66.7
Fishery	207.6	100.0	213.2	100.0	730.0	100.0	404.0	100.0	0.0	0.0	39.1	0.0	0.0	0.0	55.2	0.0
- Aquaculture	206.5	99.5	205.9	96.6	730.0	100.0	404.0	100.0	0.0	0.0	39.1	0.0	0.0	0.0	55.2	0.0
- Natural catch	1.1	0.5	7.4	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Annex Table 5.10: Forestry and fishery income of the sampled households in MINH HOA (Household average)

	MINH HOA		Trong Hoa		Minh Hoa		Thuong Hoa		Xuan Hoa		Yen Hoa		Quy Dat	
	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%	VND 1000	%
Forestry	326.8	100.0	1473.4	100.0	0.0	0.0	108.5	100.0	418.5	100.0	0.0	0.0	189.4	100.0
- Planted forest	56.3	17.2	188.0	12.8	0.0	0.0	0.0	0.0	120.2	28.7	0.0	0.0	53.0	28.0
- Natural forest	270.5	82.8	1285.4	87.2	0.0	0.0	108.5	100.0	298.3	71.3	0.0	0.0	136.4	72.0
Fishery	88.0	100.0	226.3	100.0	121.8	100.0	0.0	0.0	127.8	100.0	58.2	100.0	16.5	100.0
- Aquaculture	32.6	37.1	0.0	0.0	54.2	44.4	0.0	0.0	57.0	44.6	58.2	100.0	16.5	100.0
- Natural catch	55.4	62.9	226.3	100.0	67.7	55.6	0.0	0.0	70.8	55.4	0.0	0.0	0.0	0.0

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Annex Table 5.11: Household income from trade, agro-forestry and fishery processing and other income generating activities in MINH HOA and TUYEN HOA (Household average)

(VND 1000)

	Total	Trading	Processing	Other
WHOLE SAMPLE	1600.9	1006.3	97.4	497.2
	(100)	(62.9)	(6.1)	(31.1)
TUYEN HOA	2069.2	1200.8	140.5	727.9
	(100)	(58.0)	(6.8)	(35.2)
MINH HOA	708.0	635.6	15.2	57.3
	(100)	(89.8)	(2.1)	(8.1)

Note: Numbers bracket are percentage share

Annex Table 5.12: Household income from trade, agro-forestry and fishery processing and other income generating activities in TUYEN HOA (Household average)

(VND 1000)

	Total	Trading	Processing	Other
TUYEN HOA	2069.2	1200.8	140.5	727.9
	(100)	(58.0)	(6.8)	(35.2)
Thach Hoa	312.9	247.1	0.0	65.9
	(100)	(78.9)	(0.0)	(21.1)
Huong Hoa	6538.2	2993.2	757.9	2787.1
	(100)	(45.8)	(11.6)	(42.6)
Dong Le	3771.4	2699.1	148.7	923.7
	(100)	(71.6)	(3.9)	(24.5)
Thanh Hoa	742.8	537.2	0.0	205.5
	(100)	(72.3)	(0.0)	(27.7)
Mai Hoa	668.8	482.9	0.0	185.9
	(100)	(72.2)	(0.0)	(27.8)
Van Hoa	979.0	564.6	0.0	414.3
	(100)	(57.7)	(0.0)	(42.3)
Chau Hoa	1426.6	858.9	66.9	500.9
	(100)	(60.2)	(4.7)	(35.1)

Note: Numbers bracket are percentage share

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Annex Table 5.13: HH income from trade, agro-forestry and fishery processing and other income generating activities in MINH HOA (Household average)

(VND 1000)

	Total	Trading	Processing	Other
MINH HOA	708.0	635.6	15.2	57.3
	(100)	(89.8)	(2.1)	(8.1)
Trong Hoa	63.3	15.7	47.6	0.0
	(100)	(24.8)	(75.2)	(0.0)
Xuan Hoa	782.4	746.5	1.2	34.6
	(100)	(95.4)	(0.2)	(4.4)
Yen Hoa	189.2	90.8	0.0	98.5
	(100)	(48.0)	(0.0)	(52.0)
Quy Dat	1643.9	1541.8	18.8	83.3
	(100)	(93.8)	(1.1)	(5.1)

Note: Numbers bracket are percentage share

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ANNEX 6: HOUSEHOLD INCOME BY ETHNIC GROUP (FROM Annex Table 6.1 TO Annex Table 6.8)

Annex Table 6.1: Selected socio-economic characteristics of sampled households in TUYEN HOA and MINH HOA by ethnic group

	WHOLE SAMPLE			TUYEN HOA			MINH HOA		
	Both group	Kinh	Minority	Both group	Kinh	Minority	Both group	Kinh	Minority
Age of household head (year)	47.9	48.9	42.0	49.5	49.9	43.0	45.8	47.2	41.7
No. of people per HH (person)	4.8	4.7	5.3	4.6	4.6	4.4	5.2	5.1	5.5
No. of labor per HH (labor)	3.1	3.1	2.5	3.3	3.4	2.3	2.9	3.0	2.6
Education of HH head	6.4	7.1	2.8	7.0	7.2	2.2	5.1	6.5	2.9
Total land area per HH (m ²)	6823.2	7148.6	3363.0	8207.4	8502.6	2940.8	4785.8	4968.6	3608.5
Average household income	10415.5	11453.1	4111.1	13114.1	13643.2	3675.0	6989.5	7926.9	4227.1

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Annex Table 6.2: Income of sampled households in TUYEN HOA AND MINH HOA by source and ethnic group

	WHOLE SAMPLE		KINH		MINORITY	
	VND 1000	%	VND 1000	%	VND 1000	%
Crop production	2466.8	23.7	2631.4	23.0	1467.0	35.7
Animal husbandry	2081.0	20.0	2224.7	19.4	1208.2	29.4
Agricultural services	107.6	1.0	125.4	1.1	0.0	0.0
Forestry	490.7	4.7	426.7	3.7	879.7	21.4
Fishery	154.9	1.5	162.4	1.4	109.2	2.7
Trading, processing	1365.1	13.1	1585.4	13.8	27.1	0.7
Cash income	3749.3	36.0	4297.2	37.5	420.0	10.2
TOTAL INCOME	10415.5	100.0	11453.1	100.0	4111.1	100.0

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Annex Table 6.3: Income of sampled households in TUYEN HOA by source and ethnic group

	BOTH GROUPS		KINH		MINOROTY	
	VND 1000	%	VND 1000	%	VND 1000	%
Crop production	2969.4	22.6	3022.0	22.2	2032.0	55.3
Animal husbandry	2603.4	19.9	2709.2	19.9	717.6	19.5
Agricultural services	126.0	1.0	133.0	1.0	0.0	0.0
Forestry	619.7	4.7	602.6	4.4	925.4	25.2
Fishery	207.6	1.6	219.2	1.6	0.0	0.0
Trading, processing	2069.2	15.8	2185.1	16.0	0.0	0.0
Cash income	4518.7	34.5	4772.0	35.0	0.0	0.0
TOTAL INCOME	13114.1	100.0	13643.2	100.0	3675.0	100.0

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Annex Table 6.4: Income of sampled households in MINH HOA by source and ethnic group

	BOTH GROUPS		KINH		MINORITY	
	VND 1000	%	VND 1000	%	VND 1000	%
Crop production	1828.8	26.2	2002.6	25.3	1316.7	31.1
Animal husbandry	1417.8	20.3	1444.6	18.2	1338.6	31.7
Agricultural services	84.4	1.2	113.0	1.4	0.0	0.0
Forestry	326.8	4.7	143.3	1.8	867.5	20.5
Fishery	88.0	1.3	70.9	0.9	138.2	3.3
Trading, processing	471.4	6.7	619.7	7.8	34.4	0.8
Cash income	2772.4	39.7	3532.8	44.6	531.7	12.6
TOTAL INCOME	6989.5	100.0	7926.9	100.0	4227.1	100.0

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Table 6.5: Selected socio-economic characteristics of sampled household by ethnic group in two selected communes of Thanh Hoa and Thuong Hoa communes

	Both communes			Thanh Hoa			Thuong Hoa		
	Both	Kinh	Minority	Both	Kinh	Minority	Both	Kinh	Minority
Age of HH head (year)	44.0	47.5	40.4	46.4	48.3	43.0	41.1	45.7	38.8
No. of people per HH (person)	4.4	4.4	4.5	4.1	4.0	4.4	4.8	5.3	4.5
No. of labor per HH (labor)	2.3	2.4	2.3	2.2	2.2	2.3	2.5	2.8	2.3
Education of HH head	3.6	4.8	2.4	4.3	5.5	2.2	2.8	3.3	2.6
Total land area per HH (m ²)	2812.1	2634.8	2989.4	2250.8	1858.8	2940.8	3468.5	4342.0	3020.5
Household income (VND 1000)	3545.4	4355.2	2735.6	4115.3	4365.5	3675.0	2878.9	4332.5	2133.5

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Annex Table 6.6: Household income by source and ethnic group in two selected communes of Thuong Hoa and Thanh Hoa

	Both groups		Kinh		Minority	
	VND 1000	%	VND 1000	%	VND 1000	%
Crop production	1189.3	33.5	1205.0	27.7	1173.6	42.9
Animal husbandry	851.6	24.0	1116.7	25.6	586.6	21.4
Agricultural services	0.0	0.0	0.0	0.0	0.0	0.0
Forestry	332.8	9.4	204.1	4.7	461.5	16.9
Fishery	0.0	0.0	0.0	0.0	0.0	0.0
Trading, processing	400.4	11.3	800.8	18.4	0.0	0.0
Cash income	771.3	21.8	1028.6	23.6	514.0	18.8
TOTAL	3545.4	100.0	4355.2	100.0	2735.6	100.0

Annex Table 6.7: Household income by source and ethnic group in Thanh Hoa commune, TUYEN HOA district

	Both groups		Kinh		Minority	
	VND 1000	%	VND 1000	%	VND 1000	%
Crop production	1552.9	37.7	1280.7	29.3	2032.0	55.3
Animal husbandry	1006.7	24.5	1170.9	26.8	717.6	19.5
Agricultural services	0.0	0.0	0.0	0.0	0.0	0.0
Forestry	524.6	12.7	296.8	6.8	925.4	25.2
Fishery	0.0	0.0	0.0	0.0	0.0	0.0
Trading, processing	742.8	18.0	1164.8	26.7	0.0	0.0
Cash income	288.4	7.0	452.3	10.4	0.0	0.0
TOTAL	4115.3	100.0	4365.5	100.0	3675.0	100.0

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Annex Table 6.8: Household income by source and ethnic group in Thuong Hoa commune, MINH HOA district

	Both groups		Kinh		Minority	
	VND 1000	%	VND 1000	%	VND 1000	%
Crop production	764.1	26.5	1038.5	24.0	623.4	29.2
Animal husbandry	670.3	23.3	997.4	23.0	502.6	23.6
Agricultural services	0.0	0.0	0.0	0.0	0.0	0.0
Forestry	108.5	3.8	0.0	0.0	164.1	7.7
Fishery	0.0	0.0	0.0	0.0	0.0	0.0
Trading, processing	0.0	0.0	0.0	0.0	0.0	0.0
Cash income	1336.0	46.4	2296.6	53.0	843.4	39.5
TOTAL	2878.9	100.0	4332.5	100.0	2133.5	100.0

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ANNEX 7: QUESTIONNAIRE

HOUSEHOLD QUESTIONNAIRE

Year 2003 - 2004

District: Tuyen Hoa =1
 Minh Hoa =2

Commune/Ward/Town number:
 Village/Hamlet number:

Household head (capitalized): _____ Household number:
 Interviewer name (capitalized): _____

SECTION 1. LIST OF HOUSEHOLD MEMBERS

MEMBER	1. Please provide the full name of each household member, starting with household head.) WRITE DOWN IN CAPITAL LETTERS AND IN ORDER OF NUCLEAR FAMILIES (INTERVIEWER NOTICE EXCEPTIONS)	2. Sex of [NAME] MALE = 1 FEMALE= 2	3. Relationship of [NAME] with the household head HEAD1 WIFE/HUSBAND.... ..2 CHILD.....3 PARENTS4. GRANDFATHER/MOTHER ..5 GRANDCHILD..... ..6 OTHER7	4. How old is [name] ? in round ages to month of interview YEARS	5. Which grade has ..[NAME].. finish? WRITE 00 IF NOT FINISHED 1ST GRADE OR NEVER GO TO SCHOOL	6. What was the highest diploma ...[NAME].. obtained? NO DEGREE0 PRIMARY SCHOOL ..1 LOWER SECONDARY SCHOOL ..2 UPPER SECONDARY SCHOOL3 TECHNICAL WORKER 4 PROF. SCHOOL6 COLLEGE DIPLOMA7 BACHELOR'S8 MASTER9 DOCTOR10 OTHER (SPECIFY)11
1						
2						
3						
4						
5						
6						
7						
8						
9						

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7. Ethnic group of the household: Kinh =1 , Minority =2, Mixed = 3

8. Number of labors in labor-age bracket (male: 16-60; female 16-55):

8. Number of labors out of labor-age bracket (child 13-15, male over 60, female over 55)

SECTION 2: LAND USE OF THE HOUSEHOLD

1. How many pieces of land, including home garden and residential land, do you have?

2. Please provide us information of each plot?

Plot code	Uses? 1= annual crop, 2= Perennial crop 3= Fruit tree, 4= Forestry 5= Aquaculture, 6= other	Category? (from 1 to 6)	Area? (m ²)	Ownership of the plot 1= Owned by your HH 2= Rented 3= Other (specify)
1				
2				
3				
4				
5				
6				
7				
8				
9				

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SECTION 3: INCOME 3A: CROP PRODUCTION

1. Have your HH harvested any crop products for the last 12 months? YES = 1 NO = 2
(->>SECTION 3B)

3A1. INCOME FROM CROP PRODUCTS

	2 Which crop products has your household harvested for the past 12 months? MARK [X] IF THE ANSWER IS YES <input checked="" type="checkbox"/>	3 What is the area your HH has planted [...] for the past 12 months? (m ² or # trees)	4 How much total output of [...] has your household harvested for the past 12 months? (Kg)	5 Total value of the produce (sold and used) harvested for the past 12 months? (1000 VND)
Food crops, bean and vegetables				
1	Normal rice			
2	Glutinous rice			
3	Maize/com			
4	Sweet potatoes			
5	Cassava			
6	Other starchy plants			
7	Water spinach			
8	Cabbage/mustard greens			
9	Green bean			
10	Lettuce			
11	Other (chili, egg plant ...)			
Industrial crops				
1	Peanuts			
2	Sesame seeds			
3	Sugarcane			
4	Tobacco			
5	Other annual industrial crops			
6	Tea			
7	Coffee			
8	Rubber			
9	Pepper			
10	Cashew			
11	Other perennial industrial crop			
Fruit trees and others				
1	Citrus fruits			
2	Pineapples			
3	Bananas			
4	Mangoes			
5	Apples			
6	Papaya			
7	Longan, litchis, rambutans			
8	Sapodilla			
9	Jackfruits			
10	Breeding trees/seedlings			
11	Bonsai			
12	Other fruits			

3A1: SUM OF QUESTION 5:

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3A2. INCOME FROM CROP BY-PRODUCTS

1. Has your household used or sold any [...] for 12 months? ASK QUESTION 1 FOR ALL KINDS OF BY-PRODUCTS BEFORE STARTING QUESTION		2. How much did your household sell for the last 12 months? (1000 VND)	3. What is the amount used for your household as animal food, and for other purposes for the last 12 months? (1000 VND)	4. TOTAL CROP BY-PRODUCT VALUE FOR THE LAST 12 MONTHS? (2+3) (1000 VND)
<p>MARK [X] IF THE ANSWER IS YES</p> <p style="text-align: center;"><input checked="" type="checkbox"/></p>				
	Straw, thatch			
	Sweet potato leaves and stems			
	Cassava and maize stems			
	Stems of bean of all kinds			
	Sugarcane leaves and tops			
	Firewood (from agricultural plants)			
	Other crop by-products			

3A 2: SUM OF QUESTION 4:

3A3. CROP PLANTING EXPENDITURE

C O D E	1. On which of the following has your household spent for growing crops in the past 12 months? (including those purchased, bartered, self-generated, given, excluding collecting and picking) ASK QUESTION 1 FOR ALL KINDS OF EXPENSES BEFORE STARTING QUESTION 2 MARK X IF ANSWER IS YES	2. How much has your household spent on the following crops: IF NONE, RECORD 0; IF YOU DON'T REMEMBER DETAILS, RECORD "KB", WRITE TOTAL AMOUNT IN THE TOTAL COLUMN.				
		a. Rice 1000 VND	b. Other food crops, and vegetables 1000 VND	c. Industrial crops 1000 VND	d. Fruit crops and others. 1000 VND	e. Total (a+b+c+d) 1000 VND
	<p>MARK X IF ANSWER IS YES</p> <p style="text-align: center;"><input checked="" type="checkbox"/></p>					
1	Seeds					
2	Saplings					
3	Chemical fertilizers (nitrogenous, phosphate,..)					
4	Organic fertilizers (self-provided and bought)					
5	Pesticides					
6	Herbicides					
7	Small, non-durable tools (sickles, shovel, ...)					
8	Energy, fuel (electricity, petrol, oil, lubricant, ..)					
9	Minor repairs, maintenance					
10	Depreciation of fixed assets					
11	Land rental or contracting					
12	Rental of machinery, equipment and transport					
13	Rental of cattle for plough					
14	Expense for outside hired laborers					
15	Irrigation fee					
16	Agricultural taxes					
17	Payment for cultivation loan interest					
18	Other costs and fees for plant protection, field improvement, extension, administrative management, feed for working cattle.					

3A3. TOTAL PLANTING EXPENDITURE (TOTAL OF QUESTIONS 2e):

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3B: LIVESTOCK BREEDING

1. Has your household raised cattle, poultry and pets for the last 12 months?

YES = 1
NO = 2 (>>SECTION 3C)

3B1. INCOME FROM LIVESTOCK BREEDING

CODE	2. Has your household harvested any of the following products for the last 12 months? ASK QUESTION 2 FOR ALL KIND OF PRODUCTS BEFORE STARTING QUESTION 3 MARK X IF THE ANSWER IS YES	UNIT	3. What was the amount did your household <u>sell</u> , barter, use as payment for wage or give as gifts for the last 12 months?		4. What was the amount did you <u>retain for consumption and other purposes</u> for the last 12 months?		5. THE TOTAL INCOME FROM LIVESTOCK BREEDING FOR THE LAST 12 MONTHS	
			a. Quantity IF NONE WRITE 0 (>>4)	b. Value 1000 VND	a. Quantity IF NONE WRITE 0 (>>5)	b. Value 1000 VND	A. QUANTITY 3a+4a	B. VALUE 3b+4b 1000VND
1	Live-pig pork	Kg						
2	Live buffalo and cow meat	#						
3	Goats	Kg						
4	Chickens	Kg						
5	Ducks, Thai ducks, geese	Kg						
6	Other poultry	Kg						
7	Pigs for breed	#						
8	Buffaloes, oxen, cows for breed	#						
9	Other cattle for breed	#						
10	Poultry eggs (chickens, ducks...)	#						
11	Silkworm cocoons	Kg						
12	Bee's honey (house-raising)	Bottle						
13	Bee nests (sold)	#						
14	Other livestock							
15	Other income from livestock							
16	Livestock breeding by-products							

3B1: TOTAL OF QUESTION 5B:

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3B2. LIVESTOCK BREEDING EXPENDITURE

1. Could you please tell us about your expenditure on livestock breeding for the past 12 months (including those self-generated, bought, bartered or given)

IF NONE, WRITE 0, IF UNABLE TO REMEMBER DETAILS, WRITE "KB", IF ONLY ABLE TO REMEMBER THE TOTAL AMOUNT OR SOME DETAILS, WRITE THE TOTAL AMOUNT AND CORRESPONDING COLUMNS.

	Livestock Expenditure items	1.	2.	3.	4.	5.	6.
		Pigs (1000vnd)	Water buffalo, cows (1000vnd)	Goats (1000vnd)	Poultry: ducks, chicken, geese (1000vnd)	Bees (1000vnd)	Others (specify) (1000vnd)
2	Livestock breeds						
3	Feed						
4	Medicine						
5	Depreciation of fixed assets						
6	Land rental						
7	Rental of means of production						
8	Payment for hired laborers						
9	Loan interest for breeding						
10	Other expenses						
11	TOTAL (2+ 8+...+ 10)						

3B2: SUM OF QUESTION 11

3C: AGRICULTURAL SERVICES

1. Has any of your household members used machine, equipment or tool for farm services for the last 12 months? (such as plough, soil preparation, irrigation, and pest and disease control, rice plucking, semi-processing and other services such as artificial insemination, castration...)

YES1

NO.....2 (>> SECTION 3D)

3C1: INCOME FROM AGRICULTURAL SERVICES

	2. From which of the following activities has your household earn income? MARK X IF ANSWER IS YES	3. What is the number of operating months for the last 12 months? (MONTHS)	4. What is the average monthly income? (1000 VND)	5. TOTAL INCOME (3 X 4) (1000 VND)
	ASK QUESTION 2 FOR ALL KINDS OF ACTIVITIES BEFORE STARTING QUESTION 3			
1	Soil preparation			
2	Irrigation			
3	Pest and disease control			
4	Rice plucking, semi- processing			
5	Other services (artificial insemination, castration...)			

3C1. TOTAL OF Q5:

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3C2: EXPENSES ON AGRICULTURAL SERVICES

COULD YOU TELL US YOUR EXPENDITURE ON AGRICULTURAL SERVICES FOR THE LAST 12 MONTHS ?

(IF NONE WRITE 0, IF UNABLE TO REMEMBER THE DETAILS, WRITE "KB", IF ABLE TO REMEMBR ONLY THE TOTAL AMOUNT OF SOME DETAILS, FILL IN THE CORRESPONDING COLUMNS)

1	On which of the following activities has your household spent for the last 12 months? ASK QUESTION 1 FOR ALL KINDS OF ACTIVITIES BEFORE STARTING QUESTION 2 MARK [X] IF ANSWER IS YES	1. Soil preparation (1000 vnd)	2 Irrigation (1000vnd)	3 Pest and disease control (1000vnd)	4 Rice plucking, semi-processing (1000vnd)	5 Other services (artificial insemination, castration,...) (1000vnd)
	<input checked="" type="checkbox"/>					
2	Expenditure for materials					
3	Small, non-durable items					
4	Energy fuel (electricity, petrol, oil,..)					
5	Minor repairs, maintenance					
6	Fixed assets depreciation					
7	Rental of houses, machines, transportation					
8	Payment for hired outside laborers					
9	Interest of loan for the activity					
10	Business taxes					
11	Other expenditure (marketing, insurance....)					
12	TOTAL OF EXPEDITURE (2+ ...+ 11)					

3C2: TOTAL OF QUESTION 12:

3D: FORESTRY AND HUNTING, TRAPPING AND DOMESTICATING FOREST ANIMAL AND BIRDS

1. For the last 12 months has you household had income from planting/ managing/protecting/ maintaining forests, germinating forestry seedlings, collecting products from forests, harvesting forest trees (bamboos, wood, logincl. those from home garden; hunting, domesticating; forestry service activities)?

YES = 1

NO = 2 (>>SECTION 3E)

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3D1: INCOME FROM FORESTRY, HUNTING, TRAPPING AND DOMESTICATING FOREST ANIMAL AND BIRDS

	2. For the last 12 months has you household had income from MARK [X] IF ANSWER IS YES	3. Quantity	4. Total income/turnover (1000 VND)
From planted forest and forestry contracts			
1	Seedlings (# tree)		
2	Log/timber (m ³)		
3	Fire wood (m ³)		
4	Forest planting contract		
5	Forest protection contract		
6	Other		
From natural forest			
7	Fire wood (man-day)		
8	Hunting, trapping, domesticating forestry animal and birds		
9	Bamboo shoots (Kg)		
10	Leaves for conical head (100 leaves)		
11	Palm leaves (100 leaves)		
12	Rattan (kg)		
13	Medical herb (1000 VND)		
14	Orchard (1000 VND)		
15	Other NTFPs (mushroom, vegetable, ..)		

3D1: SUM OF QUESTION 4

3D2. EXPENDITURE FOR FORESTRY, HUNTING, TRAPPING AND DONESTICATING FOREST ANIMALS BIRDS

	5. Which of the following expenses did your household spend? ASK THIS QUESTION 5 FOR ALL KINDS OF EXPENSES BEFORE STARTING QUESTION 6 MARK X IF ANSWER IS YES	6. Value (1000 VND)
1	Seeds, tree for breeding	
2	All kinds of fertilizer	
3	Non-durable items	
4	Energy, fuel (petrol, rude oil, lubricant, firing, ...)	
5	Repair, maintenance	
6	Depreciation of fixed assets	
7	Rent and bid for land use	
8	Rent asset, machinery equipment, other means of machines	
9	Outside labor cost	
10	Taxes	
11	Other cost (fees, post, advertisement)	

3D2: SUM OF QUESTION 6 :

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3E. AQUACULTURE

1. Has anyone in your household reared fish, shrimp and other aquacultural species; caught aquacultural products from ponds, rivers, and streams; or had income from aquacultural service activities?

YES =1

NO = 2 (>> SECTION 3F)

3E1. INCOME FROM AQUACULTURE

	2. From which of these products has your household had income? ASK QUESTION 2 FOR ALL KINDS OF PRODUCTS BEFORE STARTING QUESTION 3 MARK [X] IF ANSWER IS YES	3. Which has been sold, bartered, uses for payment, used as gifts for the last 12months?		4. Which has been kept for household consumption and other purpose for the last 12 months?		5. THE TOTAL INCOME FROM AQUACULTURE IN THE LAST 12 MONTHS		
		a. Quantity (KG)	b. Value (1000VND)	a. Quantity (KG)	b. Value 1000 VND	a. Quantity (3a+4a) (KG)	b. Value (3b+4b) 1000 VND	
1. Aquacultural raising								
1.1	Fish							
1.2	Shrimp							
1.3	Shrimp and fish for breed							
1.4	Turtles							
1.5	Other aquacultural (specify them)							
2. Aquacultural Catching								
2.1	Fish							
2.2	Shrimp							
2.3	Turtles							
2.4	Other aquacultural (specify them)							
3. Aquacultural services (disease control, ...)								

3E1. SUM OF QUEST 5B

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3E2. EXPENDITURE FOR AQUACULTURE

1. Could you tell us your expenditure on agricultural production services for the last 12 months?
 (IF NONE WRITE 0, IF UNABLE TO REMEMBER THE DETAILS, WRITE "KB", IF ABLE TO REMEMBR ONLY THE TOTAL AMOUNT OF SOME DETAILS, FILL IN THE CORRESPONDING COLUMNS)

	EXPENDITURE (1000 VND)	1. Raising	2. Catching	3. Services
2	Breeds of aquacultural products			
3	Feeds (bought and self-generated)			
4	Small non-durable tools			
5	Energy, fuel (electricity petrol, rude oil, salt, ice,...)			
6	Small repair, maintenance			
7	Depreciation of fixed assets			
8	Rent and bid for land use			
9	Rent of asset machinery equipment other means of production			
10	Payment for hired labor from outside			
11	Payment of for loan interest for agricultural activities			
12	Business taxes			
13	Other expenses (medicines, fees, freight, marketing insurance,..)			
14	TOTAL EXPENDITURE (2+ ..+13)			

3E2: SUM OF QUESTION 14

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3F: TRADES, PROCESS OF AGRICULTURAL, FORESTRY, AND AQUACULTURAL PRODUCTS AND OTHER ACTIVITIES

1. Has your household engaged in other income generating activities such as trade, process of agricultural, forestry and aquacultural products during the last 12 months (excluding Agricultural and Aquacultural services in 3C and 3E)?

YES = 1

NO = 2 (>>SECTION 3G)

3F1: INCOME

Note: Turnover of trading activities does not include original value of the goods!

	2. Pls. Provide us with detailed information on these activities if the household has. MARK [X] IF ANSWER IS YES	3. How many months did this activity in operation? MONTHS	4. What is the average monthly turnover of selling goods and services? 1000 VND	5. Turnover (4X5) 1000 VND	6. What was the value of the products USED by your household? 1000 VND	7. TOTAL (5+6) 1000 VND
1	Trade	<input checked="" type="checkbox"/>				
2	Process of agricultural product	<input type="checkbox"/>				
3	Process of forestry products	<input type="checkbox"/>				
4	Process of aquacultural product	<input type="checkbox"/>				
5	Tailoring, embroidery	<input type="checkbox"/>				
6	Gravel and sand extraction	<input type="checkbox"/>				
7	Transport	<input type="checkbox"/>				
8	Other	<input type="checkbox"/>				

3F1. TOTAL INCOME (SUM OF QUESTION 7 OF ALL ACTIVITIES)

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3F2: EXPENDITURE

Note: Expenditure of trading activities does not include original value of the goods!

	1. Could you pls. Provide us with the information on expenditure for trading and service activities for the last 12 months on each of the following items? (including self-supply, purchase, bartering, receiving....)	Activity marked [X] in 3F1 above:		Activity marked [X] in 3F1 above:		Activity marked [X] in 3F1 above :	
		2. For the past 12 months, on average, how much [...] did you pay for this activity per month?	3. Expense on [...] for the past 12 months? (months in operation * cost per month)	4. For the past 12 months, on average, how much [...] did you pay for this activity per month?	5. Expense on [...] for the past 12 months? (months in operation * cost per month)	6. For the past 12 months, on average, how much [...] did you pay for this activity per month?	7. Expense on [...] for the past 12 months? (months in operation * cost per month)
		1000VND	1000VND	1000VND	1000VND	1000VND	1000VND
8	Materials, sub-materials						
9	Small and no-durable						
10	Electricity, water						
11	Gasoline, oil, petrol,...						
12	Small repair and maintenance						
13	Fixed asset depreciation						
14	Transportation (rent and fee)						
15	Labor costs						
16	Taxes and fees						
17	Other expenditures						
18	TOTAL EXPENDITURE (8+...+ 17)						

3F2: SUM OF QUESTION 18

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3G: OTHER INCOME

1. Could you please provide us with information about your household's other income?

3G1: OTHER INCOMING MONEY WHICH IS CONSIDERED AS INCOME

C O D E	2. For the 12 months, has anyone on your household received money or goods from the following sources? MARK X IF ANSWER IS YES ASK QUESTION 1 FOR ALL INCOME SOURCES BEFORE STARTING QUESTION 2	3. What was the value your household received over the past 12 months? (1000 VND)
	<input checked="" type="checkbox"/>	
1	Remittance and value of in-kind presents from people overseas who are not household members	
2	Domestic remittance and value of in-kind presents from people who are not household members	
3	Pension, one-time sickness and job loss allowance	
4	Social welfare allowance	
5	Income from various types of insurance	
6	Interest of savings, shares, bonds, loans	
7	Income from leasing workshops, machines, assets, equipment... that is not yet counted in trade and business production parts.	
8	Wage-labor income by your household member	
9	Income and support from charity organizations, associations, or firms	
10	Others (specify them:)	
3G1: SUM OF QUESTION 3:		

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3G 2. OTHER INCOMING MONEY, WHICH IS NOT CONSIDERED AS INCOME.

C O D E	<p>1. For the last 12 months, has anyone of your household received money or cash or goods from the following sources?</p> <p style="text-align: center;">MARK X IF ANSWER IS</p> <p>ASK QUESTION 1 FOR ALL INCOMING MONEY SOURCES BEFORE STARTING QUESTION 2</p> <div style="text-align: center;"> <input checked="" type="checkbox"/> X ↓ </div>	<p>2. What was the value your household received over the past 12 months?</p> <p style="text-align: center;">1000 VND</p>
1	Selling means of production (working cattle, reproductive pigs, machines, equipment, workshops), houses, assets, exchanging lands,....	
2	Selling gold, silver, precious stone, jewelry	
3	Withdrawal from savings, stocks, obtaining debts....	
4	Borrowing on interest, advance payment	
5	Others (specify them)	
3G2: SUM OF QUESTION 2		

3H: OTHER INCOME RELATED QUESTIONS

1. Tell us the two most important income sources for your households during the last 12 months?

MARK [X] for the corresponding box

a. Crop production	
b. Livestock raising	
c. Aquaculture	

d. Forestry	
e. Non-farm activities	
f. Other (specify: _____)	

2. Did you household suffer from food shortage during the last twelve months?

YES =1 (>> Q3)

NO = 0 (>> Q4)

3. If answer "YES" : How many months?

_____ MONTHS

4. How much is your outstanding loan at present?

_____ thousand VND

of which:

a. Production loan:

_____ thousand VND

b. Consumption loan:

_____ thousand VND

c. Other loan:

_____ thousand VND

SECTION 4. HOUSING, FIXED PRODUCTION ASSETS AND DURABLE APPLIANCE

4A. HOUSING

1. What type of structure of your house (combined with interviewer's observation)?

Permanent house =1

Semi-permanent house = 2

Temporary house = 3

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4B. FIXED PRODUCTION ASSETS AND DURABLE APPLIANCE

1. Could you please let us know if you have any of the following things?

#	Assets	Mark [X] if YES	2. Quantity	3. How much is the current value? (1000VND)
1	Perennial crops garden (m ²)			
2	Aquaculture production area (m ²)			
3	Buffalo, cow, for production and breeding (#)			
4	Tractor (#)			
5	Breeding male and female pig (#)			
6	Feed grinding and Rice milling machine (#)			
7	Bee nest (#)			
8	Boat			
9	Rice thresher machine (#)			
10	Pesticide spraying machine (#)			
11	Workshop (#)			
12	Shop (#)			
13	Other fixed production asset for IGA			
14	TV (#)			
15	Telephone (#)			
16	Bicycle			
17	Motorbike (#)			
18	Wardrobes with various kinds			
19	Table chairs and sofa (set)			
20	Water well (#)			
21	Hygienic toilet			

----- END-----

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ANNEX 8: LIST OF SURVEY ENUMERATORS

No.	Name	District, commune
1	Ho Deng	Minh Hoa, Trong Hoa
2	Dinh Van Thanh	Minh Hoa, Thuong Hoa
3	Dinh Van Hieu	Minh Hoa, Minh Hoa
4	Bui Thi Bay	Minh Hoa, Quy Sat
5	Dinh Van Dieu	Minh Hoa, Xuan Hoa
6	Dinh Thanh Phuong	Minh Hoa, Yen Hoa
7	Hoang Xuan Binh	Tuyen Hoa, Thach Hoa
8	Pham Van Bao	Tuyen Hoa, Chau Hoa
9	Pham Anh Minh	Tuyen Hoa, Dong Le
10	Nguyen Thi Thuy	Tuyen Hoa, Mai Hoa
11	Ngo Huu Tuong	Tuyen Hoa, Thanh Hoa
12	Tran Thi Nhu Nguyet	Tuyen Hoa, Van Hoa
13	Dinh Thi Hai Yen	Tuyen Hoa, Huong Hoa

ANNEX 9: LIST OF REFERENCE MATERIALS

1. Krantz L. 2001. "The Sustainable Livelihood Approach to Poverty Reduction: An introduction". Division for Policy and Socio-Economic Analysis, Swedish International Development Cooperation agency (Sida).
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4. Poverty data of DOLISA, Quang Binh Province
5. Statistical yearbook of Minh Hoa 2003. Statistical Office, Minh Hoa District
6. Statistical yearbook of Tuyen Hoa 2003. Statistical Office, Tuyen Hoa District