

**Impact of forest land allocation on  
rural livelihoods of Katu and Kinh households in  
Nam Dong district, Central Vietnam**



**Master thesis International Development Studies**

written by

**Mirjam Huizinga**

*Department of Human Geography and Spatial Planning  
Faculty of Geosciences, Utrecht University  
Utrecht, the Netherlands*

**Impact of forest land allocation on  
rural livelihoods of Katu and Kinh households in  
Nam Dong district, Central Vietnam**

**Master thesis International Development Studies**

written by

**Mirjam Huizinga**

supervised by

Dr. P.P.M. Burgers

*Student number: 3091635*

*Graduation date: 31 August 2012*

*Department of Human Geography and Spatial Planning*

*Faculty of Geosciences, Utrecht University*

*Utrecht, the Netherlands*

## ACKNOWLEDGMENTS

My research and this thesis would not have been possible without the time and support of many people who in one way or another contributed to the preparation and completion of this study. I would like to take this opportunity to express my sincerest thanks to each one of them and hereby also mention and thank some people in specific.

First and foremost, I would like to thank Mr Tran Huu Nghi of TBI Vietnam and Dr Duong Viet Tinh of HUAF for inviting me and my research colleagues Ms Lieneke Zuilhof and Ms Anouk van Hoof to Vietnam to conduct our research projects on forest land allocation.

A very special thanks goes out to Mr Tran Nam Tu of HUAF who dedicated much of his valuable time, knowledge and contacts to supporting all three of us in our research projects. I would also like to thank all HUAF staff members who kindly shared their knowledge and expertise with us.

I am grateful to TBI Vietnam for providing us with the financial and logistical means that allowed us to conduct our 3 month field work in the respective research villages. I would hereby also like to extend my thanks to the entire staff of TBI Vietnam for all of their valuable time, support and advice during the entire course of our field work.

Many thanks to Mr Ngo Tri Dung and Mr Le Viet Tam of SNV Vietnam and Dr Peter Dart and Dr Sharon Brown of Queens University for sharing literature, ideas and expertise with us that helped us to develop a better understanding of our research topics and context.

Sincere gratitude is in place when thanking the various facilitators and translators that accompanied us during our field visits. Without their knowledge, skills and support we would not have been able to collect and interpret as much research data as we did.

A very special thanks goes also out to nine HUAF graduate students who conducted a total number of 116 household surveys in the respective research villages of Ms Anouk van Hoof and myself. Thank you all very much Ms Thuy, Ms Thu Hang, Mr Tinh, Mr Phong, Mr Quyet, Mr Duc, Mr Quang, Mr Cuong and Mr Tra for supporting us with your time, skills and good fellowship.

Most grateful I am also for the cooperation we received in the research district, commune and villages and hereby thank all the people who in one way or another contributed to our field work for their participation. Special thanks goes out to the respondents in the research villages for their hospitality and for their willingness to share time, ideas and suggestions with us.

I would like to thank my research colleagues Ms Lieneke Zuilhof and Ms Anouk van Hoof for their good fellowship, their moral support and their friendship during our stay in Vietnam.

Furthermore I would like to express thanks to my supervisor Dr Paul Burgers for his continuous support, feedback and patience during both the research process and thesis writing.

Lastly I sincerely thank my family, partner and dear friends who unconditionally supported me with both patience and encouragement during the completion of this thesis.

*Mirjam Huizinga*

## EXECUTIVE SUMMARY

The Vietnamese forest land allocation policy aims at simultaneously achieving national forest cover rehabilitation and rural poverty reduction by devolving forest rights to the local level. While barren forest land is allocated to individual households for reforestation purposes (i.e. acacia plantations), natural forest land is allocated to either household groups or village communities for management and protection purposes. Forest recipients are entitled to legal land ownership rights (i.e. Red Book Certificate), which are proposed to promote tenure security, sustainable forest management and local livelihood development.

Much of the allocated natural forest land in Vietnam is degraded with limited valuable resources for households to draw upon for their livelihoods. This prompts the question to what extent natural forest land allocation is capable of generating viable sources of income (subsistence and/or cash) for local households. A similar question may be posed related to the potential of household acacia plantations. Largely due to inadequate information and know-how (e.g. high quality/high yield species, appropriate land-use techniques, available markets), the concept of household acacia plantations seems not to have flourished yet in Vietnam. Further questions may be asked about whether or not benefits (if any) of forest land allocation are equally available to forest-using people in Vietnam (i.e. heterogeneous group in terms of ethnicity, wealth, geographical location, etc.). Poor households are expected to benefit least from forest land allocation. This leaves ethnic minority groups most disadvantaged, as these households are disproportionately poor compared to the Kinh people (i.e. ethnic majority group) in Vietnam.

In order to create transparency in how different ethnic groups shape their forest-related livelihoods in Vietnam and how forest land allocation may impact these livelihoods, a case study was conducted posing the following central research question:

*What is the impact of forest land allocation on the rural livelihoods of the Katu households (i.e. ethnic minority) of village 4 'A-Ro' and the Kinh households (i.e. ethnic majority) of village 6 'Vinh Hung' in Thuong Quang commune, Nam Dong district, Central Vietnam?*

The hypothesis is that Katu households have less access to levels and combinations of livelihood capitals, therefore have less choice in pursuing livelihood activities, therefore attribute different roles and levels of importance to forest-use and management practices and thus experience different levels of benefits of FLA in comparison to the Kinh.

### Conclusions on the rural livelihoods of the Katu and Kinh in the research villages

Comparative analysis on livelihood capitals and activities concludes that the Kinh and Katu show high degrees of homogeneity. Both ethnic groups have access to a similar set of diversified natural assets and also show similar percentages of households drawing on these for their livelihoods. The Kinh and Katu differ however in terms of the average size of land plots, these are about 1.3 times larger among the Kinh. Also the percentage of Kinh households that possess physical assets (e.g. motorbike and buffalo) is on average 1.5 times higher than that of the Katu. Although similar percentages are shown of households able to accumulate cash savings in 2007, the Kinh report household savings of over twice as high as those of the Katu. In terms of human capital however, the Kinh and Katu show much similarity with an average labour capacity of 2 household members, and literacy rates among household heads of about 80%. Research further concludes that within the livelihood portfolios of both the Kinh and Katu in the research villages, agricultural practices have a more prominent place than (natural and plantation) forest-use practices. Benefits of (natural and plantation) forest-use practices increasingly need to compete with benefits derived from other livelihood activities.

### Conclusions on natural forest land allocation in the research villages

The natural forest land that is allocated to Katu village 4 and Kinh villages 6 appears primarily of poor quality. Both research villages received 2 natural forest plots for management and protection purposes and 1 plot of bare land for the establishment of a commercial acacia plantation. Research shows that Kinh village 6 was allocated a total natural forest area (204.5 ha) of over three times as large as the natural forest area (60.3 ha) that was allocated to Katu village 4.

The natural forest management models in the research villages have been chosen by the government and the development organisations (i.e. Helvetas and SNV) that supported the implementation of FLA in both villages. While the Katu in village 4 have to manage the 60.3 ha natural forest area with the entire village community, only 34% of Kinh households in village 6 is responsible for the much larger 204.5 ha natural forest land. Research shows mixed levels of satisfaction about these CFM models (village community versus common-use household groups) among the Katu and Kinh. While in Kinh village 6 some households regret not being part of the common-use household groups, many Katu households in village 4 appear disillusioned with the poor benefits of village forest management. Also the mechanisms of payments and benefit-sharing from village forest management are not yet transparent in Katu village 4. Both the Kinh and Katu seem not entirely aware of all costs and benefits related to their CFM model and are therefore not yet able to maximise levels of economic efficiency, equity in benefit-sharing and sustainable forest management.

## Conclusions on plantation forest allocation in the research villages

In both research villages the allocation of plantation forest land took place between 2004 and 2005. Upland fields used for swidden cultivation were reclaimed by the FPU and reclassified as plantation forest land. The CPC further redistributed the plantation forest land to individual households in the research villages for the purpose of establishing commercial acacia plantations.

Research shows that a total of 10 Katu (33%) and 15 Kinh (37%) households do not own any plantation forest land for acacia. Wealth characteristics of respective households show that people without acacia land are not per definition poor. While poor households often lack labour capacity and capital to be eligible for plantation forest land allocation, the medium- and better-off Kinh and Katu may well have made a conscious decision on not to invest in acacia plantations but allocate time, labour and capital to other livelihood activities instead. Both the Kinh and Katu households in the research villages have access to a diversified livelihood portfolio; this context makes it possible for them to make such livelihood choices.

Research shows a total of 20 Katu (67%) and 26 Kinh (63%) households that do have plantation land for acacia. However, within this group respectively 4 Katu and 6 Kinh households have not yet planted trees on their allocated land. As planting acacia trees is a prerequisite for obtaining land ownership rights (RBC), these households may well fail to secure their plantation forest land. A majority of 16 Katu and 20 Kinh households did however manage to secure their plantation forest land. Respective households planted acacia trees on their land between 2003 and 2007. All but 2 households established these acacia plantations with their own capital. Household investments in acacia appear 1.8 times larger among the Kinh compared to investments made by the Katu. Yet when we compare the average investments of both the Kinh and Katu to the proposed standard for traditional acacia plantations in Vietnam, neither one of these levels appear suffice for providing households with high economic benefits. Household investments in the second acacia tree crop are however likely to be more in line with the suggested standard, as households may reinvest the profits from their first acacia tree harvest in their acacia plantation. These profits alone are not likely to be sufficient though, yet in combination with household savings and/or household credit, maximum investments in acacia plantations may be achieved. In addition to the latter, benefits from acacia plantations may also be increased by intercropping acacia trees with agricultural food crops (e.g. cassava, corn, upland rice) or domesticated NTFPs. Such agro-forestry systems may provide households with several important benefits: plantation forest land tenure security, minimum investments in acacia; stable subsistence and/or cash income low-risk food or tree crops.

## TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iii
EXECUTIVE SUMMARY	iv
LIST OF BOXES, FIGURES AND TABLES	x
ACRONYMS	xi
CHAPTER 1: INTRODUCTION	1
CHAPTER 2: THEORETICAL FRAMEWORK	3
2.1 Introduction	3
2.2 Forest poverty linkages	3
2.3 The concept of sustainable livelihoods	4
2.3.1 <i>The sustainable livelihood approach (SLA)</i>	4
2.3.2 <i>Dimensions of livelihood sustainability</i>	6
2.3.3 <i>Livelihood sustainability and poverty alleviation</i>	7
2.4 Forest-related livelihoods	7
2.4.1 <i>Groups of beneficiaries: forest-using people</i>	8
2.4.2 <i>Forest products (high and low rent) and services</i>	9
2.4.3 <i>Role of forest benefits in rural livelihood strategies</i>	12
2.4.4 <i>Management of forests</i>	14
2.5 Conclusion	16
CHAPTER 3: THEMATIC GEOGRAPHICAL CONTEXT	18
3.1 Introduction	18
3.2 Forest processes and policies	19
3.3 Forests, people and poverty in Vietnam	20
3.3.1 <i>Poverty and ethnic minorities</i>	20
3.3.2 <i>Forest-use in rural upland livelihoods</i>	23
3.4 Forest land allocation in Vietnam	25
3.4.1 <i>Forest classification and utilisation</i>	26
3.4.2 <i>Forest devolution: policies and programs</i>	27
3.4.3 <i>First effects of forest land allocation in Vietnam</i>	29
3.5 Conclusion	31

CHAPTER 4: RESEARCH METHODOLOGY	33
4.1 Introduction	33
4.2 Research rationale	33
4.3 Research questions	35
4.4 Research area and site selection	36
4.4.1 <i>Selection of research commune and villages</i>	37
4.5 Data collection methods	38
4.5.1 <i>Participatory research methods</i>	39
4.5.2 <i>Household survey and semi-structured household interviews</i>	39
4.5.3 <i>Reliability and validity</i>	40
4.6 Research dilemmas and challenges	41
 CHAPTER 5: FOREST LAND ALLOCATION IN THE RESEARCH VILLAGES	 43
5.1 Introduction	43
5.2 Forest land use planning and allocation in Thuong Quang commune	43
5.3 The allocation of natural forest land in the research villages	45
5.3.1 <i>Natural forest land allocation in Katu village 4</i>	46
5.3.2 <i>Natural forest land allocation in Kinh village 6</i>	49
5.4 The allocation of plantation forest land in the research villages	52
5.5 Conclusion	53
 CHAPTER 6: RURAL LIVELIHOODS IN THE RESEARCH VILLAGES	 56
6.1 Introduction	56
6.2 Socioeconomic context of Thuong Quang commune	56
6.2.1 <i>Livelihood practices in Thuong Quang commune</i>	57
6.2.2 <i>Poverty in Thuong Quang commune</i>	57
6.3 Livelihood capitals in the research villages	59
6.3.1 <i>Human capital in the research villages</i>	59
6.3.2 <i>Physical capital in the research villages</i>	61
6.3.3 <i>Financial capital in the research villages</i>	63
6.3.4 <i>Natural capital in the research villages</i>	65
6.3.5 <i>Social capital in the research villages</i>	67
6.4 Livelihood activities in the research villages	68
6.4.1 <i>Agricultural practices in the research villages</i>	69
6.4.2 <i>Forest practices in the research villages</i>	71
6.4.3 <i>Gender division of livelihood activities in the research villages</i>	76
6.5 Conclusion	76

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS	81
7.1 Introduction	81
7.2 Conclusions on natural forest land allocation in the research villages	82
7.2.1 <i>Allocated natural forest land: similar in quality, different in quantity</i>	82
7.2.2 <i>Natural forest management models: village community versus household groups</i>	83
7.2.3 <i>A closer look at the two CFM models: household responsibilities and benefits</i>	84
7.3 Conclusions on plantation forest land allocation in the research villages	88
7.3.1 <i>Differentiated outcomes of land security: no land, land but no trees, land with trees</i>	88
7.3.2 <i>Household acacia forest plantations: the actual and potential economic benefits</i>	90
7.4 An overall synthesis of FLA impacts on the rural livelihoods of the Kinh and Katu	92
7.5 Recommendations for further research	94
REFERENCES	95
APPENDICES	102
Appendix I List of interviewees	102
Appendix II Overview field visits and research activities	103
Appendix III Household questionnaire	104
Appendix IV Tabulated survey results	117

## **LIST OF BOXES, FIGURES AND TABLES**

### ***BOXES***

Box 2.1: Five livelihood capitals

### ***FIGURES***

Figure 2.1: Sustainable Livelihood Framework (SLF)

Figure 3.1: Dynamics of total forest area and forest cover in Vietnam, 1943-2008

Figure 3.2: Poverty in Vietnam and areas of natural forest cover in Vietnam

Figure 3.3: Rationale for forest land allocation in Vietnam

Figure 3.4: Forest classification and management regulations in Vietnam

Figure 3.5: National policies affecting forest rehabilitation in Vietnam 1991-2006

Figure 4.1: Conceptual framework

Figure 4.2: Map of Thua Thien Hue province and its districts

Figure 4.3: Map of Nam Dong district and its communes

Figure 5.1: Allocated natural forest to the community of Katu village 4

Figure 5.2: Allocated natural forest to the household groups of Kinh village 6

Figure 6.1: Age distribution of household heads in the research villages

Figure 6.2: Distribution of household savings in 2007 (VND)

Figure 6.3: Distribution of household borrowings in 2008 (VND)

Figure 6.4: Distribution of exploited land for acacia plantations (ha)

### ***TABLES***

Table 2.1: The importance of different forest benefits to different groups

Table 2.2: Direct roles of forest in rural household livelihood strategies

Table 5.1: Forest land use planning in Thuong Quang commune, 2003-2010

Table 5.2 Possible forest land allocation contexts in Thuong Quang commune

Table 6.1: Classification of household wealth in Thuong Quang commune, 2002

Table 6.2: Highest level of education of household head in the research villages

Table 6.3: Number of buffalos owned by households in the research villages

Table 6.4: Natural assets of Katu and Kinh households in the research villages

## ACRONYMS

<b>ACIAR</b>	Australian Centre for International Agricultural Research
<b>CFM</b>	Community Forestry Management
<b>CPC</b>	Commune People's Committee
<b>DARD</b>	Department of Agriculture and Rural Development (provincial level)
<b>DFID</b>	Department for International Development
<b>DPC</b>	District People's Committee
<b>ETSP</b>	Helvetas' Extension and Training Support Project for forestry
<b>FLA</b>	Forest land allocation
<b>FPU</b>	Forest Protection Unit (district level)
<b>GDP</b>	Gross Domestic Product
<b>HEPR</b>	Hunger Eradication and Poverty Reduction program
<b>HH</b>	Household
<b>HUAF</b>	Hue University of Agriculture and Forestry
<b>LUP</b>	Land use planning
<b>LUPLA</b>	Land use planning and land allocation: method used by SNV
<b>MARD</b>	Ministry of Agriculture and Rural Development
<b>MRC</b>	Mekong River Commission
<b>MONRE</b>	Ministry of Natural Resources and Environment
<b>NGO</b>	Non Governmental Organisation
<b>RBC</b>	Red Book Certificate
<b>SFE</b>	State Forest Enterprise
<b>SFL</b>	Sustainable Livelihoods Framework
<b>SNV</b>	Netherlands Development Organisation
<b>TBI</b>	Tropenbos International
<b>UU</b>	Utrecht University
<b>VFMB</b>	Village Forest Management Board
<b>VND</b>	Vietnamese Dong (exchange rate in June 2008: 1 Euro = 25,000 VND)
<b>5MHRP</b>	5 Million Hectares Reforestation Program

**CHAPTER 1: INTRODUCTION**

Vietnam has a total natural area of almost 33.2 million hectares and over half of this area (i.e. about 19 million hectares) is classified as forest land (Socialist Republic of Vietnam, 2007, p. ii). During the past decades much of this forest land has been subject to deforestation, among others caused by overexploitation of commercial timber, shifting cultivation, infrastructure development, forest fires and devastation by war (MRC, 2003). Natural forest land still accounted for 43% of national territory in 1943, yet around the 1990s Vietnam's forest cover had decreased to a level of 27% (Jong de, Do Dinh Sam, Trieu Van Hung, 2006). Due to various forest rehabilitation programs (e.g. Program 327, 5MHPR) the forest cover in Vietnam however managed to increase again; available data show a national forest area of 12.7 million hectares in 2005 (i.e. 37% forest cover). The Vietnamese government aims to reach a national forest cover of as much as 47% by the year 2020 (Socialist Republic of Vietnam, 2007).

In Vietnam most natural forests are located in mountainous areas, which are inhabited by approximately 25 million people (Socialist Republic of Vietnam, 2007). Most of these upland people belong to an ethnic minority group; the much smaller proportion of Kinh people (i.e. ethnic majority group) migrated to the upland forest areas in the late 1950s and 1960s and shortly after Vietnam's reunification in 1976 (Persoon, 2004). Vietnam's upland population draws, to a lesser or greater extent, on forest resources for their livelihoods. Forest resources are estimated to account for 20% of household income (subsistence and cash) among forest-using people (Jong de, Do Dinh Sam, Trieu Van Hung, 2006).

Although the national forest cover has increased over the past decades, the quality of forest resources still appears poor in Vietnam. Forest-using households seem therefore limited in their potential to develop viable rural livelihoods. For latter reason, forest conservation and poverty reduction have increasingly become integrated goals of several important development programs and policies in Vietnam. One of these includes the forest land allocation policy that was promulgated in 1993. By actively involving local communities, individual households or groups of households in forest management systems, the Vietnamese government aims to simultaneously promote local livelihood development and forest rehabilitation in the forested rural areas (Socialist Republic of Vietnam, 2007).

This study seeks to create more transparency in the extent and type of benefits that may have become available to local households from forest land allocation. An answer is also sought to the question whether or not these benefits (if any) are in fact equally available to all forest-using households in Vietnam (i.e. heterogeneous group in terms of ethnicity, wealth, geographical location, etc.). Poor people are expected to benefit least from forest land allocation, which leaves ethnic minorities most disadvantaged, as these households are disproportionately poor compared to the Kinh majority in Vietnam (e.g. Huynh Tu Ba, 2002; Sunderlin & Huynh Thu Ba, 2005; Baulch et al., 2007).

In order to uncover the impact of forest land allocation on the rural livelihoods of two different ethnic groups of forest-using people in Vietnam, following central research question was posed:

*What is the impact of forest land allocation on the rural livelihoods of the Katu households (i.e. ethnic minority) of village 4 'A-Ro' and the Kinh households (i.e. ethnic majority) of village 6 'Vinh Hung' in Thuong Quang commune, Nam Dong district, Central Vietnam?*

This thesis presents the main findings that are derived from the case study in the two research villages in Nam Dong district in Central Vietnam. Chapter 2 starts out with providing a theoretical framework based on the interlinked concepts of forests, poverty and livelihoods. This chapter illustrates the various groups of forest-using people and discusses the potential roles and benefits of different types of forest resources in the rural livelihoods. Chapter 3 continues with presenting the general forest and poverty context in Vietnam. This chapter seeks more insight in the dynamics of forest-related livelihoods in Vietnam and discusses some first effects of the forest land allocation policy. Special reference is made to the livelihoods of ethnic minorities, as these account for the majority of Vietnam's forest-using population. Chapter 4 presents the main components of the research methodology used in this case study and gives reference to the research rationale, the selection of research sites, and chosen methods of data collection. Also a brief discussion on the most relevant research challenges and their possible bearing on results is included in this chapter. Chapter 5 and 6 further present the research results from this case study. Chapter 5 sheds light on how the process of forest land allocation took place in the research villages, what kind of management models are used, and what benefits and costs are perceived following natural and plantation forest land allocation. Chapter 6 continues with placing the research findings on forest land allocation in the wider context of the rural livelihoods of the Kinh and Katu. This chapter presents the kinds and levels of livelihood capitals and activities that are available to the Kinh and Katu and further discusses how these relate to the role, importance and potential of forest resources in their livelihoods. Throughout both chapter 5 and 6 a continuous comparison is made between the Kinh and Katu households in order to distil the main differences and/or commonalities between these ethnic groups. Chapter 7 finally concludes this thesis with presenting and discussing the main conclusions that came forward from this case study followed by some of the most relevant recommendations for further research.

**CHAPTER 2: THEORETICAL FRAMEWORK****2.1 Introduction**

Rural livelihood improvement and poverty alleviation are important objectives of the forest land allocation policy in Vietnam (Socialist Republic of Vietnam, 2007). In order to assess to what extent and in what way forest land allocation impacts rural livelihoods, it is necessary to first detangle some key concepts and questions that dominate the forest-poverty debate. What is the actual and potential role of forests in rural livelihoods? What is meant by forest-dependency and who are forest-dependent people? Are forest-using people poor because of the forest, or is the forest a last resort for poor people? Are forest resources poverty traps, safety nets or pathways out of poverty for the rural poor? This chapter seeks to illustrate and discuss the complex linkages between forests, people, livelihoods and poverty alleviation.

**2.2 Forests-poverty linkages**

It is only since the past decade, that the interest in both environmental and development issues regarding tropical forests and its people have converged. Besides an ecological interest in the preservation of forests around the world, an equal interest arose in the well-being and livelihoods of the people living in and around the forest (Roe, 2008). Worldwide, over a billion people directly depend on natural resources for their survival; most of these forest-dependent people are extremely poor and have to live of less than \$1 a day (WRI, 2005). Over the past decade it became apparent that the geography of poverty and the geography of natural forests largely overlap. This started an important debate on why forests are home to so many poor people (e.g. Arnold & Bird, 1999; Wunder, 2001; Angelsen & Wunder, 2003; Sunderlin, Angelsen & Wunder, 2004; Sunderlin et al., 2005)?

Sunderlin et al. (2005) distilled some logical linkages between poverty and natural forests. A first reference is made to the many poor and vulnerable people that fled to the forests in times of war or conflict. A second linkage refers to the low entry barriers of forests, that make these open access resources (i.e. natural resource over which no property rights have been recognised; Bromley, 1991) easy accessible, also for the poor. Poor people generally have very limited livelihood options (e.g. no access to markets for skilled labour, lack of cash or credit for self-employment; Vedeld et al., 2004), and forests often function as a last resort for creating a livelihood. Sunderlin et al. (2005) also refer to the specific characteristics of forest-using population groups. Forest dwellers for example, mostly indigenous people that live in and with the forest according to their own traditions, often concern the poorest of the poor. Poverty among these forest dwellers is said to be inherent to their indigenous way of life (Byron & Arnold, 1997). Another group of forest-using people includes rural in-migrants, often farming households living close to the forest frontiers. Although rural in-migrants are generally not the

poorest of the poor, their livelihood development faces important constraints due to the isolated location of forests (Byron & Arnold, 1997). It is this isolated location of forests that Sunderlin et al. (2005) refer to as a final linkage. Remote locations generally lack sufficient infrastructure, and proper access to services and markets. This constraints forest-using people from maximising livelihood opportunities and benefits.

These logical linkages illustrate a two-way interaction between the geography of poverty and natural resources. Thus the fact why forests are home to so many poor people, appears to be related to both characteristics of the forest and to characteristics of the people using the forest.

### **2.3 The concept of sustainable livelihoods**

The concept of sustainable livelihoods was first introduced by the Brundtland Commission on Environment and Development in 1987. This was part of a broader debate on sustainable development, which connected views on economic development to sustainable resource management and poverty alleviation (Solesbury, 2003). This broader focus on development included, in addition to economic growth, also human development aspects, such as vulnerability and social exclusion (Krantz, 2001), and aspects of sustainability. In the 1980s and early 1990s, international development thinking embraced a more people-centred, participatory and poverty focussed approach (Solesbury, 2003).

#### **2.3.1 *The sustainable livelihood approach (SLA)***

Much of the groundwork on the concept of sustainable livelihoods was laid by Chambers & Conway (1992). Important pillars of their work included ideas of capability (Sen, 1987) equity and sustainability. Chambers & Conway (1992, p. 6) provided an important working definition of sustainable livelihoods:

*“A livelihood comprises people and their capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term”.*

The above stated working definition provided an important basis for other thinkers, researchers and authors in the arena of sustainable livelihoods (e.g. Scoones, 1998; Carney et al., 1999; DFID, 1999; Ellis, 2000; Neefjes, 2000). It was Scoones (1998) that first operationalised the concept of sustainable livelihoods by introducing an analytical framework. This so-called sustainable livelihood framework

(SLF) was even adopted and slightly adapted by the Department For International Development (DFID) of the United Kingdom and made central in its strategies for international development (Solesbury, 2003). Also several other international development organisations (e.g. UNDP, CARE, OXFAM) adopted the sustainable livelihood approach as an important basis for their work in rural development and poverty alleviation during the 1990s (Carney et al., 1999; Krantz, 2001).

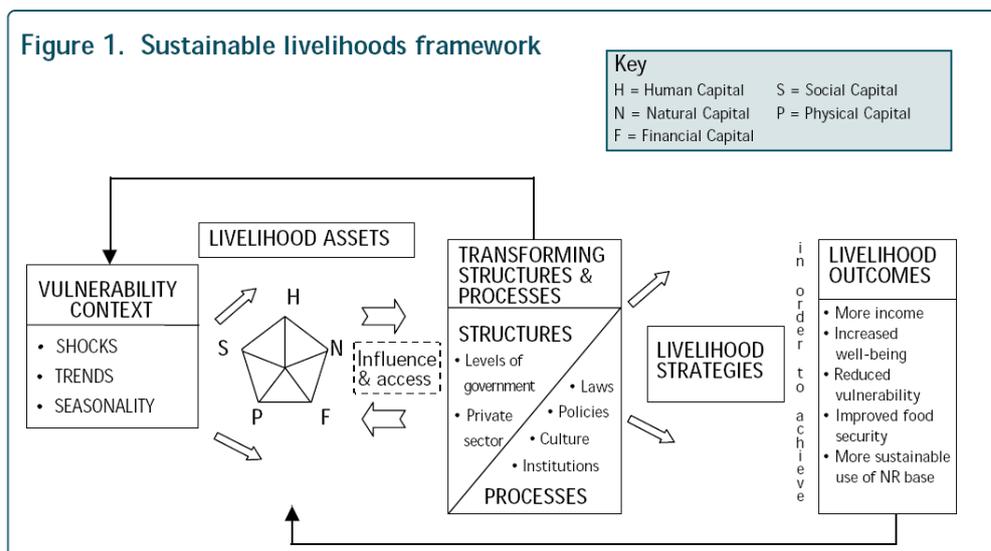
**Box 2.1: Five livelihood capitals**

Natural capital	<i>natural resource stocks and environmental services;</i>
Financial capital	<i>cash, credit, savings or a loan;</i>
Human capital	<i>skills, knowledge, labour capacity, health and physical capability;</i>
Social capital	<i>networks, social claims, relations and associations;</i>
Physical capital	<i>food stock, livestock, equipment, tools and machinery.</i>

Source: Scoones, 1998, pp. 7-8

The sustainable livelihood framework (SLF) is centred around five livelihood capitals (i.e. natural, financial, human, social and physical capital) (see Box 2.1). These livelihood capitals are sometimes also referred to as livelihood assets, resources or endowments and give people the capability to be and to act (Chambers & Conway, 1992; Scoones, 1998; Carney et al., 1999). Bebbington (1999, p. 2022) describes livelihood capitals as “vehicles that enable people to make a living, make their living meaningful and challenge the structures and processes (see Figure 2.1: Transforming Structures & Processes) under which they make a living”.

**Figure 2.1: Sustainable Livelihood Framework (SLF)**



Source: DFID, 1999, p. 1

Livelihood capitals are the building blocks of livelihoods, yet in no way are these capitals static (Bebbington, 1999). Scoones (1998) refers to livelihood capitals as contextual and dynamic of nature

and subject to substitution and trade-offs. Different people may have different access to different forms and combinations of livelihood assets and different people may experience different trade-offs that either have positive or negative implications on their livelihoods (Scoones, 1998).

### 2.3.2 *Dimensions of livelihood sustainability*

When are livelihoods sustainable? Scoones (1998) refers to sustainable livelihoods as a normative concept as perceptions on sustainability may differ in different contexts and on different levels of scale. Chambers & Conway (1992) operationalised the concept of livelihood sustainability along the dimensions of environmental, social and intergenerational sustainability.

The level of environmental sustainability of livelihoods depends in the most general sense on the question whether livelihood activities maintain and enhance (e.g. soil fertility, tree planting) or degrade (e.g. soil erosion, deforestation) the natural resource base (Chambers & Conway, 1992). Neefjes (2000) links questions about environmental sustainability directly to questions about livelihood opportunities and livelihood risks. On the one hand people depend on natural resources for their survival, yet at the same time their livelihoods are threatened by the environment in the form of natural hazards. Blaikie & Brookfield (1987) address the political ecology of natural resources in the sense that the perception of sustainability may differ in various contexts. What may appear degraded and low-value land to one group in a particular context (i.e. environmentally unsustainable), may well be perceived as valuable by other groups of land users (i.e. environmentally sustainable).

The dimension of social livelihood sustainability finds ground in the combination of livelihood assets and capabilities a household has access to in order to maintain and enhance their livelihoods and cope with and recover from stresses and shocks (see figure 2.1: Vulnerability Context) (Chambers & Conway, 1992). In livelihood literature (e.g. Chambers & Conway, 1992; Scoones, 1998; Krantz, 2001) ‘stresses’ are often defined as continuous and predictable pressures, such as seasonal shortages and declining resources. ‘Shocks’ are mostly regarded as unpredictable and sudden impacts on livelihoods, such as fires, floods and epidemics. De Haan (2000) refers to ‘shocks’ as violent and unexpected, while ‘stresses’ are less violent but last longer. DFID (1999) adds ‘trends’ (e.g. environmental, economic, demographic, political trends) as a third category to the vulnerability context (see figure 2.1). Contrary to ‘shocks’ and ‘stresses’, ‘trends’ do not necessarily cause livelihood vulnerability or present livelihoods with negative impacts.

The third dimension of sustainable livelihoods, intergenerational sustainability, refers to maintaining and enhancing the assets and capabilities that future generations need to sustain their livelihoods (Chambers & Conway, 1992). Neefjes (2000) questions the feasibility of intergenerational sustainability in different contexts (e.g. industrialised countries versus developing countries; secure people versus vulnerable people). Most poor and vulnerable people are first and foremost concerned

with their immediate survival. Careful consideration of how livelihood strategies will impact future generations is often a luxury that most of the rural poor cannot afford (Neefjes, 2000).

### **2.3.3 *Livelihood sustainability and poverty alleviation***

Livelihood sustainability and poverty alleviation are very much interrelated as higher levels of livelihood sustainability will increase the chance that people are able to move out of poverty (Scoones, 1998). The more choice and flexibility people have in their livelihood strategies (i.e. combination of livelihood activities and choices), the better people will be able to create change and continuity in their livelihoods (DFID, 1999). Ellis (2000) refers to this as livelihood diversification (i.e. adoption of a range of different livelihood activities) and puts this strategy forward as a way to achieve high levels of livelihood sustainability and poverty alleviation. As livelihood diversification increases options to spread risk and enables people to substitute different livelihood components, it makes vulnerable and poor people more resilient to externalities (Ellis, 2000).

Also access to and control over different levels and combinations of livelihood capitals are essential for maximising livelihood objectives (see Figure 2.1: Livelihood Outcomes)( DFID, 1999). Access to and control over resources are especially important when livelihood assets are not privately owned. This is often the case with natural resource bases that generally fall under communal ownership (de Haan, 2000). The importance of access to and control over natural resources is echoed by Leach et al. (1999) in their writings about environmental endowments (i.e. rights and resources people have) and entitlements (i.e. following Sen's definition (1984, p. 497) "the set of commodity bundles a person can command in a society using the totality of rights and opportunities he or she faces"). In order to reap benefits of natural resources, people need to be able to transform environmental endowments into entitlements. For this to take place, people first need to be aware of their rights and opportunities. Second, people must be willing and able to claim their rights. And third, people must have the capabilities to take advantage of their rights and opportunities (de Haan, 2000). Shankland (2000) highlights the importance of a legal framework being present to help facilitate this process of transforming environmental endowments into entitlements. Krantz (2001) adds that besides formal structures (e.g. policy, legislation), it are just as much, if not more, informal structures (e.g. social dominance, power relations) that define people's level of access to and control over natural resources.

## **2.4 Forest-related livelihoods**

Natural forests around the world provide important sources of livelihood for many of the rural poor. Not all people necessarily make use of the forest in the same way and on the same level.

Angelsen and Wunder (2003) put forward five dimensions along which forest benefits in rural livelihoods can be categorised and assessed:

- I. Look at groups of beneficiaries;
- II. Evaluate types of forest products and services;
- III. Distinction between high and low rent forest products;
- IV. Differentiate the role of forest benefits in the household economy or livelihood strategy (e.g. subsistence use versus cash income; gap filling versus regular use);
- V. Extent of resource management (i.e. from pure natural forest extraction to lightly managed and planted forests/forest products).

Next sections will briefly discuss these dimensions together with their bearings on the type and size of potential forest use and benefits in rural livelihoods (NB: dimensions II and III are combined). It is important to note that following sections draw heavily on leading forest-poverty literature (e.g. Byron & Arnold, 1997; Arnold, 2001; Wunder, 2001; Angelsen & Wunder, 2003; Sunderlin, Angelsen & Wunder, 2004, Sunderlin et al., 2005).

### ***2.4.1 Groups of beneficiaries: forest-using people***

While for some people the forest is a dominant source of subsistence (i.e. forest dependent people), for others, forest products are merely a supplementary resource (i.e. forest related people) in their livelihood portfolio. Byron & Arnold (1997) illustrate this through a typology that features some general characteristics of different forest-using population groups (NB: as rural livelihoods are the scope of this research, the ‘urban poor’ as a fourth group of beneficiaries will not be discussed).

#### Forest dwellers

Although not the largest group of forest-using people in numbers, forest dwellers do represent the group with the highest level of forest dependency (Arnold, 2001). Forest dwellers depend heavily on forest resources for subsistence with hunting, gathering and shifting cultivation (i.e. clearance of forest land for agricultural purposes) as main livelihood activities (Byron & Arnold, 1997). The forest is an important basis for their rotational agricultural systems (Burgers, Ketterings & Garrity, 2005). Forest dwellers are most often indigenous population groups, that live in and with the forest according to their own traditions, making the forest also an important part of their social and cultural systems (Arnold & Bird, 1999).

### Farmers living adjacent to forests

A larger proportion of forest-using people is made up by farmers living at the forest frontiers (Arnold, 2001). Within this group, it are primarily the poor and landless farmers that still rely greatly on forest resources for their livelihoods. Wealthier farmers on the other hand, are less dependent on the forest as their livelihoods are predominantly based on sedentary agriculture. For them, forest products merely function as a supplementary source of income and forest products are gathered or produced (i.e. smallholders) only in times when market demand for certain forest products is high (Arnold & Bird, 1999). While the poor forest farmers derive a greater share of their livelihood from forest products, the wealthier forest farmers, with more resources for forest gathering and production, are the heaviest forest users (Arnold, 2001).

### Commercial forest users

Commercial forest users do not necessarily live in or near the forest, but do indirectly draw on the forest for (part of) their livelihoods through commercial forest activities, such as the production, processing and sale of forest products (Byron & Arnold, 1997). Poor farming households often undertake low-skill and low-capital commercial forest activities (e.g. basket making, fuel wood vending) on a part-time basis. Wealthier rural households are generally involved in the more specialised commercial forest activities, that are more capital and skill intensive, on a more full-time workshop basis (Arnold, 2001).

### **2.4.2 Forest products (*high and low rent*) and services**

Natural forests can provide people with different (high and low rent) forest products and services. The relative importance and benefits of these in rural livelihoods can be categorised and assessed according to five principal modes of forest use (Sunderlin, Angelsen & Wunder, 2004; Sunderlin et al., 2005).

### Conversion of forests in agricultural land

Fertile forest land provides forest farming communities with important livelihood benefits through its conversion in agricultural land, either for shifting or (semi) permanent agricultural purposes (Sunderlin, Angelsen & Wunder, 2004). Indigenous forest farmers clear forest land to practice shifting cultivation, primarily for subsistence purposes. For many generations, these indigenous forest dwellers were able to sustain their livelihoods without causing large-scale deforestation by maintaining ecological, economical en nutritional sustainable agro-forestry systems (Burgers, Ketterings &

Garrity, 2005). Due to increasing population numbers however, both by growth and in-migration, the preconditions for sustainable indigenous shifting cultivation systems are deteriorating (Cairns & Garrity, 1999). Also in-migrant forest farmers open up forest land for the cultivation of both agricultural subsistence produce and cash crops. The forest farming practices of this group are often regarded as unsustainable as farming systems do not include crop rotation or fallow management. Instead, when soil fertility is low, agricultural lands are abandoned and new forest land is opened up, causing increasing deforestation (Burgers, Ketterings & Garrity, 2005).

### Timber extraction

As a high economic rent forest product, timber is commercially one of the most valuable forest resources (Sunderlin et al., 2005). It are mostly the wealthier rural households that are involved in timber extraction, as this livelihood activity is very capital-, skill-, and technology intensive. Large economies of scale, specialised skills and market connections are required to enter and compete in the often specialised timber markets (Angelsen & Wunder, 2003). In addition, timber extraction is subject to substantial risks (e.g. price fluctuations, tenure insecurity, natural hazards), and characterised by long-term investment periods with little intermediate returns (Sunderlin, Angelsen & Wunder, 2004)). Insecure land tenure, lack of (bargaining) power and limited market access are some of the most important constraints that exclude poor households from engaging in timber extraction (Angelsen & Wunder, 2003). Sunderlin et al. (2005) however believe that village management of natural forest area could increase opportunities for the poor to reap benefits from timber extraction as it would provide them with secure land tenure and economies of scale. Also smallholder tree growing schemes are believed to be feasible and beneficial to the poor (Sunderlin et al., 2005) as it incorporates some important pro-poor characteristics. The flexible harvesting time of timber for example, allows households to combine tree growing with other livelihood activities. Also multiple use systems (e.g. agro-forestry systems) can provide households with both subsistence and cash income, which reduces household vulnerability in times of stresses or shocks. Third, trees can provide a source of on-farm household savings that increases over time (Angelsen & Wunder, 2003).

### Collection of Non-Timber Forest Products (NTFPs)

Non-timber forest products (e.g. game, fruit, firewood, medicinal plants, rattan, bamboo) provide important sources of food, fuel, forage and medicine in rural livelihoods (Sunderlin et al., 2005). Most households collect NTFPs for the purpose of household consumption. Some forest products have a permanent place in a household's diet, others only function as a supplement when other food is not available (Ros-Tonen, 2000). NTFPs are important 'gap fillers' in rural livelihoods; they help overcome seasonal shortfalls and serve as substitutes during emergencies (Angelsen & Wunder, 2003).

Non-timber forest products are normally not the main cash earners in a households economy; only a small proportion of NTFPs is collected for commercial sale or barter purposes (Sunderlin et al., 2005). Most NTFPs are low value natural resources characterised by high harvesting cost, seasonal fluctuations, heterogeneous quality, overexploitation and small markets (Ros-Tonen, 2000). For this reason, NTFPs have little to no potential to help lift people out of poverty. In the livelihoods of the poorest of the poor, however, NTFPs function as essential safety nets and often help prevent them from falling into deeper poverty (Angelsen & Wunder, 2003).

**Table 2.1: The importance of different forest benefits to different groups**

User groups	Types of economic benefits			
	Agricultural land & nutrients	NTFPs	Timber	On-site ecological services
Forest dwellers:				
i. <i>Hunters, gatherers</i>	Minor benefit	Main benefit	Supplementary if transport access exists	Variable
ii. <i>Shifting cultivators</i>	Main benefit	Important supplement	As above	Variable
Farmers living adjacent to forests:				
i. <i>Small holders</i>	Major 'land reserve'	Supplementary	Supplementary if transport access exists	Variable
ii. <i>Landless</i>	Not important	Important supplement	As above	Variable
Commercial users:				
i. <i>Artisans, traders, small entrepreneurs</i>	None	Important	Important	None
ii. <i>Employees in the forest industry</i>	None	Supplementary	Main benefit	None

Source: Adapted from Angelsen & Wunder, 2003, p. 19

Payments from environmental services

People living in or near the forest can reap direct and indirect benefits from environmental services that natural forests provide (Angelsen & Wunder, 2003). Direct benefits are linked to a healthy natural resource base which helps rural households to reduce their vulnerability and maintain or enhance their livelihood practices (Sunderlin et al., 2005). Indirect benefits refer to transfer payments that local forest-using people receive for maintaining the ecological services of the forest (e.g. maintaining

quality and quantity of water supply, restoring soil fertility and biodiversity for agro-forestry systems) (Sunderlin et al., 2005). Currently, the most prominent ecological services are: (i) carbon storage, (ii) hydrological protection, (iii) biodiversity conservation and (iv) forest-based tourism (Sunderlin, Angelsen & Wunder, 2004). More research is needed however, to establish how benefits from these ecological services can be proportionally distributed among the heterogeneous groups (e.g. wealth, ethnicity, age) of forest-using people (Sunderlin et al., 2005).

#### Forest sector: employment and indirect benefits

Worldwide, an estimated number of 47 million people is employed in the forest sector. About 17.4 million of these work in the formal forest sector, and another almost 30 million in the informal sector (Sunderlin et al., 2005). These employment opportunities are referred to as direct benefits from the forest sector, while indirect benefits refer to multiplier- and trickledown effects (Sunderlin et al., 2005). The establishment of a logging company for example may benefit the local population through a rising demand for local food, products and services; the creation of a logging road may translate in improved market access for the local population and increase opportunities for commercial sales of forest- and agricultural produce (i.e. multiplier effect) (Sunderlin, Angelsen & Wunder, 2004). Trickledown effects are mostly related to macro-level processes such as contributions of the forest sector to the GDP (Gross Domestic Product) or exports of a given country (Sunderlin, Angelsen & Wunder, 2004). In most developing countries, the timber sector substantially contributes to economic growth. More official data is needed however, to establish how much of these economic rents actually reach the poor in developing countries (Angelsen & Wunder, 2003).

#### ***2.4.3 Role of forest benefits in rural livelihood strategies***

Forest use practices and benefits can fulfil different roles in rural livelihood strategies. Vedeld et al. (2004) distinguish three main functions of forest income: (i) safety nets; (ii) support of current consumption; and (iii) a pathway out of poverty.

#### Safety nets

In the function of safety nets, forest products help people survive in times of food shortfalls or unexpected cash need. These situations are often caused by irregular and unpredictable events, such as natural disasters or family illness (Vedeld et al., 2004). As the majority of the rural poor depends on forest resources for their subsistence and survival, the safety net function of forests is often regarded as most common and critical in rural livelihood strategies (Angelsen & Wunder, 2003). It are especially the declining poor (i.e. multiple livelihood vulnerabilities, high levels of insecurity, dependent on

outside help) and the coping poor (i.e. just able to meet basic needs) that are highly dependent on forest resources as a safety net (Hobley, 2003). How critical the safety-net role of the forest is, depends not only on the extent to which households are exposed to stresses and shocks (i.e. vulnerability context), but also on the availability of other safety nets. Other safety-net strategies may include building up cattle, diversifying agricultural practices, resorting to off-farm labour or collecting remittances (Vedeld et al., 2004). Angelsen & Wunder (2003) warn that structural disregard and underdevelopment of other rural livelihood safety nets may result in forests becoming poverty traps. Livelihood diversification (Ellis, 2000) , thus combining forest use practices with other livelihood activities, should prevent rural households from falling into this poverty trap.

### Support of current consumption

In the function of supporting current household consumption, forest products are either used as gap-fillers or as a source of regular subsistence. Gap-filling forest products are used as seasonal buffers to overcome periodical and predictable food shortages; in the months between staple harvests, forest resources make important contributions to food security (Vedeld et al., 2004). When contributing to regular subsistence, forest products (e.g. firewood, forest foods and medicinal plants) are used for direct household consumption all year around. Firewood is often used as a main source of domestic energy; wild forest foods function as important supplements to staple food in terms of vitamins (e.g. fruits, nuts, vegetables) and proteins (e.g. bush meat, fish); and medicinal plants from the forest are often used for treatment of primary health problems in rural livelihoods (Vedeld et al, 2004). Patterns of forest use for livelihood subsistence are dynamic and subject to change. At any given time, forest foods may be substituted by agricultural food crops, due to for example physical shortages or restricted access to supplies (Byron & Arnold, 1997). Also the transition from subsistence economies to market economies is of influence on forest use patterns in rural livelihoods. Together with economic development, forests will lose their importance in terms of subsistence income, yet gain importance in terms of cash income (Angelsen & Wunder, 2003).

### Pathway out of poverty

Forest income may provide a pathway out of poverty when forest products function as a source of savings, investment, accumulation or asset building in rural livelihoods (Angelsen & Wunder, 2003). Vedeld et al. (2004) put forward two forms of livelihood strategies in which forest products, under the right circumstances, could contribute to a permanent increase of income and well-being: (i) diversified forest (cash income) strategies, and (ii) specialised forest (cash income) strategies. In diversified forest (cash income) strategies, households combine forest use practices with other cash generating livelihood activities. In specialised forest (cash income) strategies, households focus on specific forest

products that feature a high value weight ratio and stable market conditions (Vedeld et al, 2004). Both livelihood strategies can only be pursued in a livelihood context of high market integration in the cash economy (Vedeld et al., 2004). Thus only a very small proportion of the rural poor, namely the better-off households with relatively secured asset bases, are likely to apply either one of these forest income generating strategies for livelihood development (Hobley, 2003). Based on the fact that natural forest extraction is labour intensive, land extensive and inherent to inflexible supply and demand, Wunder (2001) argues that natural forest income has limited potential to lift people out of poverty. Other livelihood activities, such as agriculture, agro-forestry or forest plantations, may well prove to be more competitive than natural forest extraction (Angelsen & Wunder, 2003).

**Table 2.2: Direct roles of forest in rural household livelihood strategies**

<i>Poverty aspects</i>	<i>Function</i>	<i>Description</i>
Safety net	Insurance	Food and cash income in periods of unexpected food and income shortfall
Support current consumption	Gap-filling	Regular (seasonal, for example) shortfall of food and income
	Regular subsistence uses	Fuelwood, wild meat, medicinal plants, and so on
	Low-return cash activities	A wide range of extractive or “soft management” activities, normally in economies with low market integration
Poverty reduction	Diversified forest strategies	Forest activities that are maintained in economies with high market integration
	Specialized forest strategies	Forest activities that form the majority of the cash income in local economies with high market integration
	Payment for environmental services	Direct transfers to local communities from off-site beneficiaries

*Source: Veldeld et al., 2004, p.13*

#### **2.4.4 Management of forests**

The potential benefits of forest products and services in rural livelihoods are also influenced by the type of natural resource management, in terms of access to and control over land and resources. Property regimes are a necessary structure for effective and sustainable natural resource management as these systems provide rules and regulations in relation to ownership rights, responsibilities and obligations (Hasan, 2002). In general, natural resource management regimes can be classified into public property (state), private property (individuals or corporations), common property (groups of individuals) and open access (property rights and user groups are undefined) regimes (Bromley, 1991).

Within the paradigm of decentralisation and devolution, natural resource rights and responsibilities are largely transferred from state to local level, framed under both private and common property

regimes (Bromley, 1991). Based on the premises that property rights offer incentives to local users for sustainable forest management, devolution is believed to contribute to both environmental conservation and livelihood development (Agrawal & Ostrom, 1999). The level and character of devolution may vary in different contexts and depends on (i) who is given property rights (e.g. local-based organisations, communities, households), (ii) the type and/or combination of property rights (e.g. rights of access, withdrawal, management, exclusion and transfer) and (iii) the type and function of the natural resource base over which property rights are given (e.g. natural forest area or plantation forest area) (Agrawal & Ostrom, 1999).

Following sections will more specifically focus on the management of both natural forest area and plantation forest area in a context of most common weaknesses, challenges and potentials for livelihood development.

### Natural forest management

With a shift towards devolution of forest rights, around a quarter of natural forests in developing countries is now under local management (Sikor, 2006a). Parallel to this trend, community-based forest management (CBFM) (re)gained recognition as a type of natural resource management that serves both environmental and human development objectives (Agrawal & Ostrom, 1999). While granting property rights to communities has contributed to improved forest condition, the results of CBFM in terms of livelihood improvement, are mixed (Mahanty et al., 2006). The most common pitfall in CBFM programs is the assumption of homogenous communities (Agrawal & Gibson, 1999). In reality, communities vary in terms of size, composition, norms and resource dependence. Communities are socially heterogeneous and subject to local power structures (e.g. gender, age, ethnicity, wealth, connections). Even in a CBFM context, the poorest of the poor remain most vulnerable and risks such as elite capturing, corruption issues and gender bias still prevail (Hobley, 2007). Another common pitfall is the over-promotion of indigenous systems without analysis of social outcomes in practice (Agrawal & Gibson, 1999). While historically, indigenous knowledge and natural resource management systems have proven to be sustainable, over time, indigenous institutions (as pillars for sustainable indigenous forest management systems) have become eroded through factors such as population pressure, breaking with cultural ties, migration, modernisation, commercialisation or community diversification (Agrawal & Gibson, 1999). Some other common weaknesses of CBFM include (i) focus on often low quality and degraded allocated natural forest area; (ii) restrictions on granted rights to local users, often the exclusion of rights over timber and other high value products; and (iii) limited forest benefits for the poor due to high transaction costs, unfavourable benefit sharing mechanisms, taxation schemes and/or regulations (Arnold, 2001; Mahanty et al., 2006).

### Plantation forest management

Forest plantations (i.e. planted/seeded in the process of afforestation or reforestation) provide important substitutes for raw materials from natural forests (thus reduce pressure on natural forest cover), and are widely used to protect soil and water and rehabilitate exhausted land (Carle, Vuorinen & Del Lungo, 2002). Small-scale forest plantations are usually owned by individual farmers and provide local households with sources of fuel wood, fodder and rural employment (i.e. small-scale tree growing) (Carle, Vuorinen & Del Lungo, 2002). The extent to which commercial small-scale tree growing contributes to rural livelihood development is debated, mainly due to some of the following common pitfalls: (i) promotion/subsidy of inappropriate tree species (e.g. unsuitable for the land, choice based on market rather than household subsistence needs, thus unsustainable); (ii) allocation of land for tree growing that was formerly used for subsistence crops, thus distorting land use systems and depriving households of subsistence output; (iii) encouraging monoculture tree growing, while households are better served by growing more tree species or using agro-forestry systems that are able to provide varied and intermediary outputs to match livelihood needs (Arnold, 2001). Forest plantations are most feasible in a livelihood context where diverse and sufficient resources are present to meet basic livelihood needs, and enough 'surplus' land is available for the purpose of growing trees. In addition, access to secured markets, technical assistance (e.g. growing, tending, marketing techniques), official land titles and credit schemes are important contributing factors to maximise benefits of plantation forests (Arnold, 2001). These preconditions generally exclude the poorest of the poor (e.g. landless, old age, poor health) from partaking in tree growing activities. It are often the wealthier households that manage to make forest plantation activities viable and profitable, as they have access to more land, assets and diversified sources of income (Arnold, 2001). Opportunities for tree-growing activities may increase however, also for the moderately poor, through favourable conditions arising from joint forestry partnerships between large companies and smallholders. In such partnerships, smallholders allocate their land and labour capacity for the purpose of growing a forest crop under contract of a corporation (i.e. outgrowing schemes). In return, smallholders receive technical (sometimes even financial) assistance and market access at prevailing prices from the corporation (Angelsen & Wunder, 2003).

## **2.5 Conclusion**

For many people living in or near a natural forest area, forest resources are important components in their rural livelihoods. The actual potential and relative importance of forests may however vary according to levels of forest-dependency; the nature of forest resources; forest use and management practices; and the extent to which people are able to derive and maximise forest benefits. In general,

forests can contribute to subsistence income (i.e. safety net function and support of current consumption) and cash income (i.e. pathway out of poverty) in rural household livelihood strategies.

When forests function as a 'safety net', forest resources anticipate shortfalls in subsistence needs, thus help households survive and prevent them from falling into deeper poverty. In this vital forest function, forests primarily address the needs of the largest proportion of the rural poor, namely the declining and coping poor (e.g. forest dwellers, poor forest farmers). It should be noted however that the forest 'safety net' function incorporates a risk of trapping people into poverty, which would present itself when there is a structural disregard of developing other forms of safety nets (e.g. cattle, agricultural diversification) in household economies.

When functioning as 'support of current consumption', forest products are a source for regular subsistence (e.g. forest foods to supplement staple food) in a household economy and/or play a gap-filling role (i.e. seasonal buffer). This forest function primarily anticipates the livelihood needs of the coping poor and is highly subject to substitution by, for example, agricultural food crops.

When forests provide households with cash income (i.e. pathway out of poverty), forest resources help to reduce levels of poverty and may even help households to escape poverty. Timber extraction as a high rent natural forest practice and small scale tree growing are some important forest activities that could contribute to this purpose. In the function of 'pathway out of poverty', forest resources and practices mostly benefit the improving poor (e.g. better-off forest farmers, smallholders, commercial users), which represent a significantly smaller proportion of forest-using people.

In order to establish appropriate and effective roles for forests in rural livelihood development and poverty alleviation, forest initiatives should be placed in a context of other livelihood assets and activities. Most forest-using households represent different levels and patterns of forest use in combination with other non-forest livelihood activities. Forestry alone cannot alleviate poverty. In fact, only focussing on forest practices in rural livelihood development could well result in forests becoming poverty traps for the poor and vulnerable. Forest initiatives can thus only effectively contribute to livelihood security and improvement alongside other development initiatives. Besides recognising the importance of livelihood diversification in forest development policy, forest initiatives should also acknowledge 'heterogeneity' among rural poor (e.g. wealth, ethnicity, power relations) in order to really be effective and inclusive.

**CHAPTER 3: THEMATIC GEOGRAPHICAL CONTEXT****3.1 Introduction**

Vietnam is part of the Greater Mekong Sub region (GMS), which comprises Cambodia, Yunnan Province of the People's Republic of China, Lao People's Democratic Republic, Myanmar and Thailand. The great Mekong River has provided the region with a rich natural resource base, which is the main source of livelihood for much of the population (Asian Development Bank, 2004). Within the GMS region, Vietnam has a total territorial area of 331,123 km<sup>2</sup> and a north to south length of 1650 km; approximately 75% of this territory is highland and 15% is classified as farm land. The national forest cover represents 36.7% of total land area (Jong de, Do Dinh Sam, Trieu Van Hung, 2006). Vietnam counted a total population of 81 million inhabitants in 2003. Approximately 75% of the total population lives in rural areas. About 37% of the population lives below the poverty line (Hook et al., 2003).

It appears that Vietnam is experiencing a double transition – from subsistence farming to more modern, diversified economies, and from central planning to more market-based economic systems. Since the process of economic liberalisation (Doi Moi) started in 1986, Vietnam has experienced growth in terms of national income and productivity. During the 1990s the real GDP (Gross Domestic Product) doubled and the proportion of people living in poverty dropped from approximately 60% to about 35%. These benefits are however not distributed equally over the entire country. There is a large income inequality between the richer provinces around Hanoi (Red River delta) and Ho Chi Minh City (Mekong delta) and the poorest provinces. Especially the rural population in geographically remote areas and members of ethnic minority groups remain poor (Hook et al., 2003).

Many of these rural populations depend, in one way or another, on the forest for their livelihood. It is therefore encouraging to see, that both forest conservation and poverty reduction are important goals of the Government of Vietnam. An integrated approach to development has resulted in the launch of several important development programs and policies over the past decades. One of these included the forest land allocation policy. By actively involving local communities, households or groups of households in forest management systems, the Vietnamese government aims at achieving local livelihood development and forest rehabilitation simultaneously (Socialist Republic of Vietnam, 2007).

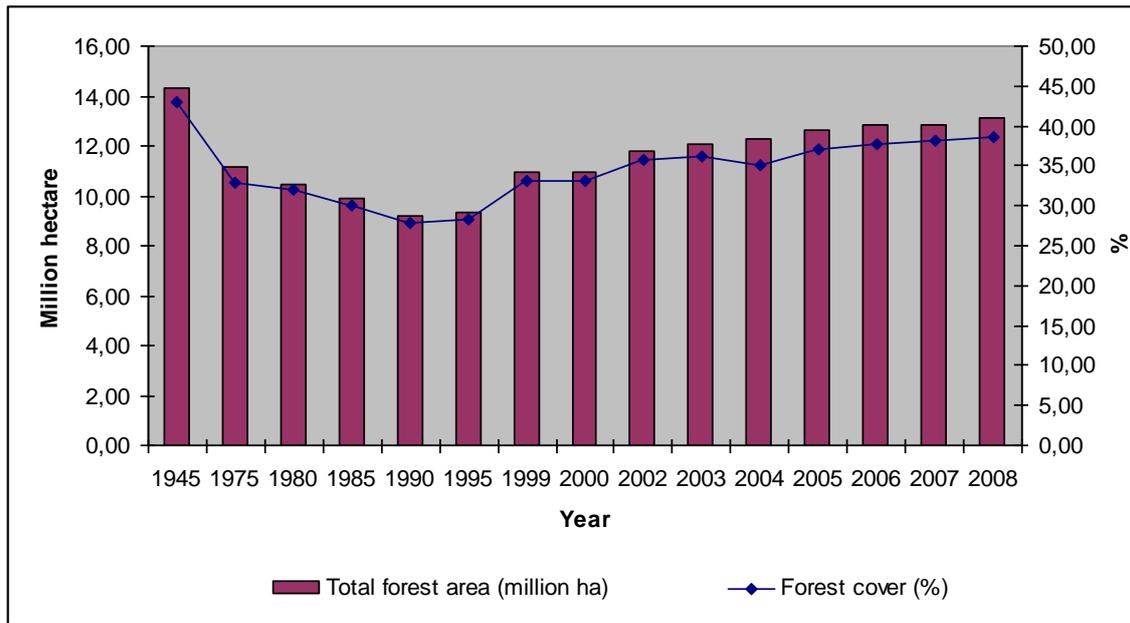
This chapter starts out with presenting the general forest and poverty context in Vietnam. It continues to seek more insight in the dynamics of forest-related livelihoods of Vietnam's rural population together with the first effects of the forest land allocation policy. Special reference is made to the livelihoods of ethnic minorities, as these account for most of Vietnam's forest-using population.

### 3.2 Forest processes and policies

In Vietnam the forest sector makes up 1% of the Gross Domestic Product (GDP). Forest resources appear most important in the economic and social lives of people that draw their livelihoods partially or fully from the forest (MRC, 2003). Whereas in 1943 natural forests still accounted for 43% of Vietnam's national territory, due to large scale deforestation, the total forest area reached an ultimate low of merely 27% in 1990 (Jong de, Do Dinh Sam, Trieu Van Hung, 2006). Possible causes of deforestation include commercial logging, fuel wood collection, shifting cultivation and the encroachment of sedentary agriculture. Secondary causes include forest fires and infrastructure development (much of deforestation is identified in the vicinity of roads). It is argued however that forest cover loss due to shifting cultivation or upland agriculture mostly involves forest land that was already degraded before. In addition, devastation by war has caused an estimated loss of 2 million ha of forest in Vietnam (MRC, 2003).

Consequences of deforestation are severe and can largely be divided into environmental, economical and social categories. Environmental consequences include loss of forest biota, hydrologic problems (i.e. flooding, soil erosion, and mass soil movement), soil disturbance and soil compaction (causing erosion and water infiltration). Loss of livelihood, food insecurity and malnourishment (e.g. reduced availability and quality of drinking water) are some of the most important socio-economic consequences. Loss of forest land increases the need for alternative income generating opportunities for forest-using people. This has led to greater migration flows of primarily men in search of work, which in turn has social consequences in terms of family disintegration and greater workloads for women. Agricultural encroachment has been the main cause of loss of traditional land use rights and conservation mechanisms, which have been common practice among ethnic minority groups for centuries. Ethnic minorities are increasingly forced into marginal forest areas in the face of conflicts with governments or logging companies (MRC, 2003).

Due to different forest rehabilitation programs (e.g. Program 327, 5MHPR) and changes in forest policy, Vietnam's forest cover has increased again over the years (e.g. 2 million ha between 1995-2005). Available data shows a national forest area of 12.7 million hectares (i.e. 37% forest cover) in 2005. This number includes about 10.2 million hectares of natural forest area and 2.5 million hectares of forest plantations. The Vietnamese government aims at reaching a national forest cover of 47% by the year 2020 (Socialist Republic of Vietnam, 2007). Although the area of forest is increasing in Vietnam, the quality of both natural forests and forest plantations remains poor. A total of 51% of all forests is classified as barren forest land (i.e. highly degraded bare land and denuded hills) and another 38% as poor forest. Moderate forests make up for 8% of all forests and only 3% of forest cover is classified as well-stocked (Poffenberger et al., 1998).

**Figure 3.1: Dynamics of total forest area and forest cover in Vietnam, 1943-2008**

Source: Based on statistic of the National Forest Protection Department of Vietnam, 2009

An increase in forest cover may well mean that forest-using people, which include the poorest communities in Vietnam, will benefit in particular. The next section will discuss the progress made in poverty reduction in Vietnam. Particular focus is on the forested regions in Vietnam that are inhabited by forest-using people, which for the greater part include ethnic minority groups.

### 3.3 Forests, people and poverty in Vietnam

#### 3.3.1 Poverty and ethnic minorities

According to World Bank statistics (2010), Vietnam has made much progress in reducing poverty numbers over the past decennia. While in 1993 about 60% of Vietnam's population was still living in poverty, by 2004, poverty numbers had dropped to 20%. Poverty is primarily concentrated in the rural areas, where about 94% of Vietnam's poor population lives (Huynh Thu Ba, 2002). Poverty in Vietnam is highest among the ethnic minority groups. Vietnam counts a total of 54 ethnic groups. The ethnic majority group is represented by the Kinh population (i.e. 85%); this group dominates the political, economic and cultural arena in Vietnam. The remaining 15% of Vietnam's population is made up by 53 ethnic minority groups, all of which have the Vietnamese nationality, but differ from the Kinh in terms of language, culture and identity (Persoon, 2004).

In comparison to the Kinh population, ethnic minorities are disproportionately poor. While ethnic minority groups only represent 15% of Vietnam's total population, they account for 29% of all poor people in Vietnam. Out of 14 provinces in Vietnam with rural poverty rates exceeding 60%, more than

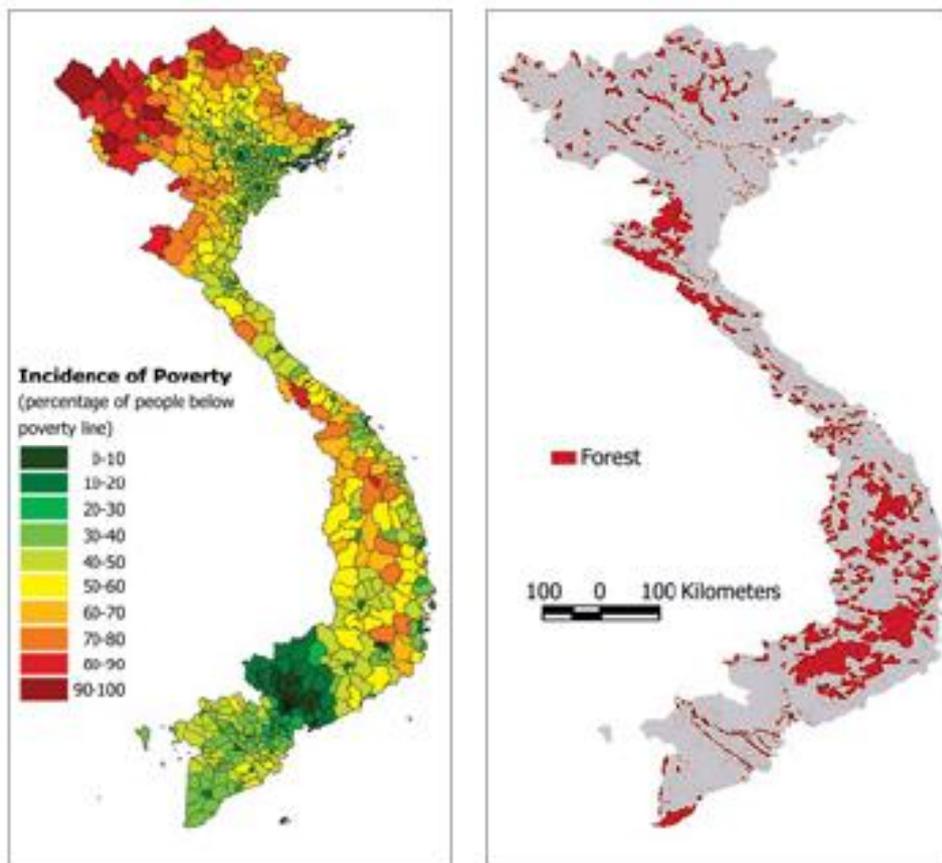
half of the total population of 12 of these provinces consist of ethnic minorities (Huynh Thu Ba, 2002). Both geographical and cultural remoteness of ethnic minority groups are of influence on lack of endowments (e.g. human and physical capital) and low return on their endowments in comparison to the Kinh population (e.g. van de Walle & Gunewardena, 2001; Huynh Tu Ba, 2002; Persoon, 2004; Sunderlin & Huynh Thu Ba, 2005; Baulch et al., 2007). Baulch et al. (2007) illustrate that also in settings where both Kinh and ethnic minority groups have the exact same endowments, the minority households still appear to receive lower returns on their endowments. Based on the latter, Baulch et al. (2007) propose two pathways to prosperity for ethnic minorities. A first pathway to obtaining the same return on endowments, suggests full integration of ethnic minority groups, both economically and culturally, with the Kinh majority (e.g. Muong & Tay have successfully taken this pathway). A second pathway to closing the gap of living standards, suggests economic integration in Kinh society on the one hand, while at the same time maintaining the ethnic minority group's own cultural identity (e.g. Thai & Khmer have successfully taken this pathway). This echoes earlier data of the Asian Development Bank (Huynh Thu Ba, 2002) on poverty levels of ethnic minorities in Vietnam. According to this data, ethnic minorities perform best (economically speaking) in locations where they have assimilated most with the Kinh, while the least assimilated groups stay behind (e.g. ethnic minorities in the Central Highland and the Northern Uplands). Van de Walle & Gunewardena (2001) however stress the importance of the indigenous customs and identity of ethnic minorities and suggest that ignoring these 'comparative advantages' may just lead ethnic minorities to further marginalisation instead of integration and development.

The integration of ethnic minorities into mainstream Vietnamese society has often been the core of Upland Development Programs and Policies (e.g. Fixed Cultivation and Sedentarisation Project, Resettlement Policies, New Economic Zones, Program 135 for Socioeconomic Development) (e.g. Huynh Thu Ba, 2002; Persoon, 2004; Baulch et al., 2007; Vuong Xuan Tinh, 2008). Up to today, ethnic minority groups in Vietnam are still perceived as population groups with low education levels, backwards farming practices, slow economic development and many livelihood problems (Socialist Republic of Vietnam, 2007). Although the goal of including ethnic minorities in national socioeconomic development is very much justified, there is a gap in perception of poverty issues between official policymakers (i.e. often Kinh) and ethnic minority groups themselves (Huynh Thu Ba, 2002). Only a small number of ethnic minorities actually have key positions in government agencies that are responsible for the making and implementation of upland development policies in Vietnam (Persoon, 2004). Persoon (2004, pp. 47-48) refers to Vietnam's minority policy as "a mixture of well-meant paternalism and ethnocentrism, which has been much less characterised by bad intentions than by lack of knowledge and understanding about the ecological and socio-cultural reality of the highlands" (Persoon, 2004, pp. 47-48). The importance of tailored and participatory ethnic minority policy is also addressed by van de Walle & Gunewardena (2001), who suggest that in order to achieve socioeconomic development for ethnic minority groups, development policies should, in

in addition to targeting ethnic minority areas, more specifically aim at addressing the needs of ethnic minority households in these areas. If the latter is neglected, policy benefits may well be disproportionately captured by Kinh households living in ethnic minority areas.

Although most ethnic minority people share similar characteristics of poverty (e.g. marginalised subsistence farmers, low education levels, degraded resources, lack of labour, geographic isolation), the 53 officially recognised ethnic minority groups in Vietnam are not homogenous (Baulch et al., 2007). Differences among groups may relate to the spoken language, ways of earning a living, kinship, complexity of social organisation and the degree and nature of assimilation into Vietnamese society. Some ethnic minority groups have inhabited certain regions for millennia, other groups have migrated to their current living area throughout different historical periods, some of which were not too long ago (Persoon, 2004). The biggest difference however is the variety in population size, differing from major groups of over 1 million minority people (i.e. 8 groups make up 80% of total ethnic minority population), to medium-sized groups with populations between 25,000 and 250,000 (i.e. 20 groups make up 12% of total ethnic minority population) to small groups of sometimes no more than a few hundred members (i.e. 25 groups make up 8% of total ethnic minority population) (see Huynh Thu Ba, 2002, pp. 6-7).

**Figure 3.2: Poverty in Vietnam (l) and areas of natural forest cover in Vietnam (r)**



Source: Sunderlin & Huynh Thu Ba, 2005, p.5

Ethnic minority groups in Vietnam live in different geographical areas. Only a small proportion inhabits low and midland areas, and just 3 out of 53 minority groups are located along the Central Coast and the Mekong Delta. The majority of Vietnam's ethnic minority groups live in remote and mountainous areas, where also much of Vietnam's forest land is located (Huynh Thu Ba, 2002). As illustrated in paragraph 3.2, Vietnam's forests have been subject to high levels of degradation. The most degraded forest resources are located in the Northern and North-eastern uplands of Vietnam. The Central Highlands on the other hand, possess the most extensive forests of the country with very valuable timber reserves (Poffenberger et al., 1998; Persoon 2004).

### ***3.3.2 Forest-use in rural upland livelihoods***

Vietnam's upland forests are inhabited by approximately 25 million people, many of which belong to ethnic minority groups (Socialist Republic of Vietnam, 2007). The much smaller proportion of Kinh people that live in the uplands, settled here during two main national migration waves (i.e. in the late 1950s and early 1960s; and after Vietnam's unification in 1976). During these migration periods, the Vietnamese government stimulated lowland Kinh people to resettle in the uplands and develop 'unused' (i.e. often fallow forest land used by ethnic minorities) high quality forested areas (Persoon, 2004). Vietnam's upland population depends, to a lesser or greater extent, on forest resources for their livelihoods. On average, forest resources are estimated to account for 20% of total household income (monetary and non-monetary) of forest-using people (Jong de, Do Dinh Sam, Trieu Van Hung, 2006).

#### Forest land conversion

Some 9 million ethnic minority people convert forest land into agricultural land to practice swidden cultivation. For about 3 million of these people, swidden cultivation is the main source of (non-monetary) household income. Rice and corn are important staple crops, while cassava functions primarily as emergency food (Sunderlin & Huynh Thu Ba, 2005). For swidden cultivation to be sustainable however (e.g. high quality crop production and minimum impact on forest cover), large arable areas and low population density are required. In Vietnam these conditions are disappearing; fixed settlement and cultivation policies have limited the mobility of ethnic minority groups and population numbers have risen due to increased birth rates and national migration flows (Huynh Thu Ba, 2002). Although swidden cultivation is increasingly being replaced by other land-use practices, total elimination in the near future may not be a realistic objective according to Persoon (2004). Swidden cultivation still provides many upland people with livelihood security, which does not only apply to ethnic minorities, but also to many of the migrated Kinh population in Vietnam's upland areas (Persoon, 2004). It will take time to transform swidden livelihoods to sustainable sedentary livelihoods (Castella et al., 2006).

NTFP collection

It is estimated that about 8 million ethnic minority people spend their time collecting non-timber forest products (NTFPs), primarily for subsistence use (Sunderlin & Huynh Thu Ba, 2005). Although NTFPs capture many pro-poor characteristics, McElwee (2010) points out that many poor households in Vietnam lack the labour capacity to use the forest on a regular basis. NTFPs function more as safety-nets in poor people's livelihoods in times of emergency. In contrast, many better-off rural farmers that live near the forest frontiers in Vietnam, collect NTFPs as a complementary livelihood activity, especially during seasons with low agricultural labour demand. For this group of forest farmers, NTFP collection serves the purpose of income diversification (McElwee, 2010).

High value NTFPs in Vietnam are bamboo (e.g. handicrafts, building materials for housing, raw materials for paper and fibre industry, bamboo shoots as diet item) and rattan (e.g. home furniture and fine arts). Other important NTFPs can be placed in the categories of food products (e.g. cinnamon, anise), medicines and cosmetics, extractive products (e.g. pine, essential oils) and animal products (Vu van Duong et al., 2002). The most important NTFP in Vietnam, in economic terms, is fuel wood; this is an essential rural livelihood resource for cooking and heating (Sunderlin & Huynh Thu Ba, 2005).

While the potential of NTFPs in rural livelihood development is acknowledged (e.g. Morris et al., 2004; Wetterwald et al., 2004), at present, national-scale data on the exact role and contribution of NTFPs in household income and livelihood security is still lacking (Sunderlin & Huynh Thu Ba, 2005). Wetterwald et al. (2004) point out that the potential of NTFPs in rural livelihood development is likely to differ between geographical regions and among and within population groups in Vietnam. Influential factors may relate to the availability and quality of forest products in allocated forests, market conditions (e.g. access, information, demand), collecting and processing techniques and cultural practices. Morris et al. (2004) emphasise not to overestimate the role of NTFPs in rural livelihood development. Special reference is made to NTFP domestication programs (i.e. NTFP agro-forestry model on plantation forest land) in Vietnam and the risk of unintentionally excluding poor households due to lack of land, resources, start-up capital and to some extent their social marginalisation (e.g. not belonging, not being informed).

Timber logging

Although timber is one of the most valuable natural resources (Sunderlin et al., 2005), for many forest-using people in Vietnam, commercial timber logging in natural forest area is not a relevant livelihood option. Local households often lack the capital for technical equipment, face policy restrictions on timber logging or lack access to infrastructure for transportation and marketing purposes (Sunderlin & Huynh Thu Ba, 2005). In Vietnam, it are mainly the State Forest Enterprises (SFEs) and corporations, that are concerned with large-scale commercial timber logging. Even with

the implementation of the forest land allocation policy, SFEs have been known to delay relinquishment of natural forest land to communities or groups of households as they seek to reap extraction benefits of big valuable timber trees before exchanging ownership rights (Ngo Tri Dung & Webb, 2008).

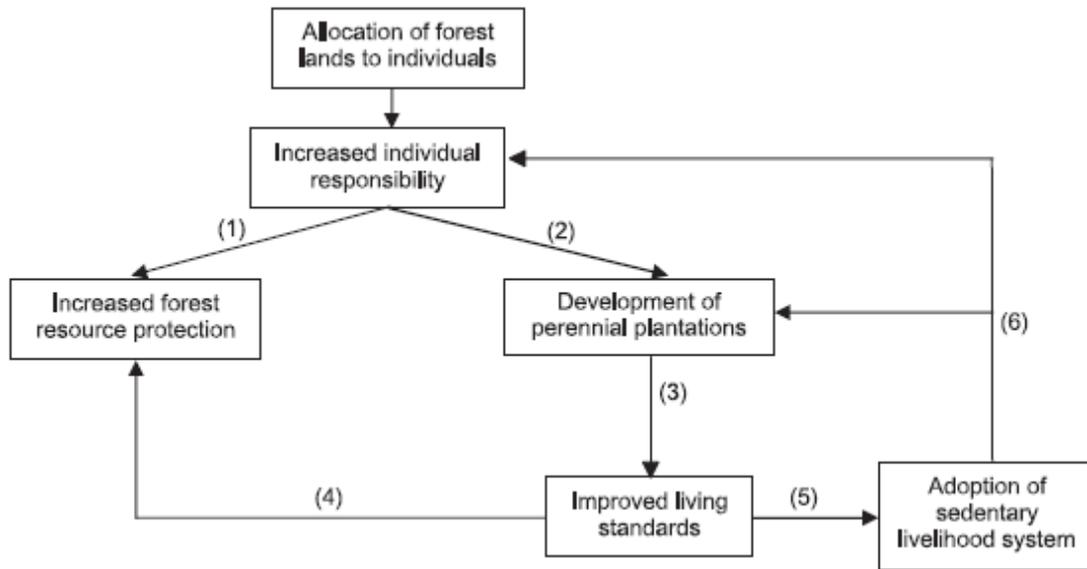
SFEs have however been quite willing to hand over low quality degraded forest land to local households for the establishment of small scale timber plantations. Vietnam gained many plantation forests under Program 327 and Program 661 (i.e. 5MHRP), and introduced small scale timber logging as new and viable livelihood option in many rural upland regions (Ngo Tri Dung & Webb, 2008). According to the paper industry in Vietnam, plantation forests have provided many rural households with jobs and income, since much of the material for paper production is supplied by local small scale timber plantations (Sunderlin & Huynh Thu Ba, 2005). Also in terms of meeting domestic needs for fuel wood and timber shortages in rural livelihoods, small scale timber plantations make positive contributions (Sunderlin & Huynh Thu Ba, 2005). According to Ngo Tri Dung & Webb (2008), some proposed benefits of timber plantations (i.e. increased crop production; government subsidies; Red Book Certificate as collateral for bank loans) were initially perceived differently by local households in Vietnam. An important disincentive for local households included the loss of swidden land. What was originally land for swidden agriculture, now had to be cultivated with trees, which is a different land use practice with different outcomes (e.g. income and subsistence). Also Clement & Amezaga (2008) confirm that the establishment of forest plantations is often chosen as a last resort by local households in Vietnam. Only when annual cropping proves to be no longer viable, and after receiving material incentives from the government, local households convert their swidden land into forest plantations. Although presented as a viable livelihood option, the actual outcomes of small scale timber plantations appear to vary in Vietnam. According to Ngo Tri Dung & Webb (2008) plantation forest land is often of very low quality and proposed species to plant are not always appropriate (e.g. low yield or worse, no yield due to inappropriate climate, ground, etc.). Furthermore, local households do not always pay appropriate attention to the tending and weeding of timber plantations, as many lack the know-how and techniques of this entirely different land use practice. Clement & Amezaga (2008) add that forest plantations are likely to only be profitable for the better-off households (with enough resources) in Vietnam, situated in geographic locations where adequate roads and markets are available and accessible. The latter is also illustrated by Poffenberger et al. (1998) who point out that households in lowland and midland areas of Vietnam have generally been more successful in raising forest productivity in comparison to households in the more remote highlands.

### **3.4 Forest land allocation in Vietnam**

The need that was identified by the Vietnamese government to reforest and the policies aimed at reducing poverty among rural populations, most notably the forest-using ethnic minority groups, was a

major reason to develop forest policies that aimed at a decentralised system of forest resource use. Different reforestation programs have led to the most recent policy, the forest land allocation policy, which is aimed at increasing forest cover and reducing poverty simultaneously. The rationale behind forest land allocation is summarised in figure 3.3 below.

**Figure 3.3: Rationale for forest land allocation in Vietnam**



Source: Castella et al., 2006, p. 150

### 3.4.1 Forest classification and utilisation

In order to achieve the ultimate goal of improved living standards and sedentary forms of livelihoods, it is needed to regulate access and use of the forest. In this way, the quality of forest cover can be improved as well. Therefore, the Vietnamese government has developed various criteria to classify forest land as being for production or conservation, or a mixture of both.

All forested land in Vietnam (i.e. natural forest and plantation forest area) is classified into either special-use forest (1.93 million ha/15.2%), protection forest (6.20 million ha/49.0%), or production forest (4.48 million ha/35.8%) (Socialist Republic of Vietnam, 2007). Each forest classification embodies specific forest functions together with specific management and use regulations (see Figure 3.4). Special-use forests mostly function as national parks, natural reserves and historical, cultural or environmental sites. Protection forests serve to protect water streams and soils, prevent soil erosion and mitigate natural disasters. The main purpose of production forests is to produce timber and non-timber forest products, yet at the same time protect the environment and preserve ecological balance (Nguyen Huy Dzung et al., 2004).

Most special-use forest (i.e. 85%) is managed by state organisations. The same applies to large areas of nationally important protection forest (i.e. 70%). Only small-scale and scattered special-use forest (i.e. 15%) and protection forest area (i.e. 30%) is allocated to households and village communities for management and protection. The majority of production forests (i.e. 75%) however, is primarily managed by non-state economic actors, such as private enterprises, village communities, groups of households or individual households (Socialist Republic of Vietnam, 2007).

**Figure 3.4: Forest classification and management regulations in Vietnam**

Forest Classification	Responsibilities	Rights	Incentives for Sustainable Forest Management
Protection Forests	<ul style="list-style-type: none"> <li>Protection of both natural and planted forests</li> <li>Planting to insure 60% of cover maintained in planted forests</li> </ul>	<ul style="list-style-type: none"> <li>Can collect dead trees</li> <li>Can do thinning up to 20% if density is high (30% for bamboo forests with more than 80% cover).</li> <li>Can collect bamboo shoots</li> <li>In plantations, selective cutting allowed up to 20% of forest area</li> </ul>	<ul style="list-style-type: none"> <li>Protection fee of \$50,000 (€3.33)/ha/year; maximum 5-year contract</li> <li>For planting very critical forests, contract fee is \$2.5 million (€167)/ha.</li> </ul>
Special Use Forests	<ul style="list-style-type: none"> <li>Protection of both natural and planted forests</li> <li>Natural regeneration &amp; enrichment planting</li> </ul>	<ul style="list-style-type: none"> <li>Can collect dead trees</li> <li>Management boards can manage directly or lease areas to other organizations, households and individuals.</li> <li>Can do eco-tourism activities</li> <li>Can do thinning up to 20% but need to maintain 0.6 shade level.</li> </ul>	<ul style="list-style-type: none"> <li>Fee of \$1 million (€66.67)/ha/year for protection &amp; assisted natural regeneration; maximum 6-year contract</li> <li>For planting long-perennial indigenous tree species, contract fee is \$2 million (€133)/ha/year</li> </ul>
Production Forests	<ul style="list-style-type: none"> <li>Forest plantation</li> <li>Forest enrichment with natural regeneration</li> <li>Plantation of perennial crops on bare and fallow land</li> <li>Direct forestry technical services</li> <li>Payment of natural resource tax– timber (15–40%), fuelwood (5%), bamboo (10%)</li> <li>Payment of agricultural land use tax (4% of exploitation value)</li> </ul>	<ul style="list-style-type: none"> <li>Can collect dead trees</li> <li>Exploitation according to plan approved by competent authorities</li> <li>Can collect by-products from thinning activities</li> <li>Traditional occupations (bamboo, rattan)</li> <li>Timber exploitation based on authorized management plans</li> <li>Product processing</li> </ul>	<ul style="list-style-type: none"> <li>3–6 years exemption from land use fee</li> <li>If land is leased, 50% discount on land use fee</li> <li>Discounted business income tax</li> <li>Availability of 10–year loan at preferential interest rates</li> <li>Natural resource tax exemption for products from regenerated natural forests</li> <li>Wholesale tax exemption for legally collected timber products from plantations &amp; non-timber forest products from natural forests</li> <li>Land use tax exemption for bare land used for forestry &amp; agriculture</li> <li>Land use tax exemption for plantations shifting from annual to perennial crops, and those establishing new plantations.</li> </ul>

Source: Nguyen Huy Dzung et al., 2004, p. 4

### 3.4.2 Forest devolution: policies and programs

Following a countrywide process of decentralisation (i.e. ‘Doi Moi’ in 1986; e.g. Quang Xuan Dinh, 2000), major reforms were initiated in the arena of natural resource management. Over the past

20 years, the Vietnamese government promulgated some important policies (see Figure 3.5) and forestation programs, in order to achieve the desired outcomes (i.e. forest rehabilitation and livelihood improvement) of forest devolution (e.g. Morris et al., 2004; Jong de, Do Dinh Sam & Trieu Van Hung, 2006; Ngo Tri Dung & Webb, 2008; Webb, 2008).

**Figure 3.5: National policies affecting forest rehabilitation in Vietnam 1991-2006**

<i>Policy area</i>	<i>Major policies</i>
<b>Forest Management</b>	<ul style="list-style-type: none"> <li>- Forest Protection and Development Law 1991, 2004</li> <li>- Decision 08/2001/QD-TTg- Regulates the management of special-use forest, protections forests and natural production forests.</li> </ul>
<b>Land policies; beneficiary policies</b>	<ul style="list-style-type: none"> <li>- Land Law 1993</li> <li>- Land Law 1998 (revised)</li> <li>- Land Law 2003 (revised)</li> <li>- Decree 01/CP/1995 regarding land allocation for farming cultivation, forest production and aquaculture by state owned enterprises.</li> <li>- Decree No. 02/CP dated 15/1/1994 – Regulates forest land allocation to organizations, households and individuals for sustainable and long-term use.</li> <li>- Decree No. 163/1999 dated 16/11/1999 – On forest land allocation, lease and lending to organizations, households and individuals for sustainable and long-term use.</li> <li>- Decision 178/2001/- On the beneficiary rights and obligations of households and individuals who have forest and forest land allocated, leased and lent.</li> </ul>

*Source: adapted from Jong de, Do Dinh Sam & Trieu Van Hung, 2006, p. 27*

The Forest and Protection Law of 1991 classified all forest land (i.e. special-use, protection or production forest) in Vietnam and specified management regulations accordingly (see paragraph 3.4.1). Under the framework of the new Land Law in 1993, both the national and local governments started to allocate forest land to local people (i.e. individual households, groups of households, communities). Barren forest land was allocated for the purpose of reforestation in the form of plantation forests, and natural forest area was allocated for management and protection purposes (Ngo Tri Dung & Webb, 2008). The Land Law of 1993 clearly states the rights of the land users. These are contained in an official land use certificate (i.e. Red Book Certificate). Red Book Certificates (RBCs) provide people ownership rights for a period of 50 years and entitle them to exchange, transfer, lease, mortgage and pass on their allocated forest land (maximum of 30 ha) for inheritance (Poffenberger et al., 1998; Jong de, Do Dinh Sam & Trieu Van Hung, 2006). The actual benefits and obligations for

households that are allocated natural forest land are further specified in Decision 178 that was promulgated in 2001 (see Figure 3.4).

In the past 20 years, Vietnam also launched two significant large scale forestation programs, namely Program 327 (1992-1998) and Program 661 (1998-2010). The latter is also known as the 5 Million Hectares Reforestation Program (5MHRP). Program 327 was originally very broad of focus and included, besides forestry, also the domains of agriculture, fishery, infrastructure, sedentarisation and development of New Economic Zones (NEZs) (Jong de, Do Dinh Sam & Trieu Van Hung, 2006). In the domain of forestry however, Program 327 aimed at re-greening barren land and denuded hills in the form of plantation forests. Besides the objective of increasing the forest cover, Program 327 also aimed at eliminating swidden cultivation systems as these were perceived to be low productive for household livelihoods and destructive to forests (Webb, 2008). In 1998, Program 661 (5MHRP) was introduced as the follow-up of Program 327. Aim of this program was to increase the forest cover by developing 5 million hectares of forest plantations by 2010. Program 661 had high ambitions for employment and income generation through forestry and NTFPs (Morris et al., 2004), and in order to meet these objectives, additional measures, such as project support, favourable loans and training and extension services, were introduced (Jong de, Do Dinh Sam & Trieu Van Hung, 2006).

### ***3.4.3 First effects of forest land allocation in Vietnam***

At present, about 61% of 10.8 million hectares of forest land has been allocated in Vietnam. Only 10% of this however, has been allocated directly to households. Two-thirds of forest land has been allocated to SFEs, who in turn are supposed to reallocate it to households or communities (Sunderlin & Huynh Thu Ba, 2005). As the incentives for SFEs to reallocate valuable natural resources (i.e. natural forest) to communities or groups of households are not very high, SFEs sometimes delay transferring ownership rights until the valuable timber reserves have been harvested (Ngo Tri Dung & Webb, 2008). The latter is a prime example of what Tran Ngoc Thanh & Sikor (2006) refer to as the gap between legal forest rights and actual forest rights and practices. All too often forest devolution does not equally benefit the rural poor in Vietnam due to inadequate political, economic or cultural conditions. The effects of forest land allocation in Vietnam differ because of different power relations (i.e. bargaining hypothesis), production systems (i.e. cost-benefit hypothesis) and institutions (i.e. cultural hypothesis) among forest-using people (Tran Ngoc Thanh & Sikor, 2006; Sikor et al., 2007).

Poffenberger et al. (1998) frame all of the above stated hypotheses under the heading of regional differences influencing the effects of forest land allocation in Vietnam. The level of forest productivity for example, depends on regional conditions such as forest quality, economic conditions (e.g. availability of markets, infrastructure) and level of government support. Regional circumstances are also proposed to explain possible conflicting interests between households and government organisations following forest land allocation. Poffenberger et al. (1998) suggest that in Vietnam's

lowland and midland areas (with better market access and more market economy driven community systems), objectives between both stakeholders are similar. Yet in Vietnam's highland regions, which are mostly inhabited by ethnic minorities who still live according to their own traditions, objectives may well differ (e.g. customary versus statutory norms), thus leaving more room for conflict. Nguyen, Nguyen & Vu (2008) researched the possible implications of statutory and customary rights on forest governance in Vietnam and found some important conflicts in respect to rights of exclusion, benefit sharing and land use. Although both governance systems provide the right of exclusion, conflicts arise when statutory law allocates customary forest land to outsiders of the respective community. Conflicts with regard to land use of ethnic minorities relate to the fact that statutory law prohibits households to change the land use of designated forest land, while under customary law, land use change is in fact allowed by the community. Finally in terms of benefit sharing, findings of Nguyen, Nguyen & Vu (2008) present that mechanisms under statutory law are rather complex and sometimes even detrimental to indigenous communities. In Vietnam, customary laws of ethnic minorities are built on the subsistence economy and communal use of land and resources. Within this customary system, the use, exploitation and management of forest resources are seldom stipulated in fees (monetary or non-monetary), thus monetary incentives for forest governance do not comply with actual customary practices (Nguyen, Nguyen & Vu, 2008). Sunderlin & Huynh Thu Ba (2005) refer to the above in terms of traditional community forestry (i.e. customary institutions) and introduced community forestry (i.e. promoted by government organisations, forestry extension personnel, NGOs, etc.) and suggest that both models are likely to co-exist throughout Vietnam. Many ethnic minority groups in Vietnam still have strong indigenous community institutions for sustainable forest management. For these groups it is important that their customary rules and regulations are recognised and legalised by the Vietnamese government (i.e. inclusive forest devolution; see Sikor & Tran Ngoc Thanh, 2007). For some ethnic minority groups however, traditional land use systems and resource management institutions have changed in response to externalities such as resettlement, in-migration of Kinh households, commercial agriculture or growing population numbers (e.g. Castelle et al., 2006; Ngo Tri Dung & Webb, 2008). These groups are therefore likely to respond better to models of introduced community forestry (Huynh Thu Ba, 2005). Nguyen, Nguyen & Kuester (2005) illustrate that community forestry provides relatively limited benefits for rural households in Vietnam. Allocated natural forests are often degraded with low reserves, thus immediate income derived from the forest is little. At present, community forestry primarily serves subsistence needs of local households, while true economic benefits for communities are long-term. Whether community forestry would actually be viable in the long-term depends on the outcomes of a risk analysis on investments compared to risks of losing long-term benefits (Nguyen, Nguyen & Kuester, 2005).

Several regional case studies are available on the effects of forest land allocation in Vietnam, many of which focus on the Central Highlands (e.g. Cramb, Purcell & Ho, 2004; Nguyen Quang Tan, 2006; Tran Ngoc Thanh & Sikor, 2006; Sikor & Nguyen Quang Tan, 2007; Sikor & Tran Ngoc Thanh,

2007), some on the Northern Uplands (e.g. Gomiero et al., 2000; Sikor, 2006b; Castella et al., 2006; Jakobsen et al., 2007) and few on the Central Coast region (e.g. Gomiero et al., 2000; Hardcastle, 2002).

### 3.5 Conclusion

For good reasons, forest rehabilitation and livelihood development are important objectives of the forest land allocation policy in Vietnam. Due to different forest rehabilitation programs (e.g. Program 327, 5MHRP) Vietnam's forest cover has increased over the past decennia, yet the quality of Vietnam's natural resources lags behind. Much of the natural forest area in Vietnam that is allocated to communities and groups of households is degraded. The SFEs have applied logging techniques that are not very sustainable, the result being that there are little valuable resource reserves for local communities. Natural forests primarily provide local households with forest products for subsistence. A small proportion of better-off households may find opportunities to market forest products and reap commercial benefits, yet the majority of poor households in Vietnam depends on forest products as safety nets in their livelihoods. Unused and bare forest land in Vietnam has been allocated to individual households for the establishment of plantation forests. Successes of timber plantations are modest due to disincentives such as loss of swidden land and high investment costs against low yields. The introduction of high yield species however, together with the provision of government subsidies (e.g. seedlings, fertilizer) and extensions services (e.g. planting, weeding and tending techniques), make forest plantations more viable. Yet, also the status of household resources (e.g. labour capacity, investment capital, knowledge and techniques) and prevailing market conditions (e.g. access, roads, demand) are to a large extent, important determinants of the commercial potential of forest plantations in rural livelihoods.

Whether it involves the allocation of plantation forest or natural forest area, poor households in Vietnam may not equally benefit from forest devolution. This is especially the case for ethnic minorities in Vietnam, who are disproportionally poor compared to the Kinh majority, primarily due to geographical (i.e. upland regions) and cultural (i.e. customary practices) remoteness. The traditional livelihoods of ethnic minorities are built on a subsistence economy and therefore often not in line with market economy driven policies and institutions on forestry and development. With regard to the effects of forest land allocation on livelihood development, it is argued by some that recognition and legalisation of customary practices and institutions in forest governance will strengthen ethnic minority groups in their ability to derive true economic benefit of their allocated forest land, or at the very least prevent further marginalisation and impoverishment. Others argue however, that only by economic and cultural integration with the Kinh majority, ethnic minorities will be capable of transforming forest endowments into productive and sustainable forest practices and benefits. At present, both pathways to livelihood development and sustainable forest governance co-exist in

Vietnam, all depending on which geographical, economic, political and cultural conditions prevail in given localities.

In order to analyse the outcomes of these policies on local communities, the next chapters will look into more detail at the impact of forest land allocation on livelihood development. Following chapters comprise the analysis of fieldwork done among Katu ethnic minority groups and Kinh ethnic majority groups in two villages in Central Vietnam.

**CHAPTER 4: RESEACH METHODOLOGY****4.1 Introduction**

This study has been done as part of a larger cooperative research program between Tropenbos International Vietnam (TBI), Hue University of Agriculture and Forestry (HUAF) and Utrecht University (UU). With the ‘socialisation’ of Vietnam’s forest sector as overarching research focus, three students of Utrecht University were invited to conduct forest-related research from a human geographical perspective. Within the spectrum of forest land allocation, this resulted in three complementary research projects in Nam Dong district, Central Vietnam. Ms Lieneke Zuilhof conducted a study on stakeholder participation in forest land allocation. Research colleague Ms Anouk van Hoof addressed the livelihood component in FLA from the perspective of household wealth. The study at hand has taken household ethnicity (i.e. Katu and Kinh) as starting point in assessing the impacts of forest land allocation on rural livelihoods.

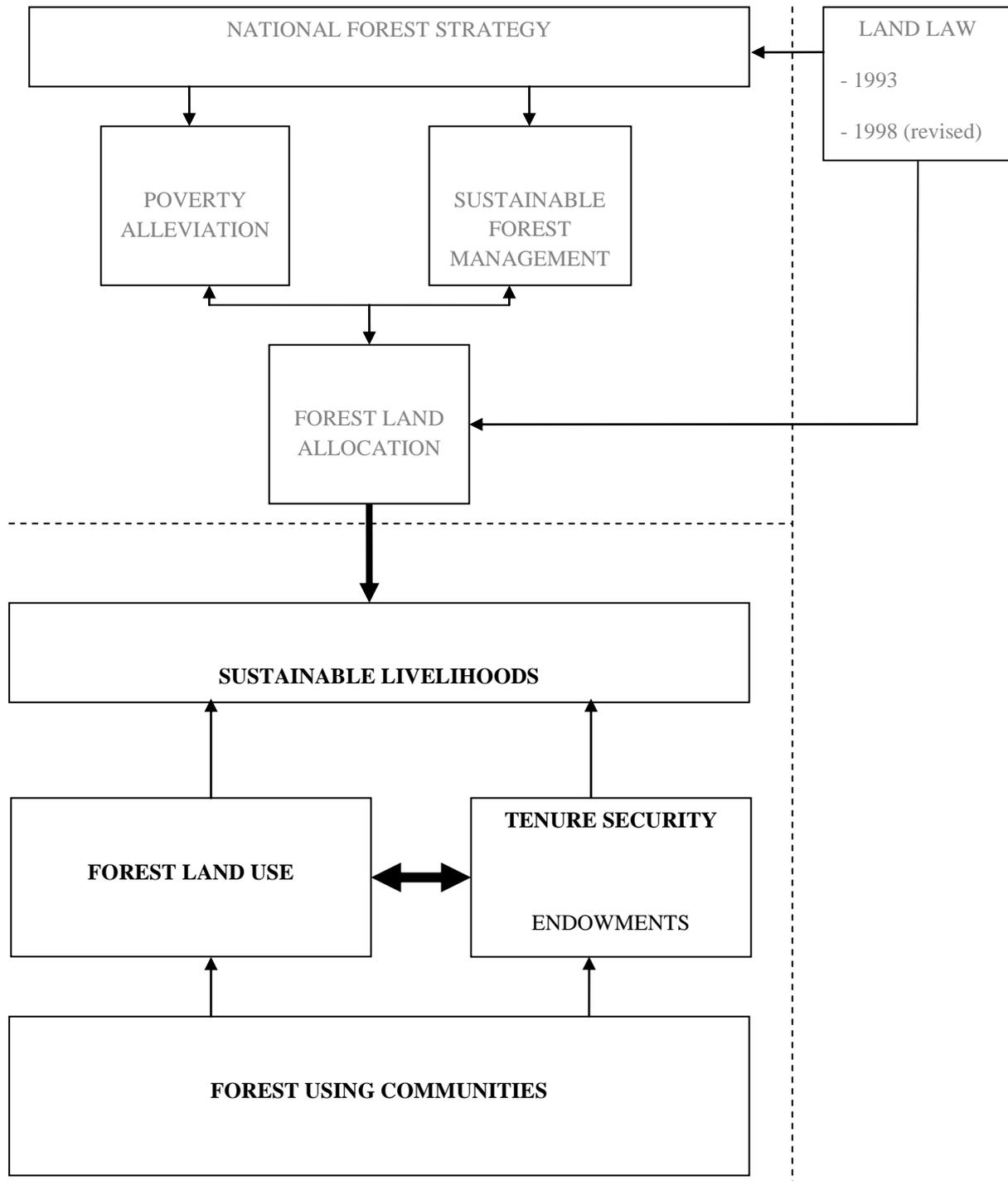
This chapter presents the main components of the applied research methodology in this study. Reference is given to the research rationale, the selection of research sites, and chosen methods of data collection. This chapter concludes with the discussion of the most relevant research challenges that were encountered during the field work and their possible bearing on the results.

**4.2 Research rationale**

Through the National Forest Strategy of Vietnam, which is aimed at ‘the socialisation of the forest sector’, both land ownership and management systems of forest land have changed. The decentralisation of the forest sector has led to the increased allocation of forest land and resources to individuals, groups of households and communities. The distribution of these local level forest rights is supposed to promote sustainable forest use and management and provide rural households with adequate forest income (e.g. monetary and non-monetary) for livelihood development.

In Vietnam, many poor people’s livelihoods are dependent on access to forest land and use of forest products. Changes in policies and practices in the forest sector are therefore expected to have a direct impact on their livelihoods. The range and extent of these impacts may however differ per context. Vietnam’s forest-using population is a heterogeneous group with different geographical, political, cultural and socioeconomic characteristics. It can only be assumed that these characteristics, to a lesser or greater extent, shape and influence the common forest use and management practices and the range and level of benefits (i.e. endowments and entitlements) that rural households are able to derive from their allocated forest land (see Figure 4.1: Conceptual framework).

Figure 4.1: Conceptual framework



As illustrated in previous chapters, the poorest of the poor in Vietnam are expected to benefit less from forestry and development policies in comparison to the relatively better-off households. The majority of Vietnam’s forest-using poor population is made up by ethnic minority groups, thus one may assume that especially these ethnic minorities face obstacles in obtaining the proposed benefits of forest land allocation.

This study aims at creating transparency in how different ethnic groups shape their forest-related livelihoods and how changes in forest policy may lead to changes in livelihoods. This study aims to gain insight in to what extent (if at all) forest endowments and return to these endowments actually differ between an ethnic minority (Katu) and an ethnic majority (Kinh) community in Central Vietnam, following the forest land allocation policy. This research seeks to gain a better understanding of the (ir)relevance of cultural dynamics in sustainable forest management and livelihood development and seeks to inform the Vietnamese forest land allocation policy on how ethnicity may or may not be of influence on policy outcomes.

### 4.3 Research questions

This livelihood study posed the following central research question:

*What is the impact of forest land allocation on the rural livelihoods of the Katu households (i.e. ethnic minority) of village 4 ‘A-ro’ and the Kinh households (i.e. ethnic majority) of village 6 ‘Vinh Hung’ in Thuong Quang Commune, Nam Dong District, Central Vietnam?*

The central research question has been further divided into a number of more specific sub-research questions:

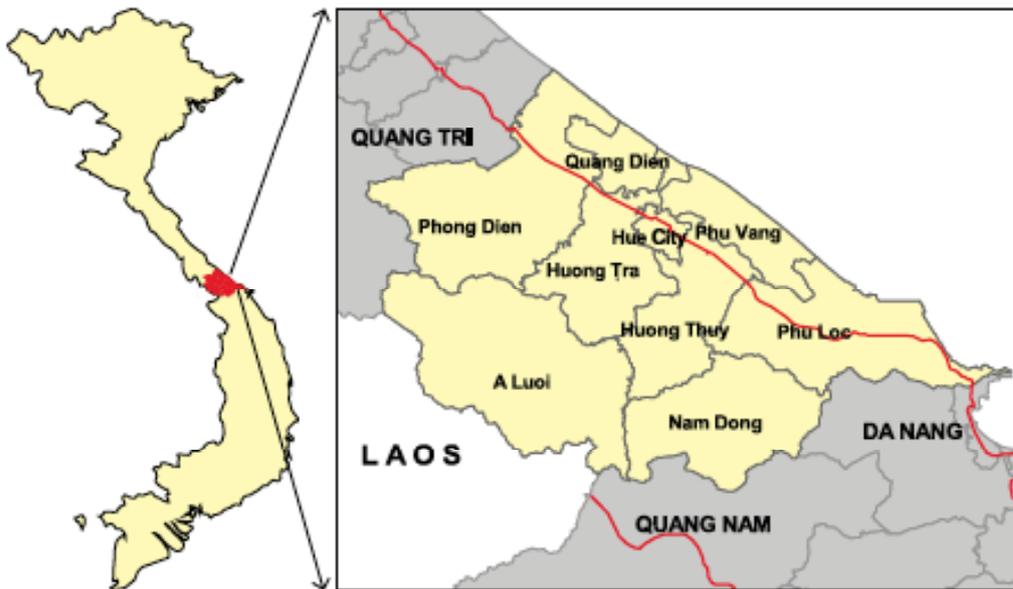
<b>RQ 1a</b>	- When and how did forest land allocation take place in Katu village 4 and Kinh village 6?
<b>RQ 1b</b>	- How did the Katu households of village 4 and the Kinh households of village 6 gain access to and secure forest land before forest land allocation?
<b>RQ 2</b>	- What are the characteristics of the resources allocated to Katu village 4 and Kinh village 6?
<b>RQ 3</b>	- What are the main socioeconomic characteristics of the Katu households of village 4 and the Kinh households of village 6?
<b>RQ 4a</b>	- What were the main livelihood activities of the Katu households of village 4 and the Kinh households of village 6 <b>before</b> forest land allocation?
<b>RQ 4b</b>	- What are the main livelihood activities of the Katu households of village 4 and the Kinh households of village 6 <b>after</b> forest land allocation?
<b>RQ 5a</b>	- To what extent and how did the Katu households of village 4 and the Kinh households of village 6 make use of forest land and forest resources in order to sustain their rural livelihoods <b>before</b> forest land allocation?
<b>RQ 5b</b>	- To what extent and how do the Katu households of village 4 and the Kinh households of village 6 make use of forest land and forest resources in order to sustain their rural livelihoods <b>after</b> forest land allocation?

<b>RQ 6a</b>	- What changes in livelihood strategies (if any) for the Katu households of village 4 and the Kinh households of village 6 can be identified following forest land allocation?
<b>RQ 6b</b>	- How do these changes (if any) affect the livelihood outcomes of the Katu households of village 4 and the Kinh households of village 6?
<b>RQ 7</b>	- When comparing the impact of forest land allocation on the rural livelihoods of the Katu households of village 4 and the Kinh households of village 6, what commonalities and differences can be identified and how can these be explained?

**4.4 Research area and site selection**

This study on the impact of forest land allocation on rural livelihoods has been conducted in Nam Dong district in Thua Thien Hue province (see Figure 4.2). Thua Thien Hue province is situated along Vietnam’s central coast with mountains and forests covering about 70 percent of the total provincial area (5,009 km<sup>2</sup>). The province counts a total population of 1.1 million people. About 52,000 people belong to an ethnic minority group and live in the forested mountainous areas of the province (Wunder, Bui Dung The & Ibarra, 2005).

**Figure 4.2: Map of Thua Thien Hue province and its districts**



*Source: Wunder, Bui Dung The & Ibarra, 2005*

Thua Thien Hue province is divided into 9 administrative districts, one of which includes Nam Dong. Nam Dong district is situated in the southwestern part of the province and counts a total area of 650.5 km<sup>2</sup>. Forest land makes up for a major part of total district area (64.5%), only a relatively small 5.3% accounts for agricultural land (Ngo Tri Dung & Webb, 2008). Nam Dong district is divided into

11 communes (see figure 4.3) and comprise a total of 66 villages. The district counted an average population of 23,115 people in 2006 (Nam Dong Statistical Yearbook, 2007), which comprises two different ethnic groups, namely the Katu and Kinh. About 41% of Nam Dong's local population belongs to the ethnic minority group Katu. The Katu resettled from forest areas into Nam Dong district immediately after Vietnam's reunification in 1975. Forest-based activities such as swidden agriculture, wildlife hunting and timber extraction form an important component of their livelihoods. The remaining part of Nam Dong's population (59%) is made up by Kinh households, Vietnam's ethnic majority group. The Kinh households resettled from Vietnam's coastal areas to Nam Dong district as part of the New Economic Zone development program in the early 1976s. Both ethnic groups rely primarily on farming for livelihood support (Webb Edward L. & Ganesh P. Shivakoti, 2008).

The allocation of forest land in Nam Dong district started in the 1990s. In the beginning only bare land was allocated to local households for the purpose of tree planting (e.g. Program 327). Since 2003 also natural forest land was allocated to communities and groups of households in Nam Dong district. Out of the 11 communes in Nam Dong district, 7 communes have taken part in forest land allocation programs. Within these communes, both Kinh and Katu households are equally allowed to participate (Webb Edward L. & Ganesh P. Shivakoti, 2008).

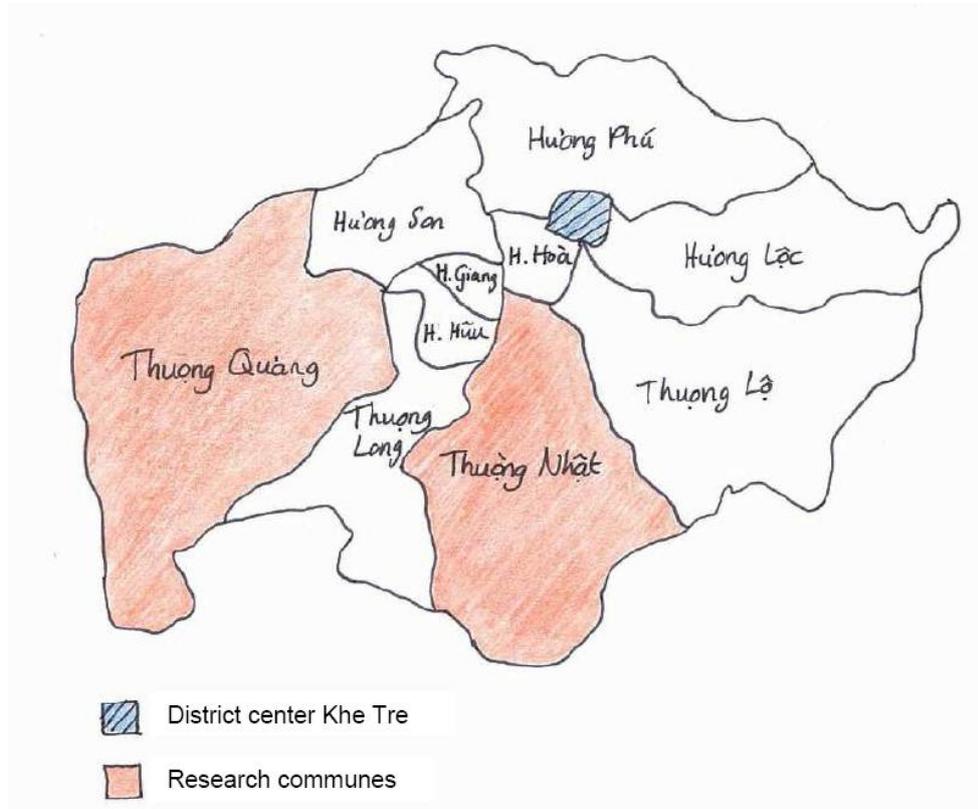
#### 4.4.1 Selection of research communes and villages

The selection of the research communes and villages within Nam Dong district took place in close consultation with HUAF and Tropenbos Vietnam. The research sites had to meet the relevant criteria (e.g. different ethnic and wealth groups, different forest land allocation programs) of the three complementary research projects carried out simultaneously by Ms Zuilhof, Ms van Hoof and myself. In addition, practical matters related to the research planning and process had to be taken into consideration (e.g. allocation of budget, time, transportation, translators, facilitators). Within Nam Dong district both Thuong Quang and Thuong Nhat were eventually selected as research communes for the three complementary research projects.

The study at hand limited the selection to Thuong Quang, as this commune had longer experience with natural forest land allocation than Thuong Nhat. Natural forest land was allocated to communities and groups of households in Thuong Quang between 2002 and 2004. During this period the entire process of Red Book issuance was also completed. In Thuong Nhat commune on the other hand, people were still awaiting their Red Book certificate for the allocated natural forest already since 2006. Besides the relatively longest experience with natural forest land allocation, Thuong Quang commune also closely met the research criteria in terms of ethnicity. With a total number of 283 households, of which 163 households are Katu (58%), the commune has a relatively even mix of Katu and Kinh inhabitants. Out of the 7 villages in Thuong Quang commune, 3 villages are homogeneous Kinh, 3

villages are homogeneous Katu, and 1 village is heterogeneous Katu (49 households) and Kinh (10 households).

**Figure 4.3: Map of Nam Dong district and its communes**



*Source: The Green Corridor Project, 2006*

Based on discussions with commune officials in Thuong Quang on village ethnicity, willingness of participation, and acceptable travel distance between the research villages, village 4 ‘A-ro’ (30 Katu households) and village 6 ‘Vinh Hung’ (41 Kinh households) were eventually selected for this case study.

#### **4.5 Data collection methods**

In order to assess the livelihood impacts of forest land allocation in village 4 ‘A-ro’ and village 6 ‘Vinh Hung’ in Thuong Quang commune, both qualitative and quantitative research methods were applied. During the entire research process literature review served as a foundation for the theoretical and thematic geographical framework of the research. On location in Vietnam this was supplemented by desk research and interviews with key informants on provincial, district and commune level (see Appendix I), which provided more targeted and detailed information on forest land allocation and rural livelihoods in the selected research area. The 3 month field work in village 4 ‘A-ro’ and village 6 ‘Vinh Hung’ in Thuong Quang commune between March and June 2008 comprised various

participatory research methods, a household survey and a selection of household interviews (see Appendix II). Following section will further elaborate on these methods.

#### **4.5.1 Participatory research methods**

The first field visit to village 4 ‘A-ro’ and village 6 ‘Vinh Hung’ was aimed at forming a general picture of the livelihoods of the research population and more specifically of the role, value and relations with the forest before and after allocation. After explaining the purpose and conditions of the research to the respective village headman and receiving official permission for village participation, the first field visit comprised a village walk, a village/forest mapping exercise and a focus group discussion. The participants in this first round of participatory exercises included the village headman and 5 village members with good knowledge about the forest.

A more comprehensive picture of forest-related livelihoods was gained during the second field visit which comprised the following participatory research tools: a wealth ranking exercise, an inventory and ranking exercise of livelihood activities and the making of a seasonal calendar. The output of these exercises provided the basis of a group discussion on forest use and access in relation to household wealth and other livelihood activities. The group of participants included the village headman and 9 village members of different wealth groups (e.g. poor, medium-off, better-off).

In order to assess the impacts of forest allocation on the livelihoods of the research population, it was necessary to gain insight in the ‘before FLA’ and ‘after FLA’ situation in the research villages. The third field visit therefore included a village timeline exercise and a trendline analysis in order to identify the most important events that had an impact on the living and forest conditions of the villagers. These participatory exercises were followed up by a group discussion in which the participating villagers (e.g. village headman and 7 village members of different age groups) shared their views on how various development programs and policies have affected their livelihoods throughout the years.

The outcomes of the participatory research methods provided the foundation and direction for a household survey and a number of semi-structured household interviews that were conducted in the second phase of the field research. These will be further discussed in following section.

#### **4.5.2 Household survey and semi-structured household interviews**

In order to quantify some of the qualitative data gathered through the participatory research methods in the first phase of the field work, Ms Anouk van Hoof and myself concluded the research period with a household survey (see Appendix III). Household information included household size, educational levels, labour capacity and household assets such as land holdings and savings. Furthermore, households were surveyed about their livelihood activities in general and their forest use

practices in specific, both before and after forest land allocation. The household survey concluded with questions about the establishment of acacia forest plantations and the perceived household costs and benefits. The household survey was conducted among all 71 households of both village 4 ‘A-ro’ (30 Katu inhabitants) and village 6 ‘Vinh Hung’ (41 Kinh inhabitants) in Thuong Quang commune. As previous research findings indicated that primarily male village members had much knowledge about the forest, the head of the household was the preferred respondent of the survey. With a total response of 71 households (100%), 60 respondents were in fact head of the household and 11 respondents included the wife of the household.

In order to maximise the reliability and validity of the survey results, the household survey was first piloted among a small number of households in village 1 in Thuong Nhat commune (i.e. one of the study sites of research colleagues Ms Zuilhof and Ms van Hoof). This pilot survey enabled us to filter out inadequacies and refine the content and translation of the survey and also the process of conducting the survey. After the pilot phase, the revised household survey was carried out by a group of 9 HUAF students, all of which received an extensive briefing beforehand.

While the group of 9 HUAF students conducted the household survey in village 4 ‘A-ro’ and village 6 ‘Vinh Hung’, Ms van Hoof and myself conducted a number of semi-structured household interviews simultaneously. These in-depth interviews enabled us to elaborate some more on topics such as migration history, investments in acacia plantations, rights and responsibilities in forest management and protection and in addition gain more insight in how forest land allocation has impacted the individual lives of the respondents. The selection of households that were interviewed was made in consultation with the respective village headman.

#### **4.5.3 Reliability and validity**

By using a wide variety of research methods (e.g. participatory methods, survey and household interviews) and by sharing and comparing findings and results with research colleagues Ms Zuilhof and Ms van Hoof, there has been a high degree of data triangulation throughout the entire research. This continuous process of data triangulation has helped to maximise the reliability and validity of the research project. Research results however lack the potential of being representative for larger populations, since this livelihood study covers only the Katu households of village 4 and the Kinh households of village 6 in Thuong Quang commune, making the geographical research area rather small. Yet, the micro scale findings and conclusions of this research may prove to be indicative for larger trends in Vietnam and in this way inform the policy arena of ethnicity, forestry and livelihood development.

#### 4.6 Research dilemmas and challenges

During the course of the field work, some minor dilemmas and challenges occurred with regard to good research practices from time to time. The most relevant aspects will be briefly discussed in this section.

##### Compensation fees

In order to conduct our research in the selected villages in Thuong Quang commune, we had to apply for an official research permit. This permit only allowed us to conduct research activities during the day, which meant that participation in the research would interfere with the daily working routine of the villagers. In order to compensate the estimated loss of (subsistence or monetary) income, all research participants received a per diem fee. For the participatory exercises lasting half a day or a full day, participants received 30,000 VND. Respondents of the household survey and household interviews were compensated with 10,000 VND. The village leader received a slightly higher compensation fee of 50,000 VND for each day research was conducted in the respective village. We were advised on these compensation practices by our host organisations TBI Vietnam and HUAF (10,000 VND = 0.40 Euro in June 2008).

##### Participatory exercises

Before each participatory exercise, a 'wish' list of relevant characteristics of village participants (e.g. age, gender, wealth category, position within the village) was proposed and provided to the village headman for final selection. In most cases the final selection of participants ended up being dominated by male village members as these appeared to have the most extensive knowledge about forest-related topics. The same applied for representative members of village organisations (e.g. Women's Union, Farmer's Union, Veteran Union), who were also slightly overrepresented during the participatory exercises in comparison to the common villager. Aware that a certain domination of participants may have had bearing on the participatory research outcomes, a conscious decision was made to allow this in order to increase chances of collecting accurate data on forest land allocation in a limited timeframe. Furthermore, the views and situation of the common villagers were equally represented in the household survey that was conducted among the 71 households of village 4 'A-ro' and village 6 'Vinh Hung'. Since most of the respondents (85%) included the male head of the household however, the survey results are subject to a gender bias. Yet also in this case, a conscious decision was made to give prevalence to gathering accurate and full information on the research theme instead of striving for gender equality in the research population.

Another aspect that may have had bearing on the participatory research outcomes was the presence of the village headman during all participatory exercises and group discussions. This may have caused participating villagers to withhold diverging ideas or critical information about the research theme during the meetings. The participatory research outcomes may therefore prove to be too much generalised. However, the household survey that was conducted among the 71 households of village 4 ‘A-ro’ and village 6 ‘Vinh Hung’ provides more concrete data that was gathered in the privacy of the household’s home and anonymously processed and analysed for research purposes.

### Communication and translation

The field work of this research was conducted in a multi-national research context with different spoken languages and cultural customs. Our research context officially comprised 4 different spoken languages, namely Katu, Vietnamese, English and Dutch. As the Katu households of village 4 ‘A-ro’ in Thuong Quang all mastered the official Vietnamese Kinh language in addition to their own spoken Katu language, we ended up working with ‘merely’ 3 different languages in practice. The working language among the research team was English. In essence this was a foreign language to all of us, as the mother tongue of the 3 research students from Utrecht University was Dutch, while Vietnamese was the mother tongue of the 9 co-research students from HUAF, the research facilitators and the translators. During the field work in this multi-national research context, the main challenge was to minimise data loss in the process of multiple language translation. Despite our best efforts, in practice it sometimes proved inevitable that data was lost in the process of translation, for example in situations where the respondent gave an extensive answer, yet the translator merely provided a short summary as translation. Practice also proved that it was rather impossible to gather data that was completely free of the personal and cultural interpretation of the translators. However, through a continuous (de)briefing process with the translators and by working with the same translator as much as possible in the respective research villages, we attempted to minimise coding and decoding errors in the process of multiple language translation to the best of our ability.

**CHAPTER 5: FOREST LAND ALLOCATION IN THE RESEARCH VILLAGES****5.1 Introduction**

The allocation of forest land in Nam Dong district started in the 1990s with the allocation of bare land to local households for the establishment of forest plantations. Since 2003 this was followed by the allocation of natural forest land for protection and management purposes to groups of households and communities in the district. In the research commune Thuong Quang most natural forest land (about 92%) was under management of Khe Tre Forest Enterprise of Nam Dong district up to 2002. The policy on forest land use planning and allocation however stipulated that about 95% of the commune's natural forest land was to be allocated to local households and communities between 2003 and 2010 (Thuong Quang CPC, 2003). Different organisations helped to facilitate the implementation process of forest land allocation in Thuong Quang commune through participatory programs that were executed on both commune and village level.

This chapter aims to gain insight into the process of forest land allocation in the research villages by answering some of the following questions. What are the main characteristics of the allocated forest land in both villages? What programs and forest management models were used for the implementation of forest land allocation? What are the proposed costs and benefits of forest land allocation and how are these perceived among the research population? Throughout this chapter a continuous comparison is made between the Katu and Kinh research communities in order to distil main differences and commonalities between the two ethnic groups.

**5.2 Forest land use planning and allocation in Thuong Quang commune**

The mountainous commune Thuong Quang in the northwestern part of Nam Dong district has varying heights from 70 meter at the lowest point to 1.298 meter at the highest mountain top. Approximately 65% (1663.30 ha) of the commune's total natural area comprises forest land, much of which is highly degraded and located on steep slopes (Webb, 2008). In 2002 most of the natural forest land in Thuong Quang commune was still under state management (e.g. Khe Tre Forest Enterprise Nam Dong). Local households were involved in forest management and protection, but only on an ad-hoc basis in the form of forest protection contracts (40,000 VND/ha/year). These forest protection contracts were interlinked with the Sedentarisation and Fixed Cultivation project of the Vietnamese government, thus at the time this state project was finalised, all forest protection contracts with local households were dissolved. As a result the natural forest in Thuong Quang commune was left more or less without an owner and therefore became more prone to degradation. In addition, the local population was left without a stable income that was previously derived from the forest protection contracts (Thuong Quang CPC, 2003). In 2003 however, the policy on forest land use planning and

allocation went into effect, which stipulated that about 95% of all forest land (see Table 5.1) had to be allocated to local households in Thuong Quang commune by the year 2010.

**Table 5.1: Forest land use planning in Thuong Quang commune, 2003-2010 (ha)**

ORDER	KIND OF LAND	TOTAL (HA)	FOREST MANAGER	
			Households (ha)	CPC (ha)
1	Natural forest	1446,7	1374,3	72,4
	- <i>Management and protection forest</i>	1083,30	1029,1	54,2
	- <i>Regeneration forest</i>	363,4	345,2	18,2
2	Bare land planned for plantation forest	190,3	190,3	0
3	Plantation forest	26,3	26,3	0
<b>TOTAL</b>	<b>FOREST LAND</b>	<b>1663,3</b>	<b>1590,9</b>	<b>72,4</b>

Source: Thuong Quang CPC, 2003

Within the Vietnamese context of forest land allocation it is important to make a distinction between the allocation of natural forest land and that of plantation forest land (this also includes bare land planned for plantation forest). The function of both categories of forest land can vary from protection, special-use or production forest, which serves as the basis for further specified forest management and use regulations. In terms of forest recipients, natural forest land is mostly allocated to communities or groups of households in Vietnam, while (bare) plantation forest land is primarily allocated to individual households (Webb, 2008).

**Table 5.2: Possible forest land allocation contexts in Thuong Quang commune**

		FOREST RESOURCE	
		(Bare) forest land for plantation	Natural forest land
FOREST RECIPIENT	Individual household	X	X
	Community /Household group	-	X

Source: Webb, 2008

Given the latter, different forest land allocation contexts are imaginable in Vietnam (see Table 5.2). Following section will further elaborate upon the specific forest land allocation contexts that are found in Katu village 4 and Kinh village 6 in Thuong Quang commune.

### 5.3 The allocation of natural forest land in the research villages

In both research villages the allocation process of natural forest was supported by participatory forest land allocation programs of different Vietnam-based international development organisations. Between 2003 and 2005 the allocation process of natural forest land in Kinh village 6 was supported by the LUPLA program (Land Use Planning and Land Allocation) of SNV. Helvetas facilitated natural forest land allocation through the ETSP program (Extension and Training Support Project for forestry) in Katu village 4 between 2003 and 2007. Both the LUPLA and ETSP program were aimed at achieving a high level of participation and ownership with regard to forest land allocation on both commune and village level (Hoang Lan Anh & Claudia Doets, 2004; Helvetas, 2006).

The natural forest in both research villages was allocated following the community forest management (CFM) model, which in Vietnam has three variations (Duong Viet Tinh et al., 2007):

- 1) Natural forest allocated to village communities for management (*Katu village 4*)
- 2) Natural forest allocated to household groups for management (*Kinh village 6*)
- 3) Natural forest allocated to communities for management based on customary law/village constitutions (*not included in this research*)

Both CFM model 1 and 2 are based on state law and legislation in terms of forest management regulations and benefit sharing mechanisms and correspond with what Huynh Thu Ba (2005) referred to as introduced models of community forestry (see subparagraph 3.3.3). This is in contrast with CFM model 3 that is solely based on customary rules and village constitutions and which is at present not yet recognised in any way by state law in Vietnam (i.e. traditional community forestry according to Huynh Thu Ba, 2005).

The applied CFM models in the research villages were chosen by the state and implementing development organisations. Although officially villagers are allowed to have a say in the chosen CFM model, households in the research villages claimed they were not included in this decision-making process. In Kinh village 6 the natural forest was allocated to a group of 14 households following CFM model 2. In Katu village 4 the natural forest was allocated to the entire village community following CFM model 1. CFM model 3, which is a common model among ethnic minority groups in Vietnam, was not chosen for Katu village 4, since traditional village and forest institutions have currently not been integrated in the livelihoods of these villagers. Strong community-based institutions for forest management have weakened among the Katu since their migration from the forest to Nam Dong district in 1975. At present Katu village 4 follows the ‘official’ commune system for village administration and forest management.

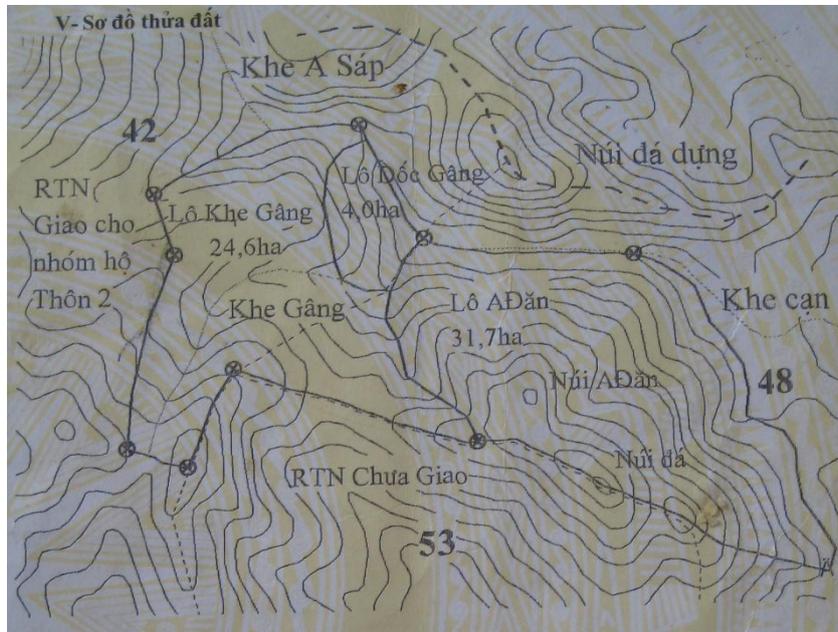
### 5.3.1 Natural forest land allocation in Katu village 4

Natural forest land was allocated to the entire community of Katu village 4 through the experimental forest land allocation program ETSP of Helvetas between 2003 and 2007. The total natural forest area that was allocated comprised 60.3 hectares (see Figure 5.1), which was divided into 3 different forest plots:

- 1) A Đăn : 31.7 ha of poor forest for protection and enrichment
- 2) Dốc Gâng : 4.0 ha of barren land planned for plantation
- 3) Khe Gâng : 24.6 ha of poor forest for protection and enrichment

The two largest forest plots A Đăn (31.7 ha) and Khe Gâng (24.6 ha) are located relatively nearby (less than an hour walk) the residential area of village 4 and comprise primarily sloping forest land of poor quality. The management objectives of both forest plots are therefore aimed at forest protection and enrichment. Forest plot Dốc Gâng is located further away (over an hour walk) from village 4 and comprises 4.0 ha of bare land planned for acacia plantation that is expected to supply future economic benefits for the entire community (Nam Dong DPC, 2005).

**Figure 5.1: Allocated natural forest (60.3 ha) to the community of Katu village 4**



*Source: photograph of the RBC issued to Katu village 4 in 2006*

The community regulations for Katu village 4 on forest management, protection and development are based on state laws (e.g. Land Law of 2003, Forest Management and Protection Law of 2004, Decision 178 of 2001), the draft guidelines on management of village community forest of the

Ministry of Agriculture and Rural Development (2006) and participatory group discussions facilitated by ETSP in 2005. All community forest use regulations, interests and responsibilities are stated in a statutory required five-year CFM plan of the village, which needs to be approved by the CPC and the DPC to become officially recognised and legally binding (Helvetas, 2006). Furthermore, Katu village 4 was obliged to establish a Village Forest Management Board (VFMB) and two forest protection teams as governing forest institutions of the community (Thuong Quang CPC & A-Ro Village Management Board, 2005).

### Community regulations

Community forest use regulations state that households of village 4 are allowed to exploit wood for the purpose of making a house in forest plot Khe Găng. Before exploitation, permission needs to be asked to the entire village community and official approval is needed from the Village Forest Management Board (VFMB) and CPC.

The exploitation of wood for the purpose of commercial sales is limited to the forest plot A Đăn. Exploitation can only take place following the five-year CFM plan and official approval is needed from the CPC. In addition, villagers are obliged to plant back new trees after exploitation. Field results indicate that not many households of village 4 are interested in exploiting, hence managing and protecting, forest plot A Đăn. Not only is the forest plot rather difficult to access (stone sloping road), resulting in high logging and transportation costs, households also state that the application and approval procedure for legal commercial timber logging is complex and time consuming.

NTFPs can be collected freely by the households of village 4 in the allocated natural forest. Outsiders are not allowed to exploit NTFPs, and when villagers catch them they may confiscate all illegally collected forest products. Villagers may claim 30% of the confiscated forest products for their own benefit, the remaining 70% will go into the village forest fund.

Households of village 4 are not allowed to hunt wild animals in the allocated forest, nor burn down forest land for swidden cultivation, nor hold cattle in the forest for pasturing.

All illegal forest activities in the allocated natural forest of village 4 are punished with monetary penalties and compensation fees that are in accordance with village forest protection regulations. In case of a first or minor forest violation, the respective offender receives a warning in front of the entire village and must in addition compensate the value of the damaged forest value following current market prices. In case of a second or more severe forest violation, the respective forest offence will be registered in the village administration system, yet is passed on to the CPC that will further deal with the forest violation in accordance with commune law. Following village forest protection regulations, all forest offences must be registered in the village administration system. The village leader and VFMB are responsible for the actual process of punishment and rewarding (% compensation for detector, confiscator and VFMB) and by means of a village meeting all community members are fully

informed about the respective forest offence. Only when at least 50% of households attend these village meetings and achieve consensus, the course of action proposed by the VFMB becomes effective. In all other cases, the forest protection regulations of the state prevail.

The village forest protection and management regulations that are stated in the 5-year CFM plan of Katu village 4 have been developed and popularised through participatory village meetings that were facilitated by ETSP in 2005. The households of Katu village 4 had however only limited knowledge of sustainable community forest management (i.e. traditional community forest institutions had been deteriorating since 1975) which hampered the participatory process of developing adequate village forest protection and management regulations. It is for this reason that in practice the draft guidelines of the Ministry of Agriculture and Rural Development for village community forest management (2006) has served as main input for the community forest regulations of Katu village 4.

### Community responsibilities

The responsibilities of sustainable community forest management are equally shared among all households of village 4 and the village forest management board (e.g. village leader and 5 representatives of the village unions). The village forest management board is responsible for preparing and facilitating a village meeting on forest management, protection and development once every three months. The villagers are obliged to participate in these meetings. Furthermore the village forest management board oversees the forest protection groups of the village and is in charge of the village forest fund. Officially village 4 has 2 forest protection groups of each 4 members that, according to the official CFM regulations, should patrol the allocated natural forest once every 15 days. Household interviews learnt however that 7 households patrolled the allocated forest once a month up to 2007, yet stopped patrolling activities since they were not getting paid. The forest protection teams discussed this matter with the Forest Protection Unit (FPU), yet were referred back to the VFMB as the party that should provide monetary compensation for patrolling activities. The VFMB however replied not to have enough budget to provide villagers payment for patrolling activities. While this matter currently remains unresolved, the VFMB proposed that all villagers that go into the allocated forest for NTFP collection keep an eye out for illegal activities and so provide a temporarily alternative for a proper forest protection team.

### Community interests

Following forest policy and regulations, community forest management incorporates several interests for the households of village 4. Firstly there are the direct benefits of the allocated natural forest in terms of forest products (e.g. timber and NTFPs) that may be exploited by the villagers according to the regulations of the five-year CFM plan. In addition, all community members are

entitled to an equal share of benefits derived from the acacia plantation forest (i.e. 4.0 ha forest plot Dốc Gâng) that is located inside the natural forest. Thirdly, the community is entitled to a share of monetary benefits derived from confiscated forest products. Lastly, the community benefits in terms of the technical support and training they receive on sustainable forest management, protection and development.

In practice the benefit sharing mechanisms in community forestry are not always entirely clear. This does not only apply to the benefit ratio between individual households and the village community but also to the benefit distribution between the VFMB on village level and the CPC or FPU on respective commune and district level. Field results provided some interesting examples of this. An interview with a member of the VFMB learnt that village 4 is allowed to log 10 valuable trees per year for commercial purposes. As these trees are mostly located deep inside the mountainous and rocky forest plot A Đăn, commercial timber logging is rather labour, time and capital intensive and therefore not always feasible. If the households of village 4 however fail to log the selected trees in the given year, the community loses all the logging rights and benefits to the FPU. This seems hardly fair in case the community does invest time and effort in protecting the forest plot, yet lacks the labour and equipment for timely and cost-effective exploitation. Similar remarks were made by the households of village 4 in terms of forest enrichment practices which are considered very time consuming but little beneficial. Enrichment practices appeared unsuccessful in the case where 4000 acacia trees died because villagers were insufficiently informed about what technique to use. Another case referred to enrichment tree seedlings collected from the rich forest that died already before the villagers even had the chance to plant them in the poor forest. Households of Katu village 4 described enrichment practices as time and knowledge intensive, and in addition expressed the lack of monetary incentives. Some households did however refer to the environmental benefits of enrichment and protection practices stating it “contributes to reducing the risk of drought and erosion thus protecting valuable lowland cultivation areas”. Survey results did not mirror the latter response regarding environmental benefits. From the 24 households (80%) in villages 4 that do perceive benefits of the allocation of natural forest land, only 1 household further specified this as “improve quality of forest” and another 2 households as “management and protection rights”. Most households in village 4 mentioned “future earnings” (8 hh) and “NTFP collection” (7 hh) as important benefits of natural forest land allocation, which are in nature more economic than environmental (see Appendix IV).

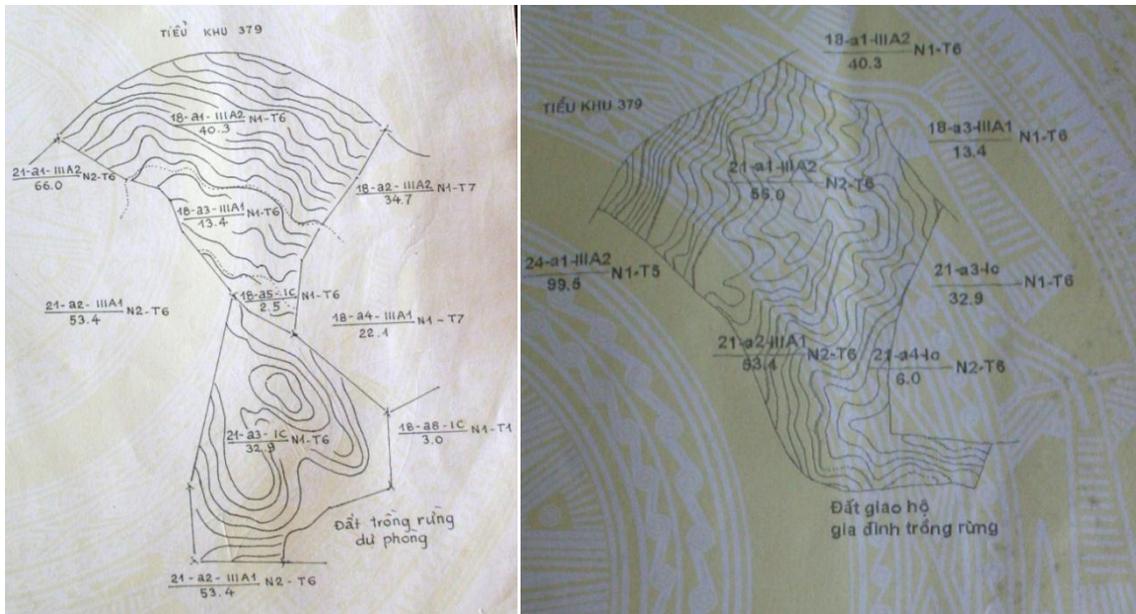
### 5.3.2 Natural forest land allocation in Kinh village 6

In Kinh village 6 natural forest land was allocated to a selected group of 14 households through the LUPLA program of SNV between 2003 and 2005. The total forest area that was allocated comprises three different forest plots (see Figure 5.2) located in the surrounding of village 6:

- 1) 89.1 ha of natural forest for management and protection (*household group 1*)
- 2) 115.4 ha of natural forest for management and protection (*household group 2*)
- 3) 18.0 ha of bare land planned for acacia plantation forest (*household group 1 & 2*)

The natural forest land (204.5 ha) in Kinh village 6 is allocated to two groups of common-use households for management, protection and development purposes. Household group 1 comprises 6 households that are in charge of the management of 89.1 hectares of natural forest land. Household group 2 comprises 8 households that manage 115.4 hectares of natural forest land. Both forest plots are located on steep slopes about 1 km from the residential area. According to the household group members 70% of the forest is poor, 15-20% is of medium quality and 10-15% of the forest can be classified as rich. In 2005 both household groups were officially issued forest use rights and a Red Book certificate in which the natural forest plot of each group is identified. This entitles each member of the household group to utilize, invest and exploit the identified volume of allocated natural forest according to the CPC regulations on sustainable forest management. All forest products gained from major harvesting or thinning in the natural forest should be equally divided among all members of the respective household group.

**Figure 5.2: Allocated natural forest to the household groups of Kinh village 6**  
**(l) household group 1 (89.1 ha) and (r) household group 2 (115.4 ha)**



Source: photograph of the RBC issued to the household groups of Kinh village 6 in 2005

The 18 hectares of bare land ('bim' forest) that is located inside the natural forest is allocated to both household groups. The DPC gave permission to reclassify this 'bim' forest as bare land planned for plantation and in 2005 an official RBC was issued to the household groups. The 18.0 hectares of bare land was equally divided among the members of both household groups by means of a lottery

system. All members are entitled to an equal share of land together with future benefits. Household interviews learnt that both household groups planned on planting acacia trees in 2008 financed with a loan from the Rural Development Bank. The first benefits from acacia timber harvesting are expected in 2012.

Besides being entitled to an equal share of forest benefits, all members of the household group are also equally responsible for the enrichment and protection of the allocated natural forest land. Protection activities do not only include the prevention and management of forest intrusion and illegal forest activities, the respective household groups are also in charge of monitoring sustainable forest use among the other households of village 6. Non-household group members of village 6 are allowed to use the allocated natural forest for both NTFP collection and timber logging for housing, but always have to ask permission to the members of the household groups beforehand. People from surrounding villages may also request to use the natural forest of village 6, but only for the collection of NTFPs. Household interviews suggest that many Katu households of village 4 actually do collect NTFPs in the allocated forest of Kinh village 6.

#### Establishment of common-use household groups in village 6

The governing forest institution of the natural forest area allocated to village 6 consists of the two common-use household groups that were issued the RBCs. These household groups were formed on a voluntarily basis. With the start of the allocation process of natural forest in 2003, several meetings were held in village 6 about the concept of forest land allocation. SNV aimed at informing households extensively about responsibilities and benefits and following these meetings the villagers were given the opportunity to register for natural forest land allocation. This resulted in the registration of a total of 14 households in village 6 (34% of total village population) and the formation of two common-use household groups for the management of the allocated natural forest. Members of these household groups expressed in interviews that they were at first somewhat disappointed to receive mostly poor quality natural forest land. However, after they gained knowledge through SNV training in how to protect the forest and restore quality they started to perceive more benefits. The most common perceived benefits of natural forest land allocation that were expressed by the household group members included: “the allocated natural forest has an owner”, “future wood harvesting”, “future income” and “quality improvement of forest” (see also survey results in Appendix IV).

In Kinh village 6 the majority of households (66%) is not involved in the management, protection and development of natural forest land. Field results indicate that only a small number of 10 households, consciously and without regret, did not register for natural forest land allocation because they lack the labour capacity (e.g. old age, poor health). The remaining 17 households however expressed that they were not fully aware of the implications (both benefits and costs) of the allocation of natural forest land and in hindsight therefore regret not having registered. Some households

mentioned their loss of swidden land that they formerly cultivated outside the demarcation lines of the allocated natural forest of village 6. Villagers did not foresee the FPU reclaiming these upland plots for the allocation to households of the newly established neighbouring village 8. The respective households of Kinh village 6 state they lost their income from upland cultivation while being left without anything in return, as they did not register for natural forest land. Other households claimed they were under the impression that registering for natural forest land would primarily include protection and enrichment responsibilities with limited benefits in return since most of the allocated forest is of poor quality. Household responses also included regrets about missing out on the future benefits of the 18.0 ha of acacia plantation forest land inside the natural forest that was allocated to both common-use household groups.

Many of the Kinh households that did not register for natural forest land allocation in 2003, expressed they would like another opportunity to register in order to start claiming their perceived benefits. This is however not possible as the CPC of Thuong Quang has no additional natural forest land available for allocation to village 6. The suggestion of the respective households joining the current common-use household groups of village 6, was also dismissed by the CPC, leaving this matter currently unresolved.

#### **5.4 The allocation of plantation forest land in the research villages**

The allocation of plantation forest land to individual households started between 2004 and 2005 in the research villages. The allocation process entailed that all upland fields (i.e. swidden cultivation land) of the villagers were reclaimed by the FPU in order to be reclassified as plantation forest land planned for acacia. The CPC was in charge of the actual allocation of the plantation forest land and the issuance of RBCs. The total area of plantation forest land that was allocated in the research villages comprised respectively 36.1 ha in Katu village 4 and 37.9 ha in Kinh village 6 (see Appendix IV).

In Katu village 4 plantation forest land was redistributed among the households based on prior use of the land. Households that had less than or exactly 1.0 ha of swidden land were advised by the FPU to plant acacia on the land and register for an official RBC. All additional swidden land of the households (thus exceeding the 1.0 ha) was reclaimed by the FPU and equally redistributed among households in the village with relatively more labour and capital available for the establishment of acacia plantations. In Kinh village 6 plantation forest land was allocated among the villagers based on the outcomes of a lottery system that decided which household would receive what plot for acacia plantation (NB: this has mostly to do with the location of the plots; size is based on the household labour capacity that is available to plant and maintain an acacia plantation).

With the allocation of plantation forest land in the research villages, households had to change their land use practice from swidden cultivation (e.g. upland cultivation of primarily rice and cassava for subsistence) to acacia tree growing (e.g. commercial forest plantations for income generation). Both

the Kinh and Katu households had been practicing a 2-year rotational system of rice and cassava cultivation on two different upland plots since the establishment of the villages in the late 1970s early 1980s. From PRA exercises and household interviews it became clear that a small number of households in both villages started to practice lowland rice cultivation on an experimental basis during the 1980s. From the 1990s onwards, the practice of lowland rice cultivation increased among the Kinh and Katu households, while simultaneously the need for upland cultivation became less urgent. By the time that plantation forest land allocation was introduced in the villages between 2004 and 2005, the role of upland cultivation had already changed from serving daily subsistence needs to providing safety nets (e.g. cassava) in time of food shortage. Along with this change in livelihood function came the common perception among the majority of both Kinh and Katu households that benefits of acacia plantations would outweigh the safety net function of upland cultivation. Survey results confirm the latter, as approximately 96% of the respondents of both research villages indicated that “income from the plantation forest” is perceived as main benefit of plantation forest land allocation.

## 5.5 Conclusion

In the research villages natural forest land was allocated between 2003 and 2007 and facilitated by the participatory forest land allocation programs of respectively Helvetas in village 4 (ETSP) and SNV in village 6 (LUPLA). Natural forest land was allocated following two different models of community forest management (CFM): in Katu village 4 the natural forest land was allocated to the entire village community for management, while the natural forest recipients in Kinh village 6 included a common-use household group of merely 14 members (i.e. 34% of the total village population). Both CFM models are based on state law (i.e. introduced model of CFM) and therefore very compatible with the ‘official’ administrative system that is followed by Kinh village 6 and Katu village 4 (NB: traditional forest and villages institutions have deteriorated among the Katu since their migration from the forest to Nam Dong district in 1975).

The natural forest land that was allocated to the research communities appears not to differ much in terms of the quality of forest land, which is referred to as mostly poor. In terms of the total area of allocated natural forest land however, it is striking to see that 60.3 ha of natural forest land was allocated to the entire community of Katu village 4, while a total natural forest area of 204.5 ha was allocated to only 34% of total households (i.e. 14 common-use household group members) in Kinh village 6. With such a large allocated natural forest area, one may wonder why the CPC does not permit households of village 6, who regret not having registered for natural forest land in 2003, to reinforce the current common-use household groups of 14 members. One may equally pose the question if a relatively small area of 60.3 ha of natural forest land is indeed most effectively managed by an entire village community instead of by common-use household groups, especially given the fact that traditional community institutions have deteriorated among the Katu throughout the years.

At first sight there appears to be little difference between the respective CFM models (i.e. community versus household groups) in the research villages. According to both CFM models, all villagers are allowed to use the forest for the purpose of timber logging for housing or furniture (i.e. subsistence use) and NTFP collection, provided permission is asked beforehand to the respective forest institution (e.g. VFMB in Katu village 4; common-use household groups in Kinh village 6) and the CPC. Timber logging for commercial sales (i.e. income generation) however is restricted to official quota and CPC regulations and in Kinh village 6 only the 14 members of the common-use household groups are entitled to benefit from this forest practice. While in Katu village 4 all households are equally entitled to benefit from commercial timber logging, not many households appear to be interested in this particular forest use as commercial timber logging is perceived as time and labour intensive.

The main differences between the respective CFM models are related to benefit sharing mechanisms on the one hand and responsibilities for management and protection on the other. In Kinh village 6 both responsibilities and benefits of natural forest land allocation belong to the 14 members of the two common-use household groups (i.e. forest institutions). Within this relatively small group, transaction costs on achieving consensus about benefit ratios and responsibilities are not likely to be very high. Katu village 4 however presents a context with much higher transaction costs as responsibilities and benefits of natural forest land allocation belong to the entire village community. At present the benefit ratio between individual households and the VFMB of Katu village 4 is not transparent, nor is the benefit distribution between the VFMB and the CPC. Households of Katu village 4 are therefore not likely to invest in the protection and enrichment of the allocated natural forest land, which may well prove detrimental for the forest quality, and could eventually result in the loss of community forest management and use rights altogether.

Thus while at first sight it appears that the CFM model of Katu village 4 is well equipped to generate equal benefits among all households, this is in fact all dependent on whether responsibilities are equally distributed and followed up among the households so that current and future forest benefits are secured. With respect to the CFM model of Kinh village 6, it initially appears that only 34% of households in Kinh village 6 benefit from natural forest land allocation, while the majority of households misses out. This holds however only partially true for benefits derived from commercial timber logging. Although 66% of households is not entitled to benefit from commercial timber harvesting, these very same households are not inflicted with the responsibility of forest management and protection either, which may level out assumed differences in benefits. While the common-use household groups secure and enrich the natural forest land allocated to Kinh village 6, all other households are still allowed to harvest timber for housing and collect NTFPs. The question remains of course to what extent the latter forest uses are actually practiced by the respective households. Next chapter will further analyse the role and relative importance of natural forest practices in the context of other livelihood activities among the Kinh and Katu households of the research villages.

Following chapter will also further elaborate on the role and relative importance of acacia forest plantations in the rural livelihoods of the Kinh and Katu communities. The allocation of plantation forest land to individual households was only briefly touched upon in this chapter. Following plantation forest land allocation all upland fields used for swidden cultivation by the villagers were reclaimed, reclassified as land planned for acacia plantation and redistributed among the households of both research communities. Although both Katu and Kinh households had to change their land use practice from upland cultivation for subsistence to acacia tree growing for income generation, common perception among the respondents favoured acacia plantations. Following chapter will further analyse to what extent acacia forest plantations contribute to a stable household income and especially for whom, as much depends on how households are equipped to turn gained forest endowments into entitlements.

**CHAPTER 6: RURAL LIVELIHOODS IN THE RESEARCH VILLAGES****6.1 Introduction**

The previous chapter focussed on the distribution of different forest endowments among the Katu and Kinh in the research villages, namely natural forest land and plantation forest land. In order to establish the role and relative importance of respective forest endowments in household economies, it is important to find out how capable households are to turn these endowments into entitlements. This can be done by assessing the levels and combinations of livelihood capitals that are available to the Katu and Kinh in respective research villages. Generally speaking, the higher the levels and combinations of livelihood capitals, the better households will be equipped to translate their gained rights over (natural and plantation) forest land into actual forest benefits. Higher levels and combinations of livelihood capitals however also generally mean that more livelihood options and activities become available to households, which may well result into a change of the role (e.g. safety net, regular subsistence use, cash income generation) and relative importance of forest resources in the overall livelihood portfolios (i.e. the combination of livelihood assets and activities) of rural households.

This chapter will present a comparative analysis of the levels and combinations of livelihood capitals (paragraph 6.3) and livelihood activities (paragraph 6.4) that are available to the Katu and Kinh in the research villages, utilising both qualitative (PRA exercises and household interviews) and quantitative (household survey SPSS results) data. This chapter aims to illustrate to what extent (if at all) Katu and Kinh households in the research villages benefit from the allocated (natural and plantation) forest land, and what role and relative importance these benefits (if any) then have within the larger livelihood context of respective rural households. It is important to note that this chapter only includes findings based on between-group comparisons (i.e. Kinh and Katu). Within-group comparisons (i.e. poor, medium-off, better-off) in this particular research context were point of focus of my research colleague Ms van Hoof.

**6.2 Socioeconomic context of Thuong Quang commune**

Before discussing and analysing the livelihood context in the research villages, this section will first briefly highlight the main socioeconomic characteristics of Thuong Quang commune, in which Katu village 4 and Kinh village 6 are located. Thuong Quang is a relatively young commune, which was established shortly after the reunification of Vietnam in 1975. Commune statistics (Thuong Quang CPC, 2003) indicate that Thuong Quang's total population is made up by two different ethnic groups. Approximately 58% of the commune's population belongs to the Katu ethnic minority group and the remaining 42% comprises households of the Kinh ethnic majority group. Respective households are

distributed over 3 homogeneous Katu villages, 3 homogeneous Kinh villages and 1 mixed Katu/Kinh village in the commune. Commune statistics (Thuong Quang CPC, 2003) report a natural population growth of 1.4% per year, and forecast an average increase from 283 households in 2002 (distributed over 7 villages) to 323 households in 2010. Household interviews learnt that a total of 10 Kinh and 20 Katu households (most of which are young and just separated households) established a new village of mixed ethnicity (i.e. village 8) in Thuong Quang commune in 2008.

### **6.2.1 Livelihood practices in Thuong Quang commune**

Commune statistics (Thuong Quang CPC, 2003) report that households in Thuong Quang commune are primarily involved in agricultural activities. Throughout the commune, wet rice cultivation (97.5 ha) is the most important agricultural practice and responsible for a large part of the local food supply. Other important agricultural practices include growing and exploiting rubber trees (288 ha) and home gardening (273 gardens). It is reported that households in the commune increasingly start to see economic benefits of rubber trees, thus rubber plantations are now better cared for. Also home gardening, which is very much in line with socioeconomic characteristics and traditional cultivation practices of local households in Thuong Quang, is reported to be a livelihood activity with high economic benefits. Some reported limitations of home garden practices however include a lack of strategic high economic value trees and a lack of knowledge on modern growing and tending techniques. Because Thuong Quang's good irrigation system, the commune is leading in aquaculture (9.5 ha) in the district of Nam Dong (households raise fresh water fish such as carp and tilapia). In terms of livestock Thuong Quang commune counted a total of 899 animals (i.e. 217 buffalos, 248 cows and 434 pigs) in 2002.

Commune statistics on natural forest practices indicate that most of the natural forest income of households is derived from collecting non-timber forest products (e.g. honey bee, rattan, leaves for production of conical hats). It is reported however, that this type of forest income is often little and rather unstable, especially now that various sources of NTFPs (i.e. rattan, conical leaves) have become more exhausted in the commune's natural forests (Thuong Quang CPC, 2003). At the time of this study no commune statistics were available yet on plantation forest practices in Thuong Quang.

### **6.2.2 Poverty in Thuong Quang commune**

Thuong Quang commune is classified as one of the poorest communes in Nam Dong district. Whereas the average income level on district level is stated at 146,000 VND per person per month, the average household income level in Thuong Quang commune is reported to be only 88,000 VND per person per month (Thuong Quang CPC, 2003). Household economies in the commune are classified by wealth according to following income-based criteria:

- Poor households: average income of 80,000 VND/person/month
- Medium-off households: average income of 80,000-150,000 VND/person/ month
- Better-off households: average income > 150,000 VND/person/month

Looking at the distribution of poverty in Thuong Quang commune, CPC statistics (2003) report of higher poverty rates among Katu villages, with percentages between 30% and 60% of poor households. The Kinh villages in Thuong Quang commune present much smaller percentages of poor households varying between 3% and 11% (see Table 6.1).

Commune reports (Thuong Quang CPC, 2003) attribute the poverty status of households in Thuong Quang commune primarily to households lacking land for cultivation. This is said to be not so much caused by too little available land for households in Thuong Quang commune, but more so related to an unequal distribution of cultivation land among local households. While some households have a lot of land, others are said to have very little to none. Unfortunately no commune statistics were available to create more transparency in this matter (see §6.3.4 for information on the distribution of cultivation land in the research villages). Another explanation for household poverty that is referred to in commune reports (Thuong Quang CPC, 2003) is the lack of household knowledge on modern cultivation practices. Many households are reported to still cultivate land according to habit, paying no attention to high yield species and effective production techniques. Respective households are said to still rely on tradition and nature instead of familiarising themselves with more modern cultivation techniques such as pest control and fertilising activities. Villagers themselves however reported the lack of capital to make investments, the lack of equipment for production purposes and no access to markets as some important causes for their poverty status (Thuong Quang CPC, 2003).

**Table 6.1: Classification of household wealth in Thuong Quang commune (2002)**

Village number	Village name	Number of households			Poor		Medium		Better-off	
		Total	Katu	Kinh	hh	%	hh	%	hh	%
01	Cha Rau	59	49	10	33	55,9	26	44,1	0	0
02	A-Rang	34	34	0	11	32,4	23	67,6	0	0
03	A-Ka	52	52	0	31	59,6	21	40,4	0	0
<b>04</b>	<b>A-Ro</b>	<b>28</b>	<b>28</b>	<b>0</b>	<b>16</b>	<b>57,1</b>	<b>12</b>	<b>42,9</b>	<b>0</b>	<b>0</b>
05	Vinh Giang	34	0	34	4	11,8	30	88,2	0	0
<b>06</b>	<b>Vinh Hung</b>	<b>43</b>	<b>0</b>	<b>43</b>	<b>5</b>	<b>11,6</b>	<b>38</b>	<b>88,4</b>	<b>0</b>	<b>0</b>
07	Vinh My	33	0	33	1	3,0	32	97,0	0	0
	<b>TOTAL</b>	<b>283</b>	<b>163</b>	<b>120</b>	<b>101</b>	<b>35,8</b>	<b>182</b>	<b>64,2</b>	<b>0</b>	<b>0</b>

Source: Thuong Quang CPC, 2003

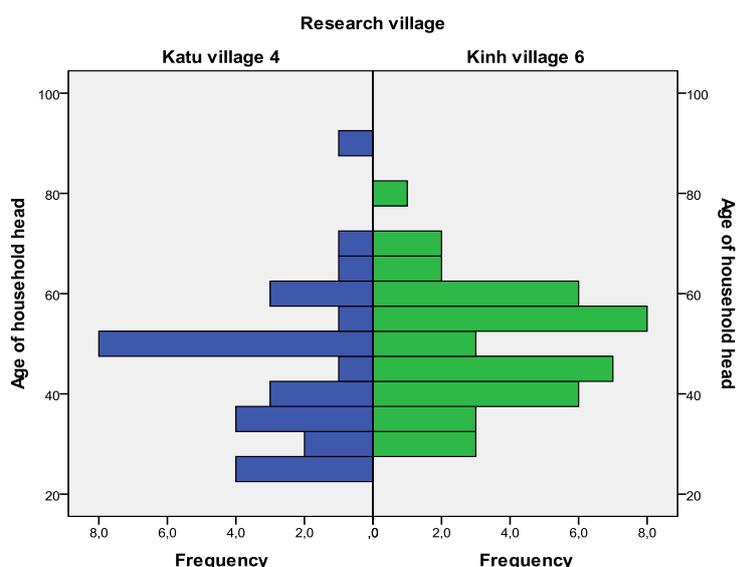
### 6.3 Livelihood capitals in the research villages

This paragraph aims at providing an insight into the main socioeconomic characteristics of the Katu households of village 4 and the Kinh households of village 6. The respective ethnic groups will be compared on the basis of the five livelihood capitals (i.e. human, physical, financial, natural and social capital) derived from the sustainable livelihood framework that was discussed in chapter 2. Access to different levels and combinations of these livelihood capitals have an effect on what livelihood options are available to the respective households and thus influence their (economic) wellbeing. Literature on poverty and ethnic minorities in Vietnam (see chapter 3) and commune statistic on poverty in Thuong Quang (see previous paragraph), suggest that poverty is likely to be highest among ethnic minority groups, which would be the Katu households of village 4 in this study. The assumption may thus be made that respective Katu households have less livelihood capitals available and therefore less choice in livelihood activities than the Kinh households of village 6. To what extent the latter assumption holds true in the research villages will now be further discussed and illustrated (NB: this paragraph only presents a small selection of tables and figures derived from survey data. A more complete overview can be found in Appendix IV).

#### 6.3.1 *Human capital in the research villages*

Knowledge, skills, the capacity to work and access to extension services are some important human capitals for gaining livelihoods in rural areas. Among these, labour capacity is of great importance and often depends on the age and health of household members and of course on the size of a household. When looking at the average (median) household size in the research villages, survey results indicate an amount of 5 household members in both Katu village 4 and Kinh village 6. In terms of the average age of household heads, only a slight difference was found between the research villages with a median age of 48 among the Katu and a median age of 52 among the Kinh household heads. Yet, when looking closer at the age distribution in the research villages (see Figure 6.1), survey results indicate that Katu village 4 has a relatively younger population (i.e. 63.3% of household heads between 25 and 50 years of age and 26.7% between 50 and 65 years of age) than Kinh village 6 (i.e. 46.4% of household heads between 25 and 50 years of age and 46.3% between 50 and 65 years of age). As the average labour age is estimated at 63.8 in the research area (Thuong Quang CPC, 2003), the respective age distribution in the research villages appears to have no bearing yet on the average full-time household labour capacity, which, following the survey results, comprises 2 household members in both Katu village 4 and Kinh village 6.

**Figure 6.1: Age distribution of household heads in the research villages**



Source: Household survey, Huizinga & van Hoof, 2008

Labour efficiency in the research villages may be enhanced by the possession of knowledge and skills. With regard to educational levels in the research villages, survey results show (see Table 6.2) that 77.3% of Katu household heads is literate, and has either completed primary education (36.7%) or secondary education (40%). Among the 82.5% of literate Kinh household heads, a majority of 70% completed primary education, yet only a small 12.5% of Kinh household heads completed secondary education.

**Table 6.2: Highest level of education of household head in the research villages**

Highest level of education of household head	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
Illiterate	7	23,3%	7	17,5%	14	20,0%
Primary education	11	36,7%	28	70,0%	39	55,7%
Secondary education	12	40,0%	5	12,5%	17	24,3%
Total	30	100,0%	40	100,0%	70	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

It is somewhat surprising to find that secondary education has been completed by a much larger proportion of Katu (40%) than Kinh household heads (12.5%). Literature and statistics on poverty and ethnicity would rather suggest findings to be the other way around. From household interviews it became apparent however that the Katu had started learning the Kinh language since their resettlement in Nam Dong district in 1975, and subsequently enrolled in the Kinh educational system. This may explain why the Katu do not appear to lag behind the Kinh in terms of levels of completed education.

Yet, why then a larger proportion of Katu household heads has completed secondary education in comparison to the Kinh, may well be explained by the relatively larger proportion of young household heads that Katu village 4 comprises compared to Kinh village 6.

Access to extension services enables people to improve labour skills that may be applied in livelihood practices in order to increase productivity and yields. Although detailed survey data is missing on this subject, PRA exercises learn that both Kinh and Katu households received support for livelihood diversification and improvement from different state and development organisations, primarily between 2000 and 2008 (e.g. district support for lowland rice cultivation). Households of Katu village 4 specifically report ADB (2006) and VAC (2007) support for integrating home gardening with fish raising and livestock husbandry. Households in Kinh village 6 specifically mention the support from the District Rural Development Program for the investment in rubber plantations in 2002 and forecast that main future village earnings are likely to come from rubber exploitation. To what extent respective support programs, aside from financial, physical and natural input, actually provided specific skill training to the recipient households, did not become clear in this study. The FLA support programs from Helvetas and SNV did provide skill training to the natural forest recipients, which included respectively 30 households in Katu village 4 (entire village community) and 14 households in Kinh village 6 (common use household groups). Training support with regard to acacia tree planting and tree nursing however appears not very encouraging according to survey results, which report that only 2 Katu and 3 Kinh households have received such training.

### **6.3.2 *Physical capital in the research villages***

Physical capital (e.g. roads, markets, transportation) plays an important role in the development of rural economies and can be viewed upon from different levels of scale (e.g. community and household level).

On household level, a widely-used wealth indicator of physical capital includes the type of house a household owns. PRA exercises in both research villages learnt that medium- and better-off households often live in a stone house, while poor households frequently own timber houses. More detailed survey results show that both in Kinh village 6 and Katu village 4 the majority of households lives in a mud or stone house, with percentages of respectively 96.7% (Katu) and 63.2% (Kinh). It is striking to see that 38.2% of households in Kinh village 6 lives in a timber house (which is associated with poor wealth), while this is only the case for a small 3.3% of Katu households. From PRA exercises however it became apparent that Katu households had received government support (Program 134) for building permanent (i.e. stone/cement) houses in 2004. It was said that 27 Katu households benefited of this program with gifts varying from 6 million VND to 12 million VND depending on the state of the house (the poorer the house, the higher the gift). Households in Kinh village 6 did not benefit from Program 134, yet Kinh households report they did receive government

support (Program 135) for building a fixed bridge in 2001. In addition, a provincial investment was made in small roads and irrigation canals in 2002 and 2003. Also the Hunger Eradication and Poverty Reduction (HEPR) program provided support to Kinh village 6 in terms of (re)building irrigation canals and a small bridge in 2005. From the latter it appears that Katu households primarily received support in building up physical capital on household level, while the mostly infrastructural support provided to Kinh village 6 is primarily aimed at building up physical capital on village level. Where irrigation canals will enhance the productivity of rice cultivation in Kinh village 6, fixed bridges and paved roads will increase access to markets and reduce transaction costs on transportation. In this respect, Kinh village 6 appears to have a comparative advantage over Katu village 4, which seems to lack latter mentioned physical assets.

Linking back to physical capital on household level, household assets for communication and transportation are also useful wealth indicators. Survey results show that the majority of Kinh households have a television (90.2%), a bicycle (82.9%) and a motorbike (73.2%). Also the majority of Katu households, albeit with lower percentages, owns a television (83.3%) and a bicycle (60%), yet only 30% of Katu households owns a motorbike. As possession of a motorbike decreases distances to markets, the relatively large 70% of Katu households that lacks this asset faces disadvantages in this respect.

PRA exercises in the research villages learn that buffalos are widely used for the preparation of lowland cultivation fields and for the transportation of wood (primarily for housing) and firewood from the natural forest. Buffalos may therefore also be perceived as a form of physical capital that helps to enhance household labour productivity. Survey results indicate (see Table 6.3) that only 50% of Katu households owns a buffalo (40% owns one and 10% own two to four buffalos) compared to a larger 80% of Kinh households (46.3% owns one, 26.8% two and 7.3% owns three or four buffalos).

**Table 6.3: Number of buffalos owned by households in the research villages**

Number of buffalos owned by the household	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
0	15	50,0%	8	19,5%	23	32,4%
1	12	40,0%	19	46,3%	31	43,7%
2	1	3,3%	11	26,8%	12	16,9%
3	1	3,3%	2	4,9%	3	4,2%
4	1	3,3%	1	2,4%	2	2,8%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

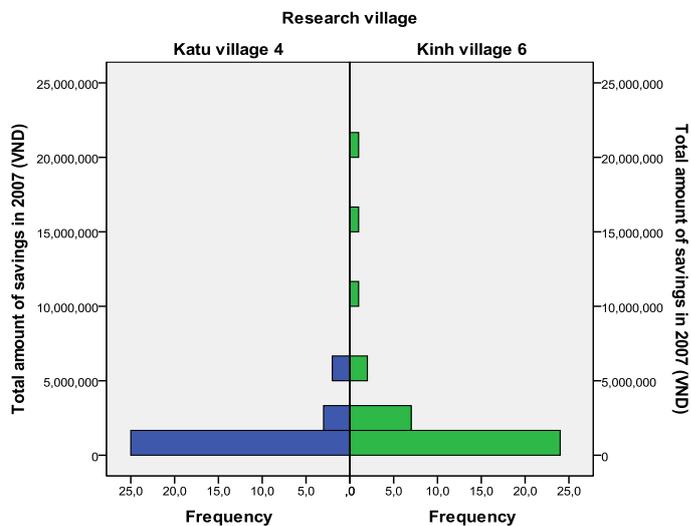
6.3.3 *Financial capital in the research villages*

Financial capital in the research villages is assessed by the amount of households savings in 2007, the number of livestock (i.e. easily convertible into financial capital) and household borrowings in 2008.

In terms of household savings in 2007, PRA exercises in both Kinh village 6 en Katu village 4 learnt that on average, better-off households are able to save 15-20 million VND per year, medium-off households 5-10 million VND per year and poor households less than 5 million VND per year. More detailed survey results however indicate that the majority of both Kinh (64%) and Katu (70%) households was not able to accumulate any household savings in 2007. The small proportion of households that was able to save money in 2007 shows an average (mean) annual saving of respectively 2.3 million VND among the Katu (ranging from 300 thousand to 5 million VND) and 5.7 million VND among the Kinh (ranging from 1.5 million to 20 million VND). Although the Kinh (36%) and Katu (30%) show similar percentages of households that were able to save money in 2007, the average amounts of respective annual savings appears to be over twice as high for the Kinh in comparison to Katu households (see Figure 6.2).

From household interviews it became apparent that many Kinh and Katu households invest in livestock (primarily cows) as a way of accumulating savings, which may function as household safety nets (households estimate market prices at 3-5 million VND per cow). Survey results indicate that 50% Katu households owns a cow (30% of which owns one cow and 16.7% two) compared to a slightly larger 61% Kinh households (29.3% of which owns one cow and 24.4% owns two). NB: Household investments in livestock are not included in the calculation of the monetary households savings in 2007 that are shown below in Figure 6.2.

**Figure 6.2: Distribution of household savings in 2007 (VND)**



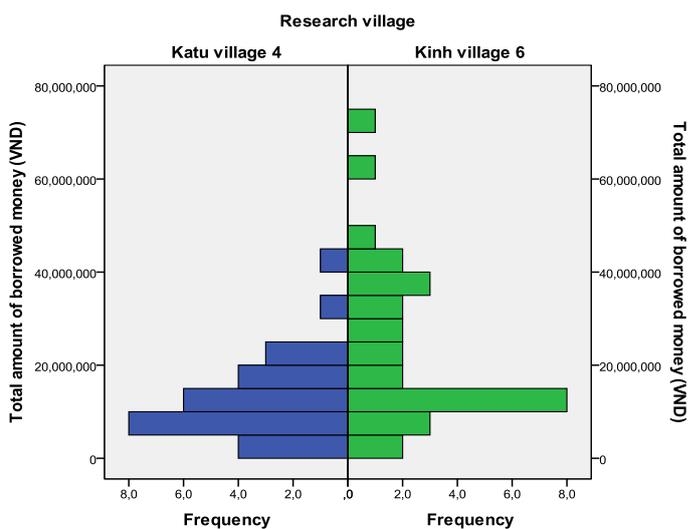
Source: Household survey, Huizinga & van Hoof, 2008

Survey results indicate that 90% of Katu households is borrowing money in 2008 compared to a slightly lower 75.6% Kinh households (see Figure 6.3). Average amounts of borrowings among respective households vary from approximately 12 million VND for the Katu (ranging from 2 million to 40 million VND) to approximately 23 million VND for the Kinh (ranging from 3 million to 70 million VND).

Most loans were taken out from the Agribank and the Social Policy Bank for the prime purpose of investing in husbandry (reported by respectively 63% Katu and 71% Kinh respondents). Investment in rubber plantations was given as an additional reason for borrowing money by 19.4% of Kinh households, yet none of the Katu households explicitly reported to borrow money for this purpose. Borrowing money for the purpose of building a house (14.8%) and for production purposes (11.1%) were the main additional reasons reported by Katu households in village 4. Only 1 Kinh household reported to have borrowed money for planting acacia trees, yet none of the Katu households mentioned this purpose.

In Kinh village 6 about 25% of households reported not to be borrowing money. Survey findings show that respective households responded “not to need a loan as they have sufficient private capital for livelihood investment themselves”. The 10% of non-borrowing households in Katu village 4 however stated “they could not get a loan because of poor health and thus lack the capacity to pay back”. None of the Katu nor Kinh respondents mentioned “lacking the possession of a Red Book” as a reason for not borrowing money. NB: households normally possess more than one Red Book specified according to the type of land (e.g. residential land, agricultural land, forest land, etc.) that they may use as collateral for bank loans (see also §6.3.4).

**Figure 6.3: Distribution of household borrowings in 2008 (VND)**



Source: Household survey, Huizinga & van Hoof, 2008

6.3.4 *Natural capital in the research villages*

In rural livelihoods natural capital is very important for household development and a lack of cultivation land is often mentioned as an important cause of poverty (e.g. Thuong Quang CPC, 2003). Table 6.4 (see next page) provides insight into the natural assets of Katu households in village 4 and Kinh households in village 6. Based on findings from PRA exercises on livelihood assets and activities in the research villages, the table specifies natural capital into (i) land for acacia plantations, (ii) land for rubber plantations, (iii) fields for lowland rice cultivation, (iv) fields for subsidiary crop cultivation, (v) land for home gardening and (vi) land for fish ponds. The table further states the percentages of landless and landowning households per land type, together with the average size (mean) of land among the landowning households in the research villages. (NB: as the main characteristics of allocated natural forest land was already discussed in previous chapter, it is therefore not again included in this respective section on natural capital).

**Table 6.4: Natural assets of Katu and Kinh households in the research villages**

	KATU VILLAGE 4 n=30					KINH VILLAGE 6 n=41				
LAND SPECIFICATION	LAND HOLDING					LAND HOLDING				
	No		Yes			No		Yes		
	hh	%	hh	%	Land plot (mean)	hh	%	hh	%	Land plot (mean)
Acacia plantation (ha)	10	33%	20	67%	1.8 ha	15	37%	26	63%	1.4 ha
Rubber plantation (ha)	6	20%	24	80%	2.0 ha	9	22%	32	78%	2.1 ha
Lowland rice fields (m <sup>2</sup> )	1	3%	29	97%	1250 m <sup>2</sup>	3	7%	38	93%	1500 m <sup>2</sup>
Subsidiary crop fields (m <sup>2</sup> )	3	10%	27	90%	850 m <sup>2</sup>	14	34%	27	66%	1150 m <sup>2</sup>
Home garden (m <sup>2</sup> )	1	3%	29	97%	1100 m <sup>2</sup>	0	0%	41	100%	1500 m <sup>2</sup>
Fish ponds (m <sup>2</sup> )	16	55%	14	45%	570 m <sup>2</sup>	14	34%	27	66%	738 m <sup>2</sup>

Source: Household survey, Huizinga & van Hoof, 2008

Survey data indicate that the vast majority of both Katu (97%) and Kinh (93%) households own fields for the cultivation of lowland rice with average land holdings of respectively 1250m<sup>2</sup> (ranging from 250m<sup>2</sup> to 3000m<sup>2</sup>) in Katu village 4 and 1500 m<sup>2</sup> (ranging from 400m<sup>2</sup> to 4000m<sup>2</sup>) in Kinh

village 6. Fields for the cultivation of subsidiary crops are owned by 90% of Katu households with average plot sizes of 850m<sup>2</sup> (ranging from 250m<sup>2</sup> to 3500m<sup>2</sup>). Only 66% of Kinh households possesses respective cultivation land, yet Kinh households own relatively larger plots of on average 1150m<sup>2</sup> (ranging from 100m<sup>2</sup> to 5000m<sup>2</sup>) in comparison to the Katu. With regard to land for home gardening, again the vast majority of Kinh and Katu (≈98%) possess such land with average land holdings of respectively 1100m<sup>2</sup> (ranging from 250m<sup>2</sup> to 2500m<sup>2</sup>) in Katu village 4 and 1500m<sup>2</sup> (ranging from 300m<sup>2</sup> to 5000m<sup>2</sup>) in Kinh village 6. Table 6.4 further indicates that about 80% of both Kinh and Katu households possess land for rubber plantations with an average land area of around 2 hectares in both research villages (plot sizes range from 0.6 ha to 5.0 ha in Katu village 4 and from 1.0 ha to 5.5 ha in Kinh village 6). Land for acacia plantations however, is owned by a relatively smaller proportion of households in both research villages, with percentages of respectively 67% of Katu households and 63% of Kinh households. It is striking to see that the average plot for acacia plantations is larger among the Katu households (1.8 ha) than among the Kinh households (1.4 ha). An explanation may be found in the fact that in Kinh village 6 the plots for acacia plantation range from 0.5 ha to 3 ha, with a majority of households having plots between 1 ha and 2 ha, while in Katu village 4 plot sizes vary from as little as 0.1 ha to as much as 5 ha, yet with a majority of households owning plots of 1 ha to 2.5 ha (see Appendix IV). Land for fish raising is owned by only a small number of Katu households (45%) in village 4, yet a larger proportion of 66% Kinh households possesses land for respective purpose. Survey results show that the average land plots for fish raising are relatively larger in Kinh village 6 (738m<sup>2</sup>) than in Katu village 4 (570m<sup>2</sup>).

Aside from having access to various kinds of natural capital, ownership rights (RBCs) of respective land holdings provide households with even more livelihood security and opportunities for livelihood development. Survey results indicate that all of the landowning households in the research villages either already have RBCs or are in the process of receiving RBCs for (part of) their respective land holding. RBCs are issued to households for residential land (i.e. land for home garden and land for fish ponds); for agricultural land (i.e. lowland rice fields, subsidiary cultivation fields and rubber plantations) and for forest land (i.e. natural forest and acacia plantation forest). As both Kinh and Katu households in the research villages are involved in a variety of livelihood practices, which will be further discussed in the next paragraph, households normally possess more than one kind of RBC. RBCs offer households, besides tenure security, opportunities to invest in their land in order to increase land productivity (RBCs may function as collateral for bank loans and credit schemes). In previous section on financial capital however, it became apparent that only a small proportion of Kinh (19.4%) and Katu (11.1%) households in the research villages is actually borrowing money for the very purpose of any kind of land production. Instead, the majority of Katu (63%) and Kinh (71%) households reported of an investment in husbandry.

### 6.3.5 *Social capital in the research villages*

Although no concrete data on levels of social capital (e.g. levels of community action, relationships of trust and reciprocity, community organisations) could be derived from the household survey, PRA exercises, household interviews and secondary information sources were able to provide some insights on the concept of social capital in Katu village 4 and Kinh village 6.

From household interviews and PRA exercises it became apparent that both research villages have rather high levels of social capital in terms of household relationships of trust and reciprocity. Both Kinh and Katu respondents gave examples about helping each other out with exchanging labour on the basis of friendship (“I help you if you help me”) during the most busy cultivation times (e.g. preparing land, planting, weeding, harvesting) throughout the year. Kinh and Katu households also report of good social relationships between the respective research villages which, translates into the exchange of knowledge and experience in cultivation practices. Katu households of village 4 historically came from the upland forest areas in Nam Dong, and therefore had much experience in upland cultivation. Kinh households of village 6 on the other hand originally came from the coastal districts of Phu Loc and Phu Vang and had only gained experience in lowland cultivation. From PRA exercises and interviews it also became apparent that both Katu village 4 and Kinh village 6 comprise various village unions (e.g. Women’s Union, Farmer’s Union, Veteran Union). These unions are in compliance with the official village administrative system and most Katu and Kinh respondents claim to participate in one of these social networks.

When closing in on levels and types of social capital that are linked to natural forest land allocation in the research villages, following findings became apparent throughout the research. First, the FLA programs of Helvetas and SNV stimulated social relations between participating parties at district (i.e. FPU), commune (i.e. CPC) and village level (i.e. local households), which may have been of influence on the level of trust and understanding between the research villages and Thuong Quang commune. Second, respective FLA programs aimed at generating high participation rates among Kinh and Katu households throughout the entire FLA process. Households were able to participate from the stage of forest land-use planning to the stage of actual allocation of forest land and defining rules and regulations on forest protection and benefits. When zooming in on levels of community action and decision power in the research villages, the Katu households in village 4 appear to have gained more social capital as the natural forest land was allocated for the entire community to manage, while in Kinh village 6 only 14 households received rights and responsibilities over the allocated natural forest land. However, CFM as a form of social capital in Katu village 4 (CFM model 1 following Duong Viet Tinh et al., 2007) can enable yet also constrain the Katu households in village development. The latter seems to be prevailing in Katu village 4 at this stage as much of the allocated natural forest area is still degraded. Main CFM focus is therefore directed at protection and enrichment activities. Short-term economic production benefits (e.g. timber extraction) are limited for the villagers and benefit

sharing mechanisms are not yet transparent and equally arranged (see also chapter 5, more specifically §5.3.1). Third, both SNV and Helvetas encouraged women in the research villages to participate in the FLA programs in order to stimulate equal gender relations. SNV (Hoang Lan Anh & Claudia Doets, 2004) reports that the participation of women in FLA field exercises was less than their participation in the FLA village meetings, yet this was to be expected since historically it are only the male household members that go into the forest. Nevertheless, the FLA program of SNV contributed to women becoming more aware of their rights and responsibilities in natural forest land management. Helvetas (2006) adds that while in practice it will most likely remain the male household members that go into the forest, women in Katu village 4 may well become more involved in forest-related work in terms of implementing and monitoring the village CFM plan. According to SNV (Hoang Lan Anh & Claudia Doets, 2004), FLA already enhances the position of women in the research villages simply because of the fact that the names of both the female and male household head are stated in the RBC. This allows women to borrow from the bank, make investments and secure land and income, also in case the male household head should pass away. Finally SNV (Hoang Lan Anh & Claudia Doets, 2004) reports that also commune officials have become more aware of gender issues during the implementation of the FLA programs, which may prove beneficial for future development programs and policies in the research villages.

With respect to plantation forest land allocation, social capital in the research villages relates mostly to available networks of buyers and suppliers, which appear to be similar for both the Katu and Kinh at this stage. Household interviews report that acacia seedlings are supplied by a private company run by Kinh people from Khe Tre (i.e. district centre) who come and visit the respective villages to sell their tree seedlings. It appears that there is only one district supplier, which leaves the Kinh and Katu households with little to no bargaining power for negotiating competitive prices and good quality acacia seedlings. Households appear to have a bit more leverage in the process of selling acacia produce, as they report that several potential buyers already came to the respective villages to introduce themselves and negotiate terms of sale.

#### **6.4 Livelihood activities in the research villages**

After discussing and comparing the range and levels of livelihood capitals among the Katu and Kinh households in respective research villages, this paragraph will continue with a comparative analysis of rural livelihood activities. Village-level PRA exercises provided a listing of a wide range of pursued livelihood activities among the Katu and Kinh, which can be broadly categorised into (i) agricultural practices, (ii) forest practices (i.e. natural forest practices and plantation forest practices) and (iii) non-natural resource-based livelihood activities. NB: as household participation in the latter mentioned category was only found among 5 better-off Kinh households in village 6 (i.e. 2 shop keepers and 3 mason labourers), the non-natural resource-based livelihood activities will not be further

elaborated on. This paragraph thus confines the comparative analysis merely to the agricultural and forest activities among the Katu and Kinh and aims to provide insight into how and to what extent these practices contribute to livelihood security and/or livelihood development in the research villages.

#### ***6.4.1 Agricultural practices in the research villages***

The Katu and Kinh households in the research villages listed a number of different agricultural practices which provide them with subsistence and/or cash income. These can be categorised into (i) the cultivation of field crops (i.e. lowland rice, subsidiary crops and cassava), (ii) the cultivation of tree crops (i.e. rubber plantation and home garden sometimes with fish pond), and (iii) involvement in other agricultural activities (i.e. livestock husbandry and hired labour).

##### Cultivation of field crops

In both research villages all but maybe one or two households are involved in the cultivation of lowland rice. Both Katu and Kinh households report this livelihood activity as crucial for subsistence income. No rice means no food for the villagers. Only a few of the better-off households in the villages report to sometimes sell surplus rice for additional income. This is however more the exception than the rule. Both Kinh and Katu households in the research villages describe lowland rice cultivation as both labour and capital intensive.

The cultivation of subsidiary crops (e.g. groundnuts, corn, beans, sweet potatoes, pumpkin, water melon, cucumber) is slightly less capital intensive according to Kinh and Katu households in the research villages, yet equal in the required labour input when compared to lowland rice cultivation. Both the Kinh and Katu score subsidiary crop cultivation as a very important source for regular subsistence use. Subsidiary crops provide them with daily foods that are needed for a well-balanced nutritional diet. Respectively 97% Katu and 85% Kinh households report to cultivate subsidiary crops in the research villages, however only 90% Katu and 66% Kinh households report to actually possess land plots for respective cultivation purpose. These differences in percentages may well be explained by the fact that households are legally allowed to intercrop subsidiary foods with rubber and acacia trees.

A third field crop includes cassava, which is cultivated by about 80% of households in both research villages. Both Kinh and Katu households score cassava as very important for subsistence income. Households widely use cassava produce as animal food for their livestock. In addition, households indicate that cassava serves as an important buffer in times when output from other crops is little to none. Furthermore Katu and Kinh households report that cassava cultivation is not very capital intensive, nor labour intensive, and is often intercropped with rubber and/or acacia trees.

Cultivation of tree crops

All households in the research villages (apart from 1 Katu household), report to exploit land for home garden practices (e.g. fruit trees, ‘areca’ betel nut palm trees). Both Kinh and Katu households state to sell the majority of home garden produce on the market for cash income. Only a small proportion of the output serves for household consumption in order to balance out the daily household diet. In both research villages some home gardens are supplemented with fish ponds. This is the case for respectively 45% Katu households and 63% Kinh households. Respective households report that fish raising primarily has a cultural function in their livelihoods. Fish is an important source of food during the wedding season. As most households lack the money to buy fish on the local market, they choose to they raise fish themselves instead.

About 80% of households in both research villages report to exploit land for rubber tree plantations. Both Kinh and Katu households perceive this as an important livelihood activity for generating cash income. Rubber tree growing is reported to be labour (e.g. land clearing, planting, weeding, fertilising, tending) and capital intensive (e.g. high investment costs in buying tree seedlings and hiring labourers). Both Kinh and Katu households state they have received support from the Rural Development District Program for the establishment of rubber plantations in the form of access to favourable loans of the Social Policy Bank. Households estimate the start-up costs of rubber plantations at 20 million VND per hectare. This is perceived as rather high by local households, especially since large profits of wood produce can only be reaped after full completion of the tree growth cycle of approximately 7 years. Rubber trees however do produce a by-product in the form of rubber sap. This can be tapped from the trees around 9 months a year and may provide households with short-term profits during the 7-year growth cycle. According to Hoang Thi Thanh Nga (2008), 1 hectare of rubber trees may produce up to 3.3 ton of liquid latex per year, which could subsequently be sold at prices of 10,000 VND/litre. Latter activity could potentially amount to a household cash income of around 33 million VND per hectare per year. Research findings are unfortunately not able to provide insight into how many Kinh and Katu households actually already have generated income from rubber tapping and if so, how much cash income it then included. Both Kinh and Katu households however perceive the long-term profits of rubber wood produce as the main benefit of rubber plantations. At the time of this study no information was available yet on cash benefits of rubber tree harvesting since both Katu and Kinh households in the research villages were expecting their first harvest at the end of 2008.

Other agricultural activities

Also animal husbandry is listed as an important livelihood activity in the rural livelihoods of the Katu and Kinh households in the research villages. Survey results show that approximately 83% Katu

and 90% Kinh households raise livestock (e.g. cows, buffalos, pigs) and they report to own an average of 3.2 (Katu) and 3.4 animals (Kinh). Both Kinh and Katu households perceive livestock as an important form of physical savings; livestock may easily be converted into cash capital in times of need (i.e. safety net). In addition, households in the research villages raise livestock for manure production which is commonly used as a natural fertiliser for crop growing. Furthermore, Katu and Kinh households generate cash income from renting out buffalos to other households in the village (20,000 VND/day/buffalo) for the purposes of land preparation (e.g. ploughing) and transport (e.g. wood, seedlings).

Hired labour is a final listed agricultural livelihood activity in the research villages. Respectively 50% Katu and 45% Kinh households generate periodical cash income from working as a hired labourer. Hired labourers mostly help out with soil preparation, planting, tending and weeding activities on both rubber and acacia tree plantations in surrounding villages. Households report hired labour as a seasonal activity with peak times during the weeding periods in February, May, June and December. Both Katu and Kinh households state to mostly undertake paid hired labour activities outside the village community, as within the village boundaries respective labour is more often provided on the basis of friendship (i.e. exchange labour). Both Katu and Kinh households in the research villages estimate cash income from hired labour activities around 60,000 VND per day.

#### ***6.4.2 Forest practices in the research villages***

In addition to agricultural livelihood practices, also forest practices (i.e. natural forest and plantation forest) are part of the livelihood portfolios of the Katu and Kinh households in respective research villages. During village-level PRA exercises, participating households listed the collection of firewood, the collection of NTFPs and acacia tree growing as the most common forest-related livelihood activities. Neither the Kinh nor Katu participants listed timber logging or management and protection duties in the natural forest as important livelihood activities. This could imply that either not many households are involved in the latter activities, thus not reap benefits, thus not mention it, or that current benefits are so small that these appear insignificant to respective households. Where previous chapter discussed the characteristics of the gained forest endowments by the Kinh and the Katu following FLA, this section further illustrates to what extent respective households actually draw upon these forest resources for household subsistence and/or cash income.

##### Timber logging

Survey results indicate that 47% Katu and 39% Kinh households were involved in timber logging before the allocation of natural forest land. Respective Katu households report they only harvested timber for housing and furniture (thus for subsistence purposes) during these times, while respective

Kinh households were, besides the latter, also involved in commercial tree logging. Respectively 77% Katu and 34% Kinh households report they are currently (thus after FLA) actively involved in the management, protection and exploitation of natural forest land. From survey results it appears that in 2007 no household income was earned from commercial tree logging in Katu village 4. In Kinh village 6 however, 4 households report receiving cash earnings from commercial tree logging in 2007 of respectively 2 million, 5 million, 7 million and 20 million VND (see Appendix IV).

#### NTFP collection

Both Kinh and Katu households in the research villages listed NTFP collection as a common forest-use practice. Survey results show that approximately 80% Katu and 56% Kinh households used to collect NTFPs from the natural forest before the time of allocation. At present however (thus after FLA), a slightly smaller 70% of Katu households still collects NTFPs, in contrast to a drastically declined 10% of Kinh households.

Nowadays, not only the number of households involved in respective forest-use practices appears to differ, also the range of collected NTFPs seems to vary between the Katu and Kinh. Katu households report to mainly collect conical leaves, rattan, bee honey, bamboo shoots and white bananas for both household consumption and local sale, while Kinh households report to primarily collect bamboo shoots only for the latter purpose. As bamboo shoots can only be collected during 4 months of the year, the overall contribution of these forest products to household income is relatively small among the Kinh households. Similar findings are shown for the Katu who report that NTFPs mainly function as an additional source of income to pay for electricity and/or medical bills. Respective households thus not depend on these forest products for their income, yet only collect NTFPs when they have free time. Other remarks made among the Katu refer to the low market prices of NTFPs and the fact that it involves a seasonal activity (apart from rattan and bamboo which can be collected all year around), and thus offers little potential for stable household income generation. In addition, Katu households report a limited NTFP supply in the allocated natural forest of village 4, which is said to be in contrast with an abundance of NTFPs that is available in the non-allocated forest area under the management of the Watershed Management Board. Although Katu households are permitted to collect NTFPs in the latter mentioned forest, transaction costs appear to be too high since the respective forest is located rather far away (1 day walk) from the village.

Survey results indicate that only 1 Kinh household derived cash income from the collection of NTFPs in 2007, which comprises a total amount of 600,000 VND. In Katu village 4 however, 13 households reported cash earnings in 2007 from collecting NTFPs in the natural forest with amounts varying between 100,000 VND to 5 million VND (see Appendix IV).

Firewood collection

Approximately 90% of both Kinh and Katu households in the research villages report to collect firewood from the natural forest for regular subsistence purposes. As no gas is available in the research villages, firewood is an essential household resource for cooking. Households report that firewood from the natural forest is generally collected once a month; respective households rent a buffalo (20,000 VND/day) for transporting the firewood from the forest to the village. Katu households add that fallen trees, tree branches and bamboo (as a last resort) are collected as firewood in both the allocated and non-allocated forest (with granted permission). A Kinh woman reports to mainly collect firewood from her rubber plantation, yet research findings suggest that this is rather the exception than the rule for the majority of Kinh households.

Acacia tree growing

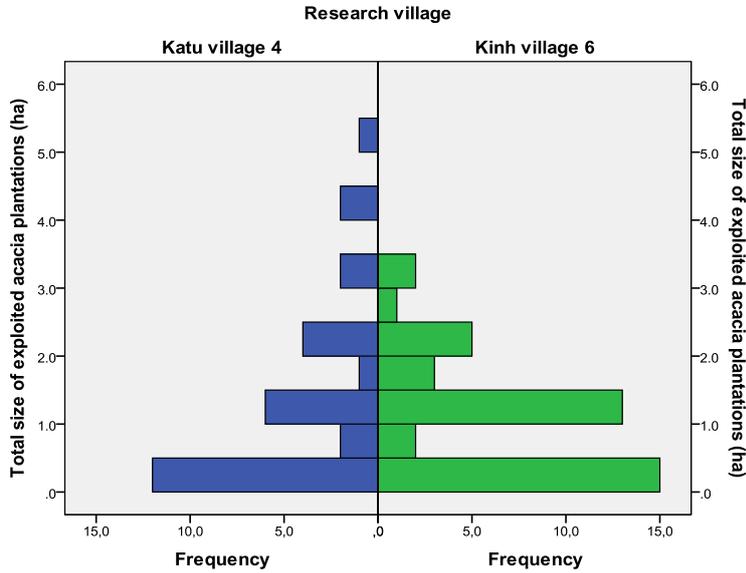
In the research villages respectively 20 Katu households (67%) and 26 Kinh households (63%) have plantation forest land for the purpose of acacia growing. While in Katu village 4 the plot sizes vary from 0.1 ha to 5.0 ha, in Kinh village 6 the smallest plot of acacia land is 0.5 ha and the largest 3.0 ha. The majority of households in both research villages however owns an average plot of 1.0 ha to 2.0 ha (see Figure 6.4).

Survey results indicate that the majority of households with plantation forest land in the research villages has already planted acacia trees on their land, including respectively 16 Katu and 20 Kinh households. Within this group, a total of 8 Katu and 9 Kinh households already received an RBC for their land, yet the remaining households (8 Katu and 11 Kinh households) report to still await this document because they only just recently planted acacia trees on their land (planting acacia trees on the allocated land is a prerequisite for receiving an RBC).

Survey results further report that only very few of the 36 acacia growing households in the research villages received any kind of external support for the establishment of acacia plantations. Only 1 Katu household received acacia seedlings, 1 Kinh household received fertiliser, and another Kinh household reports credit support of 10 million VND for the initial investment in the acacia plantation. Also training about tree planting and nursing was only received by a small number of respectively 3 Katu and 2 Kinh households in the research villages. The vast majority of the 36 acacia growing Katu and Kinh households thus established the tree plantations with their own money. According to ACIAR figures (Bueren van, 2004) the average investment costs for traditional acacia plantations in Vietnam are estimated at 8 million VND/ha. Survey results however show much smaller household investments in acacia plantations in the research villages, with average amounts of respectively 2.6 million VND/ha (ranging from 100,000 to 7 million VND/ha) among the Katu, and average initial investments of 4.6 million VND/ha (ranging from 1 to 10 million VND/ha) among the Kinh households (see

Appendix IV). These figures suggest that the Katu and Kinh households in the research villages are not yet able to maximise their investments and profits of acacia plantations to the fullest potential.

**Figure 6.4: Distribution of exploited land for acacia plantations (ha)**



Source: Household survey, Huizinga & van Hoof, 2008

The 16 Katu and 20 Kinh acacia growing households in the research villages planted trees on their plantation land between 2003 and 2007. Respective households reported an acacia tree growth cycle of approximately 7 years (similar to rubber trees), therefore none of the acacia growing households had harvested yet from the acacia plantation at the time of this study. Although no data was available on past household cash earnings from acacia, an estimation of future earnings can be made based on ACIAR figures (Bueren van, 2004), which indicate an average nominal gross revenue of 25 million VND/ha for traditional acacia species in Vietnam. Following the latter, total future earnings from acacia plantations may range from 2.5 million to 125 million VND (with plot sizes ranging from 0.1 to 5.0 ha) among the Katu and from 12.5 million to 75 million VND (with plot sizes ranging from 0.5 to 3.0 ha) among the Kinh households in the research villages. Whether these economic benefits can actually be fully reaped by respective households at the time of harvest (between 2010 and 2014) is dependent on, among others, household investments, quality of tree seedlings, technical knowledge and skills on effective plantation management, and market opportunities for acacia produce. It was however beyond the scope of this study to investigate such future scenarios in more detail.

Household interviews and PRA exercises learn that both Kinh and Katu households perceive acacia growing as a capital and labour intensive livelihood activity. As previous section already illustrated, start-up investments are substantial (although somewhat smaller than required investments in rubber plantations), and return to investments are long-term. Besides the latter, also the maintenance of acacia plantations requires the necessary labour (e.g. planting, tending, weeding, harvesting) and capital (e.g.

fertiliser, equipment, hired labour, transport) input. As a cash income generating activity, acacia growing thus only appears feasible for households with sufficient cash reserves to fund the 7-year growth cycle until harvest time when returns to investments can be collected. However, acacia plantations may provide households with short-term benefits when intercropping practices are applied, thus households grow acacia trees in combination with agricultural crops (e.g. cassava, corn, upland rice) or domesticated NTFPs. Some Kinh households report to intercrop acacia with native timber tree species and non-timber tree species (e.g. cinnamon trees). No detailed information on acacia intercropping practices in the research villages became however available from this research. Another potential source of short-term (subsistence) income from acacia plantations includes firewood, yet only one or two households in the research villages mentioned this as a benefit of the established acacia plantations.

Survey results indicate that respectively 4 Katu and 6 Kinh households in the research villages do possess land for acacia, but have not planted trees yet. Respective households report that they are unable to finance the required start-up capital from their own household savings, and that they are hesitant to borrow money, since investments for acacia growing are high and return to investments long-term (approximately 7 years). As the planting of acacia trees is a prerequisite for obtaining an RBC, latter group of households may well fail to secure their plantation forest land for future ownership and benefits.

It thus appears that at present a total of 14 Katu (47%) and 21 Kinh households (49%) in the research villages are not able to derive (future) benefits from acacia growing because they either lack the capital to invest in the land (4 Katu and 6 Kinh households) or lack the land for acacia planting entirely (10 Katu and 15 Kinh households). Survey results indicate that within the latter group (households without land for acacia) respectively 6 Katu households classify themselves as poor, 3 as medium-off and 1 as better-off, while only 2 Kinh households within this group classify themselves as poor, 1 as better-off and a majority of 12 households perceive themselves as medium-off (see Appendix IV). The latter illustrates that the group of households who lack land for acacia in the research villages are not per definition all poor. Medium-off and better-off households in this group may well have voluntarily chosen to primarily allocate household labour and capital to other agricultural practices, such as rubber growing or lowland rice cultivation, and thus may have made a conscious decision on not to invest in acacia growing. Poor households then appear to have been left most vulnerable following the allocation of plantation forest as these households had to give up their upland fields without getting anything in return. However, previous chapter already illustrated that upland cultivation was no longer the rule in both research villages after the introduction of lowland rice and subsidiary crop cultivation, which indicates that the loss of land did not very likely take away viable sources of subsistence income for respective households. Better yet, the establishment of acacia plantations may have very well decreased the vulnerability of the poor through the indirect environmental benefits they receive. Acacia plantations are reported to stabilise steep sloping land

(thus reduces erosion), improve infertile soil and maintain water levels in soil, all of which positively contribute to the protection of agricultural crops in times of heavy rains and floods (reported in 1999, 2006 and 2007 by the villagers) and to levels of irrigation water that is needed for lowland rice cultivation (Bueren van, 2004). In addition, the overall establishment of (smallholder) acacia plantations contributes to seasonal employment opportunities for households in terms of hired labour activities (which is listed as an important livelihood activity among the Katu and Kinh in the research villages).

#### **6.4.3 Gender division of livelihood activities in the research villages**

Village-level PRA exercises learn that there is a rather clear gender division of livelihood activities in the Katu and Kinh research villages. Whereas women are mostly involved in work related to food crops for household subsistence, men primarily work on cash crops for market sales. Parallel to this, women are reported to generally work nearby the household home, yet men more often work the fields further away from home.

Typical livelihood activities for women that are reported in the research villages include the cultivation of cassava and subsidiary crops, home gardening and raising livestock. Lowland rice cultivation is reported to be a shared livelihood activity by both men (majority) and women (minority). The same applies for firewood collection, yet this activity represents more equal participation shares between both genders. Where men collect firewood from the natural forest, women do so from the (acacia and rubber) plantations nearby their home.

Typical male livelihood activities that are reported by both Katu and Kinh households include acacia and rubber growing, fish raising and hired labour on (rubber and acacia) plantations. Also all natural forest practices (thus timber harvesting, firewood and NTFP collection) are carried out by male household members in the research villages.

### **6.5 Conclusion**

The rural livelihoods of the Katu in village 4 and the Kinh in village 6 are primarily built upon agricultural and forest-use practices, which makes them highly dependent on access to and use of available natural resources. Previous chapter already illustrated the context of natural forest land in the research villages; 60.3 ha of natural forest land was allocated to the entire community of Katu village 4 and a total of 204.5 ha natural forest was allocated to a common-use group of 14 households (34%) in Kinh village 6. Research findings show that, besides having access to the natural forest, both Kinh and Katu households are presented with a rather diversified portfolio of other natural assets. The vast majority of households in the research villages owns fields for lowland rice cultivation ( $\approx 95\%$ ) and for home gardening ( $\approx 98\%$ ). A slightly lower figure of about 80% both Kinh and Katu households owns

land for rubber plantations and approximately 65% of total Kinh and Katu households owns land for acacia plantations. Fields for subsidiary crop cultivation are owned by 90% Katu and 66% Kinh households, and fish ponds are exploited by 45% Katu households in village 4 and 66% of the Kinh in village 6.

Although the Katu and Kinh have access to a similar range of natural assets, cross-group analysis indicates that Kinh households in village 6 generally own larger plots of land than Katu households in village 4. Among the Kinh, average fields for lowland rice cultivation are 1.2 times as large, land for home gardens 1.4 times and fields for subsidiary crops 1.3 times as large. Average landholdings for acacia plantations are however larger among the Katu, with average plot sizes of 1.8 ha (ranging between 0.1 and 5.0 ha), while the Kinh have average plots of 1.4 ha (ranging between 0.5 and 3.0 ha). The total size of allocated plantation forest land on village level however, does not differ that much between the Katu and Kinh (i.e. 36.1 ha in Katu village 4; 37.0 ha in Kinh village 6), which indicates that acacia plantations are more equally distributed in Kinh village 6. Landholdings for rubber plantations are similar in size among the Katu and Kinh, with average plots of 2.0 ha in the research villages.

Respective natural assets provide the Katu and Kinh households with a wide range of livelihood activities, which can broadly be divided into agricultural practices (i.e. cultivation of field crops, cultivation of tree crops and other agricultural activities) and forest-use practices (i.e. natural forest and plantation forest). Agricultural practices represent the larger part of livelihood activities among both ethnic groups. Field crops (i.e. lowland rice, subsidiary crops and cassava) provide Katu and Kinh households in the research villages with essential sources of subsistence income. Whereas lowland rice and subsidiary crops are crucial in obtaining sustainable levels of food security and diversity, cassava crops are an important source of animal food for household livestock and in addition function as a household buffer in times when output from staple crops is little to none. Agricultural tree crops (i.e. home gardens and rubber plantations) provide Katu and Kinh households primarily with sources of cash income. As the average size of home gardens ( $\approx 1500\text{m}^2$ ) and rubber plantations ( $\approx 2.0$  ha) largely differs, household earnings from the first will be much smaller than earnings derived from the latter. Home gardening is however less labour and capital intensive in comparison to the holding of rubber plantations (with average start-up costs of 20 million VND/ha), making it a feasible income generating livelihood activity for a vast majority ( $\approx 98\%$ ) of both Katu and Kinh households. Survey results were unfortunately not able to indicate average annual households cash earnings from home garden practices, nor from holding rubber plantations (e.g. rubber sap and wood). Other agricultural practices (i.e. hired labour and livestock husbandry) in the livelihoods of the Kinh and Katu provide households with sources of subsistence income (i.e. manure production; land preparation; transportation), cash income and savings. Cash income can be earned from renting out buffalos for labour activities and may provide Katu and Kinh households with earnings of 20,000 VND per day. Livestock also functions as an important and popular source of physical savings (cows may be sold for 3 to 5 million

VND) in the research villages. A total of 20 Kinh and 17 Katu households report to have actually borrowed money in 2008 for the purpose of purchasing livestock. When comparing the Katu and Kinh on the potential of livestock in developing their livelihoods, Katu households appear to be disadvantaged as about 50% of Katu households in village 4 does not own any cow or buffalo, while this is only the case for respectively 20% (no buffalo) and 39% (no cow) of the Kinh in village 6. A final agricultural cash income generating activity in the research villages is hired labour. Hired labour activities are seasonal (February, May, June, December), yet during the season these activities may provide both Katu and Kinh households with cash earnings of 60,000 VND per day. Respectively 50% Katu and 45% Kinh households are involved in hired labour activities that are primarily carried out at rubber and/or acacia plantations outside the research villages.

In addition to agricultural activities, also forest-use practices (i.e. natural forest and plantation forest) are part of the livelihood portfolios of the Kinh and Katu, albeit in much smaller proportions. With regard to natural forest practices, approximately 90% of both Kinh and Katu households collect firewood from the natural forest which is essential for subsistence use (cooking). NTFPs (e.g. rattan, bee honey, conical leaves, white bananas) are collected by 70% of Katu households and used for both consumption and sale, yet only 10% of Kinh households collect NTFPs (only bamboo shoots) from the natural forest only for the purpose of local sale. Cash earnings in the research villages from NTFP collection were limited to 1 Kinh household who reported earnings of 600,000 VND in 2007, and 13 Katu households ( $\approx 43\%$ ) who reported cash earnings between 100,000 and 5 million VND in 2007. None of the respective households (Kinh nor Katu) are dependent on NTFPs for regular household income; households only collect forest products when they have free time and use it as a source of additional income. Households refer to low market prices and the seasonality of NTFP collection as important indicators for the limited potential of NTFPs in earning a stable household income. Most household cash income from the allocated natural forest odds to be earned from commercial tree logging activities, to which all Katu households in village 4 and 14 households (i.e. common-use household group) in Kinh village 6 are entitled. In 2007 however, commercial tree logging has not yet provided the Katu households with any cash earnings and only 4 of the 14 entitled Kinh households report cash earnings of respectively 2 million, 5 million, 7 million and 20 million VND. At this stage, the overall time and effort spent on natural forest management, protection and development activities by respective Katu and Kinh households seems to be (disproportionally) higher than the actual cash income earned from forest exploitation activities.

At first sight, the allocated forest land for acacia plantations seems to offer households better perspectives on livelihood development. This appears to apply at least to 16 Katu (53%) and 20 Kinh (49%) households in the research villages that own acacia plots of on average 1.0 to 2.0 ha. Between 2003 and 2007 all respective households planted acacia trees on their land, which is a prerequisite for receiving an RBC and thus a necessity for securing plantation forest land for future household income. Within this group of 36 acacia growing households, a total of 8 Katu and 9 Kinh households already

received an RBC for their land, yet 8 Katu and 11 Kinh households only just recently planted acacia trees on their land and are now awaiting their RBC. The vast majority of the latter 36 households established their acacia plantations entirely with their own capital. Research findings show that average investments made by Kinh households (4.6 million VND/ha) are about 1.8 times as high as those made by the Katu (2.6 million VND/ha). Nevertheless, average investments of both ethnic groups hardly reach the suggested investment amount of 8 million VND/ha (Bueren van, 2004) for viable traditional acacia plantations. At this stage, the output from the first acacia harvest is not likely to be very high for the 36 acacia plantation landholders, primarily due to these small investments. Investments for the following tree crop however may be more in line with the suggested standard, as households may choose to reinvest the profit from the first acacia harvest in their plantation and/or use their RBC to access credit to cover investment costs. Yet, most Katu and Kinh households perceive acacia plantations as labour and capital intensive with rather long-term returns on investments (7 years), and therefore feel reluctant to invest large amounts of private capital in acacia, let alone take out credits for this purpose. Financing acacia plantations solely from household savings (in order to minimise risks) seems not a very viable option either in the research villages given the average annual savings in 2007 among 30% Katu households were 2.3 million VND/hh and 5.7 million VND/hh among 36% of Kinh households. The question thus remains to what extent the 16 Katu (53%) and 20 Kinh (49%) households that secured forest land for acacia plantations, will actually be capable of making their plantations profitable in the longer run. Unfortunately, research results did not capture existing intercropping practices on plantation forest land of the local households (thus combining growing acacia trees with agricultural crops or domesticated NTFPs). Intercropping would seem an achievable and attractive land-use strategy for the Kinh and Katu, as it permits households to secure plantation forest land (RBC), while making minimum investments in acacia which is perceived as high risk, yet cultivating part of the secured land with low risk land-use practices for gaining stable subsistence and cash income. The latter would imply that the 14 Katu (47%) and 21 Kinh (51%) households that were not able to secure plantation forest land in the research villages are left disadvantaged, as this group had to give up their upland fields following FLA without getting anything in return. While this may seem the case for the poor households (6 Katu and 1 Kinh) that failed to secure plantation forest land in the research villages, the medium-off (3 Katu and 12 Kinh) and better-off (1 Katu and 1 Kinh) households in this group may well have made a conscious decision on not to invest in acacia (and thus give up their land), yet allocate their labour and capital to other practices instead. Finally it is important to note that acacia plantations provide essential and urgent environmental protection (stabilisation of steep sloping and often eroded fields) to the rural livelihoods of the Kinh and Katu. In addition acacia plantations contribute to seasonal employment opportunities in the form of hired labour activities, which is listed as an important livelihood activity among both the Kinh and Katu.

At the beginning of this chapter, it was hypothesised that the Katu households of village 4 would have less levels and combinations of livelihood capitals available, thus have less choice in pursuing livelihood activities and therefore attribute different roles and levels of importance to forest-use and management practices in comparison to the Kinh households of village 6. The comparative analysis of livelihood capitals and activities among the Katu and Kinh however shows a rather high degree of homogeneity between the two ethnic groups. Both groups have access to a diversified portfolio of livelihood assets and activities, and show similar percentages of households drawing upon these for sustaining and/or improving their livelihoods. Generally speaking, agricultural practices seem to have a more prominent and promising place in the rural livelihood portfolios of the Kinh and Katu than (natural and plantation) forest-use practices. However, the FLA policy is still rather young (in the research villages natural forest land was allocated between 2003-2007 and plantation forest land between 2004-2005), this stage may be viewed upon as a time of transition and things may well change in the near future. An overall synthesis about the current impacts of FLA on the rural livelihoods of the Kinh in village 6 and the Katu in village 4 is presented in the next (concluding) chapter, together with future expectations and/or recommendations in terms of livelihood development, policy-making and further research.

<b>CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS</b>
---

## 7.1 Introduction

The Vietnamese forest land allocation policy of 1993 aims at simultaneously achieving national forest cover rehabilitation and rural poverty reduction by devolving forest rights to the local level (Socialist Republic of Vietnam, 2007). Barren forest land (i.e. previously used as swidden cultivation land) is allocated to individual households for reforestation purposes (i.e. acacia plantations). Natural forest areas (i.e. previously managed by SFEs) are allocated to either groups of households or entire village communities for management and protection purposes. In accordance with the FLA policy, forest recipients gain legal ownership rights over their land for a period of 50 years (i.e. Red Book Certificate). This is proposed to increase household tenure security; RBCs entitle households to exchange, transfer, lease, mortgage, and pass on their allocated forest land for inheritance. In addition, households may use RBCs as collateral for credit schemes or bank loans and so create more opportunities to develop their livelihoods.

Much of the allocated natural forest land in Vietnam is however highly degraded. Only limited valuable resource reserves seem to be left for local households to draw upon for their livelihoods (e.g. Poffenberger et al., 1998; Arnold, 2001; Nguyen, Nguyen & Kuester, 2005; Mahanty et al., 2006; Webb, 2008). This raises the question to what extent and in what time frame natural forest land allocation may actually offer fruitful opportunities for local livelihood development. A similar question may be posed when looking at the potential of acacia plantations for local livelihood development. So far acacia forest plantations have only shown limited commercial potential in Vietnam often due to reasons such as: lack of information on high quality/high yield species, inappropriate land-use techniques and limited access to adequate transportation and competitive markets (e.g. Poffenberger, 1998; Clement & Amezaga, 2008; Ngo Tri Dung & Webb, 2008).

Besides the latter, further questions may be asked about whether or not the benefits (if any) of forest land allocation are in fact equally available to all forest-using people (i.e. heterogeneous group: ethnicity, wealth, geographical location, etc.). The poorest of the poor are assumed to benefit least, which leaves ethnic minorities most disadvantaged, as these households are disproportionately poor compared to the Kinh majority in Vietnam (e.g. van de Walle & Gunewardena, 2001; Huynh Tu Ba, 2002; Persoon, 2004; Sunderlin & Huynh Thu Ba, 2005; Baulch et al., 2007).

In order to create transparency in how different ethnic groups shape their forest-related livelihoods and how the forest land allocation policy may impact their livelihoods, a case study was conducted in two villages in Nam Dong district, Central Vietnam, posing following central research question:

*What is the impact of forest land allocation on the rural livelihoods of the Katu households (i.e. ethnic minority) of village 4 'A-Ro' and the Kinh households (i.e. ethnic majority) of village 6 'Vinh Hung' in Thuong Quang commune, Nam Dong district, Central Vietnam?*

The main conclusions that came forward from this case study are presented in following paragraphs and followed by recommendations for further research.

## **7.2 Conclusions on natural forest land allocation in the research villages**

In the research commune Thuong Quang approximately 92% of total natural forest area was under the management of Khe Tre Nam Dong State Forest Enterprise until 2002. Local households were only involved in forest management on an ad-hoc basis through individual forest protection contracts that could earn them up to 40,000 VND/ha/year (Thuong Quang CPC, 2003). This changed from 2003 onwards, when natural forest land in Thuong Quang commune was allocated to the local level for management and protection. During the implementation of natural forest land allocation, the Katu households of village 4 were supported by Helvetas through the ETSP program (2003 - 2007), and the Kinh households of village 6 were facilitated by SNV through the LUPLA program (2003 - 2005).

### **7.2.1 Allocated natural forest land: similar in quality, different in quantity**

The allocated natural forest land that was allocated to Kinh village 6 and Katu village 4 may largely be described as of poor quality (cf. chapter 5). This seems not very surprising as most of the total forest area in Thuong Quang commune is highly degraded and located on steep slopes (Webb, 2008). Katu village 4 was allocated 2 forest plots (i.e. plot A Đăn of 31.7 ha and plot Khe Găng of 24.6 ha) for management, protection and enrichment purposes and in addition 1 plot of 4.0 ha bare land for the establishment of a commercial acacia plantation (i.e. economic benefits). Kinh village 6 was also allocated 2 forest plots (89.1 ha and 115.4 ha) for management and protection purposes, plus 1 plot of 18 ha bare land to plant acacia on for commercial purposes. Although the quality of the allocated natural forest land (i.e. primarily poor, degraded, sloping forest land) appears to be similar in both research villages, it is striking to see that Kinh village 6 was allocated a total area of natural forest land (204.5 ha) that is over three times as large as the natural forest area that Katu village 4 was allocated (60.3 ha). This seems even more striking when having the knowledge that the 60.3 ha natural forest area is to be managed by the entire community of Katu village 4 (i.e. 30 households) while the much larger 204.5 ha is the responsibility of only 2 common-use household groups (i.e. 14 households) in Kinh village 6. Research findings were unfortunately not able to provide an explanation for this substantial difference in allocated natural forest land in the research villages.

### 7.2.2 *Natural forest management models: village community versus household groups*

As explained in chapter 5, the natural forest management models in Katu village 4 (i.e. village community) and Kinh village 6 (i.e. 2 common-use household groups) fall within a broader CFM framework in Vietnam (Duong Viet Tinh et al, 2007). These CFM models are what Huynh Thu Ba (2005) refers to as ‘introduced models of community forest management’ (i.e. based on state law), thus very compatible with the ‘official’ administrative system that is followed by both Kinh village 6 and Katu village 4. Officially, local households are entitled to have a say in the chosen forest management model, yet both the Kinh and Katu could not recall being included in this decision-making process. Current CFM models thus appear to have been chosen by the state and the development agencies (i.e. Helvetas and SNV) that supported the implementation of FLA in the research villages.

We may assume that the choice for the CFM model in Katu village 4 was very much prompted by the fact that this involves an ethnic minority village. Until today, ethnic minority groups are often still perceived as homogeneous communities with close community ties and indigenous management systems in place that serve the benefits of the entire community. From this perspective, village community forest management would seem a compatible and satisfactory choice for Katu village 4. However, as Agrawal and Gibson (1999) point out, nowadays many indigenous institutions have become eroded by external influences such as migration, population pressure, commercialisation and modernisation. Indigenous pillars for sustainable forest management may therefore no longer be present, which seems to be the case in Katu village 4. In 1975 the Katu migrated from the forest to their current place of residence in Nam Dong district, living side by side with the Kinh in neighbouring villages ever since. As illustrated in chapter 6, nowadays the Katu households of village 4 appear not that different from the Kinh in villages 6 in terms of livelihood capitals and activities. The Katu may have well reached such levels of integration with the Kinh majority (cf. Baulch et al., 2007) that natural forest management by common-use household groups would actually prove to be more adequate than forest management by the entire village community. Although households of Katu village 4 did not explicitly respond to be either happy or unhappy with their CFM model (one may wonder however to what extent households have a proper understanding of the implications of each of these CFM models), research findings illustrate some important limitations of this model in Katu village 4 (cf. Arnold, 2001; Mahanty et al., 2006) and its potential for accelerating livelihood development (see §7.2.3).

Research results suggest that the choice for the CFM model in Kinh village 6 has been made more participatory in the sense that all households that wanted to register for natural forest management were allowed to do so. Thus technically, if all households in Kinh village 6 had in fact registered, village community management would have very likely been the chosen CFM model. In reality however, the allocated natural forest area of Kinh village 6 is managed by 2 common-use household

groups (i.e. 14 members), which represent 34% of the total village population. A total of 27 Kinh households (i.e. 66%) is thus not involved in natural forest management. Research findings indicate that 10 households (i.e. 25%) consciously and without regret did not register for natural forest land allocation because they lack labour capacity (e.g. old age, poor health). The remaining 17 households (i.e. 41%) however express their regrets for not having registered and claim they were not fully aware of the implications (both benefits and costs) of natural forest land allocation. In hindsight they respond that the poor quality status of the forest was leading in their decision not to register; they expected the costs of investment to be much higher than the benefits of natural forest land allocation, at least in the short-term. Such reasoning seems fairly logic and regrets only started to surface when households learnt that they were to lose their upland fields for swidden cultivation located outside the area of village 6. With the establishment of village 8 (i.e. population increase due to natural growth in Thuong Quang commune), this swidden land was now located within the demarcation lines of village 8 and therefore also allocated to respective village. Besides the latter, households claim they were not aware of the 18 ha bare land inside the allocated natural forest meant for planting acacia trees. Respective households thus feel like they are missing out on the economic benefits that may be derived from this land. Some households express their wish for another opportunity to register for natural forest land allocation in order to start claiming their perceived missed benefits. This however appears not to be possible as the CPC of Thuong Quang has no additional natural forest land available for allocation. Respective households suggested joining the current common-use household groups of village 6, yet this suggestion was dismissed by the CPC. Unfortunately research findings were not able to illustrate the grounds for this dismissal (e.g. was it a purely CPC motivated decision or did the current common-use household groups not approve?). It would be interesting to find out the motivation(s) behind latter decision, and also see whether the current situation in terms of natural forest land allocation may become ground for ‘conflict’ in Kinh village 6 in the near future.

### ***7.2.3 A closer look at the two CFM models: household responsibilities and benefits***

The extent to which the CFM models in Katu village 4 and Kinh village 6 may contribute to sustainable forest management and livelihood development, is closely related to the distribution of responsibilities and benefits of natural forest management in the research villages (cf. chapter 5).

As mentioned in previous paragraph, in Kinh village 6 the responsibilities for managing and protecting the allocated natural forest land belong to the two common-use household groups (i.e. forest institutions). Household group 1 (i.e. 6 members) is responsible for the 89.1 ha forest plot and household group 2 (i.e. 8 members) for the plot of 115.4 ha. Both household groups are equally responsible for the 18 ha acacia plantation inside the allocated natural forest. Since these very households make all the investments in the natural forest land (e.g. management, protection, enrichment, acacia growing), they are therefore the ones that are entitled to the accompanying

## CONCLUSIONS AND RECOMMENDATIONS

economic benefits. Research results show initial cash earnings from commercial timber logging made by 4 Kinh households in the year 2007, including amounts of 2 million VND, 5 million VND, 7 million VND and 20 million VND. No information on household earnings from the 18 ha acacia forest plantation was available yet at the time of this study, as initial investments were not made until 2008. We can however make a hypothetical calculation on the potential net revenue of the latter, using ACIAR data (Bueren van, 2004) on traditional specie acacia plantations in Vietnam (i.e. average investment costs = 8 million VND/ha and average gross revenues = 25 million VND/ha). After a full acacia tree growth cycle of 7 years, 18 ha acacia forest plantation may provide a potential total net revenue of 306 million VND (i.e. gross revenue of 450 million VND minus average investment costs of 144 million VND). When we break this further down, we see that the members of the common-use household groups could potentially earn about 3 million VND per household per year from a 7 year cycle of acacia growing (i.e. 306 million VND divided by 14 households divided by 7 years). Potential economic benefits from both commercial timber logging and acacia growing seem thus rather promising, especially given the fact that the average income of medium-off households in Thuong Quang commune is about 1 million VND to 2 million VND per year (Thuong Quang CPC, 2003). Obviously it remains to be seen if in fact all 14 members of the common-use household groups will be able to generate cash earnings by commercial timber logging in the natural forest and whether such earnings then may be sustained on a regular basis for a longer period of time. With regard to future earnings from the 18 ha acacia plantation, much will depend on the actual size of investments, the quality and species of acacia seedlings, the quality of management activities and the availability of outlet markets. Research shows that a majority of 66% Kinh households is thus not entitled to latter mentioned benefits, yet they are not inflicted with responsibilities of management and protection of the allocated natural forest either. These households are however still allowed to the allocated natural forest for the logging of timber for housing and furniture (i.e. according to subsistence needs) and for the collection of firewood and NTFPs. Households are obliged to ask permission to the common-use household groups beforehand though. Research findings show that a majority of Kinh households (about 90%) indeed makes use of the natural forest to collect firewood for regular subsistence use (e.g. cooking, heating). Only a small 10% of Kinh households however appears to be involved in the collection of NTFPs (i.e. primarily bamboo shoots for commercial sales). This seemingly weakened role of NTFPs as 'gap fillers' and 'safety nets' among the Kinh in village 6 (e.g. Ros-Tonen, 2000; Angelsen & Wunder, 2003; Sunderlin et al., 2005) may well be explained by the fact that households have access to a rather diversified livelihood portfolio. Paragraph 6.3.3 illustrated that both cash and physical savings fulfil a safety-net function in the livelihoods of the Kinh. About 36% of Kinh households claims to be capable of accumulating cash savings of on average 5.7 million VND per year, ranging from 1.5 million VND to 20 million VND in 2007. About 61% Kinh households reports to accumulate physical savings by investing in livestock (primarily cows). NB: 1 cow is equivalent to about 3-5 million VND; a household owns on average 1 to 2 cows.

## CONCLUSIONS AND RECOMMENDATIONS

In Katu village 4 both responsibilities and benefits from the allocated natural forest land belong to the entire village community, with the VFMB in place as the main governing village forest institution. All Katu households are allowed to use the forest for the collection of firewood and NTFPs, for the logging of timber for housing and furniture (i.e. subsistence use) and for commercial timber logging (i.e. income generation). Research findings show that about 90% Katu households, similar to the Kinh in village 6, collect firewood in the natural forest for regular subsistence use. Yet in contrast to the Kinh, a majority of 70% Katu households still draw on the natural forest to collect NTFPs (e.g. conical leaves, rattan, bee honey, bamboo shoots, white bananas) for both household consumption and local sale. Although a total of 13 Katu households report cash earnings from NTFPs in 2007, varying from 100,000 VND to 5 million VND, the overall contribution of NTFPs to household income appears small. Due to fluctuating market prices, a limited resource base and the seasonality of many NTFPs (apart from rattan and bamboo which may be collected all year around), so far NTFPs only seem to qualify as a source of additional household income in the livelihoods of the Katu. With regard to commercial timber logging in the allocated natural forest, all Katu households in village 4 are equally entitled to perform such activities, yet not many households appear to have an interest in this as they largely refer to commercial timber logging as time and labour intensive. In Katu village 4 commercial timber exploitation is limited to the forest plot A Đăn (31.7 ha), an area which is difficult to access (stone sloping road), thus logging and transportation costs are high. In addition, after exploitation households are obliged to plant back new trees, which is said to be time consuming and not always fruitful due to lack of knowledge on adequate enrichment techniques. Furthermore, households state that the official application and approval procedure (i.e. permission from village community and approval from VFMB and CPC) for commercial timber logging is complex and time consuming. Taking these 'constraints' into consideration and adding to this that according to the 5-year CFM plan of village 4, no more than 10 valuable trees may be logged per year (which needs to be done within that given year otherwise villagers lose their logging rights to the FPU), economic benefits from commercial tree logging appear limited for the Katu. Research results seem to confirm the latter as not any of the Katu households in village 4 report of cash earnings from commercial timber logging in the natural forest in 2007. The potential economic benefits of the 4 ha bare land for acacia inside the allocated natural forest may not appear very promising either for the Katu households. The production area is rather small (especially in comparison to the 18 ha of Kinh village 6) and therefore benefits will be small. The little benefits that may be provided are then to be equally distributed over all 30 households in Katu village 4. A hypothetical calculation based on ACIAR figures (Bueren van, 2004) would estimate a total net revenue of 68 million VND for 4 ha of traditional specie acacia trees (i.e. gross revenue of 100 million VND minus average investment costs of 32 million VND) after a full growth cycle of 7 years. This would then break down into monetary benefits of approximately 300,000 VND per household per year (i.e. 68 million VND divided by 30 households divided by 7 years), which is 10 times less compared to the potential net revenues of 3 million VND per household per

year for the members of the common-use household groups in Kinh village 6. Compared to the average income (i.e. 1-2 million VND/year) of medium-off households in Thuong Quang commune (Thuong Quang CPC, 2003), the amount of 300,000 VND per year appears of little potential for providing Katu households with a stable household income. Nevertheless, it just may offer perspectives in terms of household savings which in turn could increase household security, household investments and household production. Respective revenues from the acacia forest plantation could however also be allocated to the (forest) village fund in order to pay for household services related to forest and/or village management and so benefit the entire village community. This leads to a final potential source of economic benefits that the Katu may (indirectly) derive from their allocated natural forest land, namely income from confiscating illegally exploited forest products. According to village protection regulations, committing forest violations are penalised with monetary sanctions, while detecting such violations are rewarded with compensation fees (i.e. normally based on the current market value of the confiscated forest product). Monetary rewards are divided between the detecting and/or confiscating household(s) and the VFMB. From research results it became evident that monetary rewards for confiscating illegally harvested NTFPs are distributed according following benefit ratio: 30% for the confiscator and 70% for the VFMB. Benefit ratios related to other protection and management duties appear not yet clear in Katu village 4, not on village level between households and the VFMB, nor on commune/district level between the VFMB and the CPC/FPU. At present this lack of knowledge and clarity on how to share benefits from the natural forest, together with a household perception that benefits are limited to begin with, seems to lead to a disinterest among the Katu to manage and protect their allocated land sustainably. According to official CFM regulations, 2 protection teams of each 4 village members should patrol the allocated natural forest once every 15 days. Household interviews however learn that only 7 Katu households patrolled the allocated natural forest as often as once a month up to 2007, yet now seized their patrolling activities altogether since they are not getting paid for their efforts. The forest protection teams of Katu village 4 discussed this matter with the Forest Protection Unit (FPU), yet were referred back to the VFMB as the party that should provide monetary compensation for patrolling activities. The VFMB however replied not to have enough budget to provide villagers with payment for patrolling activities, leaving this matter currently unresolved. Latter situation seems to present a chicken and egg debate posing the question who in fact is responsible for a solvent village forest fund to begin with. Ideally, monetary benefits from the allocated natural forest are to provide the village forest fund with sufficient cash flows to pay household forest activities from. The current quality and size of the allocated natural forest land of Katu village 4 however presents such a context that the latter is just not feasible at this stage. One may wonder to what extent and in what circumstances it would be reasonable and effective to temporarily provide external (government) support to the village forest fund by means of regular and/or fixed contributions. This could be regarded as a 'kick-start' in the process of the village forest fund

becoming self-sufficient and so help further catalyse both sustainable forest management and livelihood development in Katu village 4.

### 7.3 Conclusions on plantation forest land allocation in the research villages

Both in Kinh village 6 and Katu village 4 the allocation of plantation forest land took place between 2004 and 2005. All households had to give up their upland fields which they used for swidden cultivation to the FPU, who then reclassified the land as plantation forest land for the purpose of establishing acacia plantations. The CPC further facilitated the redistribution of the plantation forest land among the individual households in the research villages. In contrast to the areas of allocated natural forest land (see §7.3.1), Katu village 4 and Kinh village 6 received similar total areas of plantation forest land from the CPC for individual household distribution (i.e. 36.1 ha in Katu village 4 and 37.9 ha in Kinh village 6). In Katu village 4 plantation forest land was allocated to households based on prior use of the land. Households that had less than or exactly 1 ha of swidden land were advised by the FPU to secure this land by planting acacia on the land and registering for an official RBC. All swidden land that exceeded the 1 ha was reclaimed by the FPU and thereafter equally redistributed among households in the village with relatively more labour and capital available for the establishment of acacia plantations. In Kinh village 6 plantation forest land was redistributed among the villagers based on the outcomes of a lottery system that decided which household would receive what plot for acacia plantation (NB: this has mostly to do with the location of the allocated plots; size is based on the available labour capacity in a household that is needed to establish and maintain an acacia plantation).

#### 7.3.1 Differentiated outcomes of land security: no land, land but no trees, land with trees

Not all Katu and Kinh households in the research villages own a plot of plantation forest land; research findings report of 10 Katu (33%) and 15 Kinh (37%) households without acacia land. While a first assumption may be that this very group of households failed to secure such land because they are poor and thus lack enough labour capacity and capital to be eligible for plantation forest land allocation, research findings show differently. Survey results indicate that 1 Katu household without acacia land classified itself as better-off, 3 as medium-off and 6 Katu households classified themselves as poor. In Kinh village 6 also 1 household classified itself as better-off, a majority of 12 households perceive themselves as medium-off and 2 Kinh households without acacia land classified themselves as poor. Latter shows that lacking land for acacia is not per definition related to being poor in the research villages. For the medium- and better-off households it may well have been a conscious decision not to invest in an acacia plantation but instead allocate household labour and capital to other agricultural practices, such as rubber growing or lowland rice cultivation. Both Katu and Kinh

households in the research villages have access to a wide variety of livelihood activities (cf. chapter 6), which makes it possible for them to make such livelihood choices. Nevertheless, whether households consciously decided not to apply for acacia land or ‘involuntarily’ ended up without acacia land, fact remains that all households had to give up their swidden land and received nothing in return. Fortunately this loss of swidden land appears not to have resulted in the loss of vital sources of subsistence income. Research findings learn that since the early 1990s both the Kinh and Katu had started to cultivate lowland rice and subsidiary crops, which from then on became their main sources of subsistence income. At the time of plantation forest land allocation, upland cultivation had already changed into a role of providing households with safety nets (e.g. corn, upland rice, cassava) in times of food shortage. Also, primarily between 2000 and 2008, both research villages received much external support for livelihood diversification (e.g. lowland rice cultivation, integration of home garden with fish raising and husbandry; see §6.3.1). Such a context enables the Kinh and Katu households without acacia land to more easily substitute household benefits that were previously derived from swidden cultivation by other livelihood practices and so secure their livelihoods.

In both research villages a total of 20 Katu (67%) and 26 Kinh (63%) households received plantation forest land for the purpose of acacia growing. Survey results indicate however that within this group a total of 4 Katu and 6 Kinh households have not yet planted trees on their allocated land. As the planting of acacia trees is a prerequisite for obtaining ownership rights (RBC), these households may very well fail to secure their land and benefits in the near future. The main obstacle for planting acacia trees that is reported by respective households, is a lack of sufficient savings to privately fund this venture. Borrowing money for establishing an acacia plantation seems no favourable option among the households; they perceive acacia growing as a risky livelihood activity with high initial investment costs combined with long-term returns (approximately 7 years). NB: survey results indicate that only a small proportion of Kinh (19.4%) and Katu (11.1%) households borrows money to invest land production, yet a majority of Katu (63%) and Kinh (71%) households in the research villages borrows money to invest in husbandry. None of the Katu nor Kinh households mentioned anything in terms of not being eligible to borrow money for acacia trees due lack of an RBC for their acacia land. In this context it is important to note that RBCs are not only issued to households for forest land (i.e. natural forest and acacia plantation forest) but also for agricultural land (i.e. lowland rice fields, subsidiary cultivation fields and rubber plantations) and for residential land (i.e. land for home garden and land for fish ponds). The Kinh and Katu households in the research villages are thus likely to possess more than just one kind of RBC, all of which may be used as collateral for bank loans or credit schemes.

From the 20 Katu (67%) and 26 Kinh (63%) households in the research villages that received plantation forest land, a majority of 16 Katu and 20 Kinh households has in fact planted acacia trees on their allocated land. Between 2003 and 2007, all respective households established the acacia tree plantations with their own capital, apart from 1 Katu household that received support in the form of

acacia seedlings and 1 Kinh household that received credit support of 10 million VND. Research data shows that additional support for the establishment of acacia plantations was scarce in the research villages; only 1 Kinh household reports of receiving fertiliser, and respectively 3 Katu and 2 Kinh households report of receiving training about tree planting and nursing. A total of 8 Katu and 9 Kinh households already have an RBC for their acacia plantation, and thus fully secured their land. The remaining 8 Katu and 11 Kinh households report to still await an RBC because they just recently planted acacia trees on their land, and as mentioned before, this is a prerequisite for receiving an RBC. Yet, it is expected that in the very near future also these households will officially have secured their acacia forest plantation land in the research villages.

### ***7.3.2 Household acacia forest plantations: the actual and potential economic benefits***

Approximately half the population of both Katu village 4 and Kinh village 6 has thus managed to establish an acacia plantation between 2003 and 2007 and with this secure their plantation land. At the time of this study none of these household had harvested their acacia trees yet, therefore no data is available on real household cash earnings from this newly introduced livelihood activity. By again using the ACIAR data (Bueren van, 2004) on traditional specie acacia plantations in Vietnam (i.e. average investment costs = 8 million VND/ha and average gross revenues = 25 million VND/ha), it was however possible to make a hypothetical calculation of potential future household earnings from acacia plantations in the research villages. In Katu village 4 household plots of acacia land vary from as small as 0.1 ha to as large as 5.0 ha. Based on these sizes the first plot may provide Katu households with a net revenue of 1.7 million VND (i.e. gross revenue of 2.5 million VND minus average investment costs of 800,000 VND), while the latter may provide a net revenue of as much as 85 million VND (i.e. gross revenue of 125 million VND minus average investment costs of 40 million VND). These numbers are estimations of net revenues Katu household may receive after a full acacia tree growth cycle of 7 years. On a yearly basis these numbers would then break down into household net revenues of 140,000 VND up to 7 million VND. In Kinh village 6 the plots for acacia plantations range from 0.5 ha to 3.0 ha. This first plot size may provide Kinh households with a net revenue of 8.5 million VND (i.e. gross revenue of 12.5 million VND minus average investment costs of 4 million VND), yet the latter may provide a net revenue of as much as 54 million VND (i.e. gross revenue of 75 million VND minus average investment costs of 21 million VND) after a full growth cycle of 7 years. On an annual basis these figures would break down into net household revenues ranging from about 700,000 VND to 4.5 million VND among the Kinh. When we compare these hypothetical annual net revenues to the average annual income of about 1.4 million VND for medium-off households in Thuong Quang commune (Thuong Quang CPC, 2003), it seems that initially most household plantations in the research villages have the potential of providing fair amounts of cash

## CONCLUSIONS AND RECOMMENDATIONS

income (NB: based on ACIAR figures a plot of 1 ha acacia land would be able to provide an annual household income of about 1.4 million VND).

Latter calculations are however based on standardised data for average investment costs and gross revenues, and may therefore present a potential picture very different from reality in both research villages. Unfortunately real survey data on household investments in acacia plantations proved inadequate for detailed calculations, yet general research findings do show that respective household investments are in fact much smaller than the proposed 8 million VND/ha by Van Bueren (2004). Among the Katu in village 4, household investments in acacia trees are on average 2.6 million VND/ha (ranging from 100,000 VND to 7 million VND per hectare). Although household investments made by the Kinh in village 6 are about 1.8 times higher, these still remain relatively small with average amounts of 4.6 million VND/ha (ranging from 1 million VND to 10 million VND per hectare). These figures suggest that for most households the actual output of the first acacia tree harvest will not even come close to the hypothesised future earnings that were presented earlier in this paragraph. Thus at this stage, with current levels of household investment, acacia plantations seem not yet fully capable of providing Kinh and Katu households with stable cash income. Household investments in the second acacia tree crop may however be more in line with the suggested standard, as households will then be able to reinvest the profit from the first acacia harvest in their plantation. These profits alone are not likely to be sufficient though, yet in combination with household savings and/or household credit, maximum investments may be feasible. Survey results show that in 2007 approximately 30% Katu and 36% Kinh households were able to accumulate savings of on average 2.3 million VND/hh among the Katu and 5.7 million VND/hh among the Kinh. The latter shows that accumulating household savings is not a given for all Katu and Kinh in the research villages, thus a certain proportion of acacia growing households may also have to 'resort' to accessing credit in order to establish a profitable acacia plantation. Although study results report that most Katu and Kinh households are hesitant to borrow money for the purpose of investment in acacia plantations (e.g. risky, high investment costs, long-term returns), this perception may well change after gaining experience and benefits of a first acacia tree harvest.

All of the above was written from the perspective of maximising the potential benefits of acacia forest plantation land, solely by using this land for growing acacia trees. Yet, the Kinh and Katu households in the research villages are legally allowed to use 20% of their plantation forest land for other cultivation practices. Acacia tree growing may thus be combined with cultivating agricultural crops (e.g. cassava, corn, upland rice) or domesticated NTFPs. This so-called intercropping land-use strategy may provide households with several important benefits: households are able to secure their plantation forest land (RBC) while making minimum investments in acacia; at the same time households may cultivate part of their land with low risk food or tree crops that may provide them with stable subsistence and cash income. Unfortunately this study was not able to generate detailed information on actual and potential intercropping practices in the research villages; some Kinh

households report of intercropping acacia trees with native timber tree species and non-timber tree species (e.g. cinnamon trees). It appears however relevant and beneficial to conduct further research on how acacia intercropping systems (i.e. agro-forestry systems) may contribute to livelihood development for the Kinh and Katu in the research villages.

#### **7.4 An overall synthesis of FLA impacts on the rural livelihoods of the Kinh and Katu**

This study aimed at creating transparency in how the Katu in village 4 and the Kinh in village 6 shape their forest-related livelihoods and to what extent the allocation of natural and plantation forest land may have impacted their livelihoods. It was hypothesised that Katu households would have less access to levels and combinations of livelihood capitals, therefore have less choice in pursuing livelihood activities, therefore attribute different roles and levels of importance to forest-use and management practices and thus experience different impacts of FLA in comparison to the Kinh.

Based on the comparative analysis of livelihood capitals and activities among the Katu and Kinh (cf. chapter 6) we may however conclude that the two ethnic groups show a rather high degree of homogeneity. Both the Kinh in village 6 and the Katu in village 4 have access to a diversified set of natural assets. The majority of Kinh and Katu households owns fields for lowland rice cultivation ( $\approx 95\%$ ) and land for home gardening ( $\approx 98\%$ ); about 80% of households in both research villages possesses land for rubber plantations. Fields for subsidiary crop cultivation are owned by respectively 90% Katu and 66% Kinh households; approximately 45% of the Katu and 66% of the Kinh have a fish pond. Field crops (i.e. lowland rice, subsidiary crops and cassava) provide Katu and Kinh households in the research villages with their main sources of subsistence income. Whereas lowland rice and subsidiary crops are crucial in obtaining sustainable levels of food security and diversity, cassava crops are an important source of animal food and also function as a household buffer in times when output from staple crops is insufficient. Agricultural tree crops (i.e. home gardens and rubber plantations) provide Katu and Kinh households in the research villages primarily with sources of cash income. Unfortunately research results were not able to provide data on household cash earnings from these practices. Yet, as the average size of home gardens ( $\approx 1500\text{m}^2$ ) is much smaller than the average size of rubber plantations ( $\approx 2.0$  ha), cash earnings derived from the first will be much smaller than income earned from the latter. Households however perceive home garden activities as less labour and capital intensive in comparison to the cultivation of rubber trees (i.e. average start-up costs of 20 million VND/ha) and thus as more feasible. Other agricultural practices in the research villages (i.e. livestock husbandry and hired labour) provide Kinh and Katu households with sources of subsistence income (i.e. manure production; land preparation; transportation), sources of household savings (i.e. 3-5 million VND per cow) and sources of cash income. Kinh and Katu households may earn cash income of 20,000 VND per day from renting out buffalos; hired labour activities may provide households with cash earnings of 60,000 VND per day during the months February, May, June and

## CONCLUSIONS AND RECOMMENDATIONS

December. Research data indicate that 50% Katu and 45% Kinh households perform hired labour activities at rubber and/or acacia plantations that are located in other villages than their own.

While research shows that the Kinh and Katu have similar levels of access to various types of land plus similar percentages of households drawing upon these for their livelihoods, cross-group analysis also indicates that on average the Kinh in village 6 possess larger plots of land than the Katu in village 4. Among the Kinh average fields for lowland rice cultivation are 1.2 times as large, land for home gardens 1.4 times and fields for subsidiary crops 1.3 times as large as those among the Katu. Land plots for rubber plantations are however similar in size among the Kinh and Katu (i.e. average household plots of 2.0 ha). Also in terms of physical assets that may contribute to labour efficiency and land productivity (e.g. motorbike, buffalo), the Kinh appear more advantaged than the Katu. In Kinh village 6 about 73% of households report to have a motorbike, yet only 30% of the Katu in village 4 own a motorbike. While 80% of the Kinh reports to own a buffalo (i.e. 46.3% owns one, 26.8% two and 7.3% owns three or four buffalos), among the Katu this is only 50% (i.e. 40% owns one and 10% own two to four buffalos). Also in terms financial capital we see that the 36% of Kinh households that was able to save money in 2007 accumulated savings of over twice as high as those of the 30% Katu households that were able to save money. In terms of human capital however the research villages do not differ much. Both Kinh and Katu households report of having a fulltime labour capacity of on average 2 households. With regard to educational levels, survey results show literacy rates of 77.3% among Katu household heads (i.e. 36.7% completed primary education, 40% completed secondary education) and of 82.5% among Kinh household heads (i.e. 70% completed primary education, 12.5% completed secondary education).

Research shows that within the rural livelihood portfolios of the Kinh and Katu agricultural practices appear to have a more prominent place than (natural and plantation) forest-use practices. Angelsen & Wunder (2003) already referred to the fact that “together with economic development, forests will lose their importance in terms of subsistence income, yet gain importance in terms of cash income”. Latter seems to apply to the research villages, where benefits of forest-use practices increasingly need to compete with benefits of other livelihood activities. Although households acknowledge the environmental benefits (e.g. stabilisation of sloping land, reduction of erosion, improving soil fertility, maintaining water levels in soil) from sustainable (natural and plantation) forest management, clearly these benefits alone do not offer the Kinh nor the Katu enough incentives. It only seems fair that household investments in sustainable (natural and plantation) forest land management are also returned by adequate levels of economic household benefits within a reasonable timeframe. Although first steps towards the latter have been made in the research villages, study results also identified certain matters that are still in need of further exploration.

## 7.5 Recommendations for further research

The most relevant recommendations for further research that came forward from this case study are briefly stated below.

### Comparative analysis of CFM models: village community versus household groups

Research findings illustrate that in Kinh village 6 some households regret not being part of the common-use household groups, while in Katu village 4 many households are disillusioned with the seemingly poor benefits of village (natural) forest management. Both Kinh and Katu households do not appear to be fully aware of all costs and benefits (e.g. economic, environmental, social, political) that their CFM model entails. This may well be related to the fact that respective costs and benefits are not even transparent yet for people on other institutional levels either (e.g. CPC, FPU, NGOs). It is therefore important to determine the critical success factors for each of these CFM models in order to increase levels of economic efficiency, equity in benefit-sharing, and environmental sustainability.

### In-depth analysis of payments and benefit sharing mechanisms under village forest management

Research findings show that the mechanisms of payments and benefit-sharing from village forest management are not yet transparent in Katu village 4. It is important to uncover the benefit ratios between all stakeholders (e.g. households, VFMB, CPC, FPU) that are part of this benefit-sharing system and design effective institutional structures to legally safeguard, regulate and distribute these natural forest benefits.

### Value chain analysis of household acacia plantations

From research findings it became evident that acacia plantations in the research villages currently do not yet reach their full potential, primarily due to small household investments in acacia trees. Households are hesitant to borrow money in order to increase their investments in acacia plantations and appear in need of more detailed information on the actual potential of acacia plantations in terms of returns on investments. An acacia value chain analysis may provide such information as such analysis identifies all processes and stakeholders that are involved in the total production system of acacia. Based on these outcomes various production and/or marketing strategies may be put forward that support households in deriving maximum benefits from their plantations. From such an analysis it may also become clear to what extent monoculture acacia plantations and/or agro-forestry systems offer potential and/or risks for livelihood development in the research villages.

**REFERENCES**

- Agrawal A. & Clark C. Gibson (1999), Enchantment and disenchantment: the role of community in natural resource conservation. *World Development*, Vol. 27, No. 4, pp. 629-649.
- Agrawal, A. & E. Ostrom (1999), Collective action, property rights, and devolution in forest and protected area management. Bloomington, in: *Workshop in political theory and policy analysis*: 40.
- Angelsen A. & S. Wunder (2003), Exploring the forest-poverty link: Key concepts, issues and research implications. Center for International Forestry Research (CIFOR), Jakarta, Indonesia.
- Arnold J.E.M. & P. Bird (1999), Forests and the poverty nexus. Prepared for the UNDP/EC Expert Workshop on Poverty and the Environment, Brussels, Belgium.
- Arnold J.E.M. (2001), Forestry, Poverty and Aid. Occasional Paper No. 33. Centre for International Forestry Research (CIFOR), Jakarta, Indonesia.
- Asian Development Bank and United Nations Environment Programme (2004), Greater Mekong Subregion Atlas of the Environment. Asian Development Bank, Manilla, the Philippines and United Nations Environment Programme Regional Resource Centre for Asia and the Pacific, Pathumthani, Thailand.
- Baulch B. et al. (2007), Ethnic minority development in Vietnam. *Journal of Development Studies*, Vol. 43, No. 7, pp. 1151 – 1176.
- Bebbington A. (1999), Capitals and capabilities: a framework for analyzing peasant viability, rural livelihoods and poverty. *World Development*, Vol. 27, No. 12, pp. 2021-2044.
- Blaikie P. & H. Brookfield (1987), *Land degradation and society*. London/New York: Methuen.
- Booth D. et al. (1998), Participation and combined methods in African poverty assessment: renewing the agenda. Department for International Development (DFID), London, United Kingdom.
- Bromley Daniel W. (1991), Testing for common versus private property: comment. *Journal of Environmental Economics and Management*, Vol. 21, pp. 92-96.
- Bueren van M. (2004), Acacia hybrids in Vietnam. Impact assessment Series Report No. 27. Australian Centre for International Agricultural Research (ACIAR), Canberra, Australia.
- Burgers P., Ketterings Q.M & Dennis P. Garrity (2005), Fallow management strategies and issues in Southeast Asia. *Agriculture, Ecosystems and Environment*, Vol. 110, pp. 1-13.

## REFERENCES

- Byron N. & Michael Arnold (1997), What futures for the people of the tropical forests? Working Paper No. 19. Centre for International Forestry Research (CIFOR), Jakarta, Indonesia.
- Cairns M. & D.P. Garrity (1999), Improving shifting cultivation in Southeast Asia by building on indigenous fallow management strategies. *Agroforestry Systems*, Vol. 47, pp. 37-48.
- Carney D. et al. (1999), *Livelihood approaches compared*. Department for International Development (DFID), London, United Kingdom.
- Carle J., Vuorinen P. & A. Del Lungo (2002), Status and trends in global forest plantation development. *Forest Products Journal*, Vol. 52, No. 7, pp. 1-13.
- Castella J. et al., (2006), Impact of forestland allocation on land use in a mountainous province of Vietnam. *Land Use Policy* Vol. 23, pp. 147-160.
- Chambers R. & Gordon R. Conway (1992), *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*. IDS Discussion Paper 296. Institute of Development Studies (IDS), Brighton, United Kingdom.
- Clement F. & Jaime M. Amezaga (2008), Linking reforestation policies with land use change in northern Vietnam: why local factors matter. *Geoforum* 39, pp. 265-277.
- Colchester M. & Chip Fay (2007), *Land, forests and people: facing the challenges in south-east Asia*. Rights and Resources Initiative (RRI), Washington DC, United States of America.
- Cramb R., Purcell T. & T.C.S. Ho (2004), Participatory assessment of rural livelihoods in the Central Highlands of Vietnam. *Agricultural Systems* 81, pp. 255-272.
- DFID Department for International Development (1999), *Sustainable Livelihood Guidance Sheets*. Livelihoods Connect [Online]. [ cited on 29 June 2007]. Available on the World Wide Web: <[www.livelihoods.org/info/info\\_guidancesheets.html#1](http://www.livelihoods.org/info/info_guidancesheets.html#1)>.
- Dubois O. (2002), Forest-based poverty reduction: a brief review of facts, figures, challenges and possible ways forward. In: Oksanen T., Pajari B. & Tomi Tuomasjukka (eds.) (2003), *Forests in poverty reduction strategies: capturing the potential*. EFI Proceedings No. 47. European Forest Institute (EFI), Joensuu, Finland.
- Duong Viet Tinh et al. (2007), *Report of survey on community forest management in Thu Thien Hue Province, second draft*. Forest Governance and Learning Group, Vietnam.
- Ellis F. (2000), *Rural livelihoods and diversity in developing countries*. Oxford University Press, Oxford, United Kingdom.

## REFERENCES

- Gomiero T. et al., (2000), Vietnamese Uplands: Environmental and socio-economic perspective of forest land allocation and deforestation process. *Environment, Development and Sustainability* Vol. 2, pp. 119-142.
- Green Corridor project (2006), Project maps [Online]. [cited on 20 November 2008]. Available on the World Wide Web: <[http://www.huegreencorridor.org/index.php?option=com\\_docman&task=cat\\_view&gid=16&Itemid=32&lang=en](http://www.huegreencorridor.org/index.php?option=com_docman&task=cat_view&gid=16&Itemid=32&lang=en)>.
- Haan de L. (2000), Globalization, Localization and Sustainable Livelihood. *Sociologia Ruralis*, Vol. 40, No. 3, pp. 339–365.
- Haan de L. & A. Zoomers (2005), Exploring the frontiers of livelihoods research. *Development and Change*, Vol. 36, No. 1, pp. 27-47.
- Hardcastle J. (2002), Opportunities for indigenous community management of forest resources in the central Truong Son Uplands, Quang Nam. [online]. [cited on 25 November 2007]. Available on the World Wide Web: <[http://assets.panda.org/downloads/community\\_forest\\_management\\_quangnam.pdf](http://assets.panda.org/downloads/community_forest_management_quangnam.pdf)>.
- Hasan, L. (2002), Revisiting commons – are common property regimes irrational? MPRA Paper No. 8316. Munich Personal RePEc Archive [online]. [cited on 12 August 2010]. Available on the World Wide Web: <<http://mpra.ub.uni-muenchen.de/8316/>>.
- Helvetas (2006), Community forestry management technical guidelines. Helvetas Vietnam – Swiss association for International Cooperation.
- Hoang Lan Anh & Claudia Doets (2004,) Land for the poor. Report of the Participatory Land Use Planning and Forest Land Allocation in Thua Thien Hue province. SNV Vietnam Netherlands Development Organisation, Hanoi, Vietnam.
- Hoang Thi Thanh Nga (2008), Upgrading strategy for the rubber value chain of smallholders in Bo Trach district, Quang Binh province. Discussion paper. Hanoi, Vietnam [online]. [cited on 30 August 2011]. Available on the World Wide Web: <[http://www.smnr-cv.org/downloads/webdownloads/558902/0806\\_Upgraing\\_Strategy\\_for\\_Rubber\\_Value\\_Chain-Eng.pdf](http://www.smnr-cv.org/downloads/webdownloads/558902/0806_Upgraing_Strategy_for_Rubber_Value_Chain-Eng.pdf)>.
- Hobley M. (2007), Where in the world is there pro-poor forest policy and tenure reform? Rights and Resources Initiative (RRI), Washington DC, United States of America.
- Hook J. et al. (2003), Social Atlas of the Lower Mekong Basin. Mekong River Commission, Phnom Penh, Cambodia.
- Huynh Thu Ba (2002), Indigenous peoples/ethnic minorities and poverty reduction Vietnam. Asian Development Bank (ADB), Manila, Philippines.

## REFERENCES

- Jakobsen et al., (2007), The effects of land tenure policy on rural livelihoods and food sufficiency in the upland village of Que, North Central Vietnam. *Agricultural Systems* Vol. 94, pp. 309-319.
- Jong de W., Do Dinh Sam & Trieu Van Hung (2006), *Forest rehabilitation in Vietnam: histories, realities and future*. Centre for International Forestry Research (CIFOR), Bogor, Indonesia.
- Krantz L. (2001), *The sustainable livelihood approach to poverty reduction: an introduction*. Swedish International Development Cooperation Agency (SIDA), Stockholm, Sweden.
- Leach M. et al. (1999), Environmental entitlements: Dynamics and institutions in community-based natural resource management. *World Development*, Vol. 27, No. 2, pp. 225-247.
- Ministry of Agriculture and Rural Development (MARD) (2003), Chapter 3: Forestry Development Orientation. In: *Forestry Sector Manual*, pp. 1-114, Hanoi, Vietnam.
- McElwee P. (2010), Resource use among rural agricultural households near protected areas in Vietnam: the social costs of conservation and implications for enforcement. *Environmental Management* Vol. 45, pp. 113-131.
- Mahanty S. et al. (2006), Reducing poverty through community based forest management in Asia. *Journal of Forest and Livelihood*, Vol. 5, No. 1, pp. 78-89.
- Morris J. et al. (2004), *Linking poverty reduction with forest conservation: Case studies from Vietnam*. International Union for Conservation of Nature and Natural Resources (IUCN), Bangkok, Thailand.
- Ministry of Agriculture and Rural Development (2006), *Draft guidelines for management of village community forest*. Ministry of Agriculture and Rural Development, Socialist Republic of Vietnam.
- MRC (2003), *State of the Basin Report: 2003*. Mekong River Commission, Phnom Penh, Cambodia.
- Nam Dong Statistical Yearbook (2007), *Statistical Data 2006*. Statistical Publishing House, Hanoi, Vietnam.
- Neefjes K. (2000), *Environments and livelihoods, strategies for sustainability*. Oxfam Publishing, Oxford, United Kingdom.
- Nam Dong District People's Committee (2005), *The community forest management plan stage 2005-2010 of village A-Ro in Thuong Quang commune*. Nam Dong District People's Committee, Socialist Republic of Vietnam.

## REFERENCES

- Ngo Tri Dung & Edward L. Webb (2008), Incentives of the Forest Land Allocation Process: Implications for forest management in Nam Dong district, central Vietnam. In: Webb, Edward L. & Ganesh P. Shivakoti (2008), Decentralization, forests and rural communities, policy outcomes in south and southeast Asia, pp. 269-292, Sage Publications India Pvt Ltd, New Delhi, India.
- Nguyen Huy Dzung et al. (2004), The return of limestone forests, northeastern Vietnam: a collaborative study by the Forest Resources and Environment Center, Forest Inventory and Planning Institute and Asia Forest Network. Asia Forest Network, Bohol, Philippines.
- Nguyen Quang Tan (2006), Forest devolution in Vietnam: differentiation in benefits from forest among local households. *Forest Policy and Economics* Vol. 8, pp. 409-420.
- Nguyen Ba Ngai, Nguyen Hong Quang & Ernst Kuester (2006), Vietnam Community forest management 2005. In: RECOFTC 2005. First Regional Community Forestry Forum - Regulatory Frameworks for Community Forestry in Asia – Proceedings of a Regional Forum held in Bangkok, Thailand, pp. 115-134. Regional Community Forestry Training Centre for Asia and the Pacific (RECOFTC), Bangkok, Thailand.
- Nguyen Quang Tan, Nguyen Van Chinh & Vu Thu Hanh (2008), Statutory and customary forest rights and their governance implications, the case of Vietnam. Prepared for the IUCN strengthening voices for better choices project. International Union for Conservation of Nature (IUCN), Hanoi, Vietnam.
- Oksanen T., Pajari B. & Tomi Tuomasjukka (eds.) (2003), Forests in poverty reduction strategies: capturing the potential. EFI Proceedings No. 47. European Forest Institute (EFI), Joensuu, Finland.
- Persoon Gerard A. et al. (2004), The position of indigenous peoples in the management of tropical forests. Tropenbos Series 23. Tropenbos International, Wageningen, the Netherlands.
- Poffenberger, M. et al. (1998), Stewards of Vietnam's upland forest. A collaborative study by the Asia Forest Network and the Forest Inventory and Planning Institute, Manila, Philippines.
- Quan Xuan Dinh (2000), The Political Economy of Vietnam's Transformation Process. *Contemporary Southeast Asia: A Journal of International & Strategic Affairs*, Vol. 22, No. 2, pp. 360-388.
- Roe D. (2008), The origins and evolution of the conservation-poverty debate: a review of key literature, events and policy processes. *Flora and Fauna International*, Oryx 42 (4), pp. 491-503.
- Ros-Tonen M.A.F (2000), The role of non-timber forest products in sustainable tropical forest management. *Holz als Roh- und Werkstoff* Vol. 58, pp. 196-201.
- Scoones I. (1998), Sustainable Rural Livelihoods: A Framework for Analysis. IDS Working Paper. Institute of Development Studies (IDS), Brighton, United Kingdom.

## REFERENCES

Sen Amartya (1984), Rights and capabilities. In: Sen Amartya, Resources, Values and Development. Basil Blackwell, Oxford, pp. 307-324.

Sen Amartya (1987), Commodities and capabilities. Oxford University Press, Delhi, India.

Shankland A. (2000), Analysing policy for sustainable livelihoods. IDS Research Report 49. Institute of Development Studies (IDS), Brighton, United Kingdom.

Sikor T. (2006a), Analyzing community-based forestry: local, political and agrarian perspectives. Forest Policy and Economics No. 8, pp. 339-349.

Sikor T. (2006b), Politics of rural land registration in post-socialist societies: contested titling in villages of Northwest Vietnam. Land Use Policy Vol. 23, pp.617-628.

Sikor T. & Nguyen Quang Tan (2007), Why may forest devolution not benefit the rural poor? Forest entitlements in Vietnam's Central Highlands. World Development Vol. 35, pp. 2010-2025.

Sikor T. & Tran Ngoc Thanh (2007), Exclusive versus inclusive devolution in forest management: insights from forest land allocation in Vietnam's Central Highlands. Land Use Policy Vol. 24, pp. 644-653.

Socialist Republic of Vietnam (2007), Vietnam Forestry Development Strategy 2006-2020. [online]. [cited on 28 October 2009]. Available on the World Wide Web: <[http://www.vietnamforestry.org.vn/LegalDocument\\_en.html](http://www.vietnamforestry.org.vn/LegalDocument_en.html)>.

Solesbury W. (2003), Sustainable livelihoods: a case study of the evolution of DFID policy. Working paper 217. Overseas Development Institute (ODI), London, United Kingdom.

Sunderlin William D, Angelsen A. & Sven Wunder (2004), Forest and poverty alleviation. Center for International Forestry Research (CIFOR), Jakarta, Indonesia.

Sunderlin William D. & Huynh Thu Ba (2005), Poverty alleviation and forests in Vietnam. Center for International Forestry Research (CIFOR), Jakarta, Indonesia.

Sunderlin William D. et al (2005), Livelihoods, forests and conservation in developing countries: an overview. World Development Vol. 33, No. 9, pp. 1383-1402.

Thuong Quang Commune People's Committee (2003), Land use planning and land allocation project in Thuong Quang commune from 2003-2010. Thuong Quang Commune People's Committee, Socialist Republic of Vietnam.

Thuong Quang CPC & A-Ro Village Management Board (2005), Regulations of managing, protecting and developing forest of village 4 A- Ro in Thuong Quang commune. Thuong Quang Commune People's Committee, Socialist Republic of Vietnam.

## REFERENCES

Tran Ngoc Thanh & T. Sikor (2006), From legal acts to actual powers: devolution and property rights in the Central Highlands of Vietnam. *Forest Policy and Economics* Vol. 8, pp. 397-408.

Vedeld P. et al. (2004), Counting on the environment: Forest incomes and the rural poor. *Environmental Economics Series*, Paper No. 98. The World Bank Environment Department, Washington DC, United States of America.

Vu Van Duong et al. (2002), An overview of the NTFP sub-sector in Vietnam. Forest Science Institute of Vietnam, Hanoi, Vietnam.

Vuong Xuan Tinh (2008), Traditional land tenure and land use system of ethnic minorities in Vietnam. [online]. [cited on 8 February 2008]. Available on the World Wide Web: <[www.mekonginfo.org/mrc\\_en/doclib.nsf/0/F86E708C181157DC47256BBF0032CD0B/\\$FILE/R\\_Tinh.html](http://www.mekonginfo.org/mrc_en/doclib.nsf/0/F86E708C181157DC47256BBF0032CD0B/$FILE/R_Tinh.html)>.

Walle van de D. & D. Gunewardena (2001), Sources of ethnic inequality in Vietnam. *Journal of Development Economics* Vol. 65, pp. 177-207.

Webb, L. (2008), Forest policy as a changing context in Asia. In: Webb, Edward L. & Ganesh P. Shivakoti (2008), *Decentralization, forests and rural communities, policy outcomes in south and southeast Asia*, pp. 21-43, Sage Publications India Pvt Ltd, New Delhi, India.

Wetterwald O. et al. (2004), Non-timber forest products in Nam Dong district, central Vietnam: Ecological and economic prospects. *Schweiz. Z. Forstwes.* 155 (2), pp. 45-52.

World Bank (2010), Vietnam: support to ethnic minority communities in remote and mountainous areas. [online]. [cited on 12 May 2011]. Available on the World Wide Web: <<http://web.worldbank.org>>.

World Resource Institute (WRI) in collaboration with United Nations Development Programme, United Nations Environment Programme and World Bank (2005), *The wealth of the poor, managing ecosystems to fight poverty*. World Resource Institute, Washington DC, United States of America.

Wunder S. (2001), Poverty alleviation and tropical forests - What scope for synergies? *World Development*, vol. 29 (11), pp. 1817- 1833.

Wunder S., Bui Dung The & Enrique Ibarra (2005), Payment is good, control is better: why payments for forest environmental services in Vietnam have so far remained incipient. Center for International Forestry Research (CIFOR), Bogor, Indonesia.

<b>APPENDIX I: LIST OF INTERVIEWEES</b>
---

<b>Hue City</b>		
04-03-2008	Mr Dang Thanh Liem	Forestry officer, TBI Vietnam
07-03-2008	Mr Le Van Hoa	Vice-director, Forest Sub Department Thua Thien Hue Province
	Mr Huy	Head technical division, Forest Sub Department Thua Thien Hue province
18-03-2008	Mr Le Viet Tam	Collaborative forestry advisor, SNV Vietnam
23-05-2008	Mr Pham Dinh Van	Vice Director of the Management Board of World Bank funded project on forest plantation No 3
<b>Nam Dong District</b>		
14-03-2008	Mr Khoi	Vice-chair, CPC Thuong Nhat
14-03-2008	Mr Xang	Vice-chair, FPU Nam Dong
14-03-2008	Mr Son	ARDO Nam Dong
18-03-2008	Mr Xang	Vice-chair, FPU Nam Dong
27-03-2008	Mr Phan Che Xe	Vice head, ONRE Nam Dong
	Mr Than Thanh Ly	Head of the Land Registration Office, ONRE Nam Dong
25-04-2008	Mr Mang	Vice-chair, CPC Thuong Quang
14-05-2008	Mr Xang	Vice-chair, FPU Nam Dong
<b>Thuong Quang Commune, Village 4</b>		
09-05-2008	Mr Lai	Village leader
09-05-2008	Ms Proi	Villager
09-05-2008	Mr Ho Tung Nam	Villager
09-05-2008	Mr Le Son Do	Villager
09-05-2008	Mr Tran Van Thanh	Villager
15-05-2008	Mr Tran Van Chia	Villager, Officer of Commune Communist Party
15-05-2008	Mr Le Xuan Duoi	Villager, Member of Village Forest Protection Board
<b>Thuong Quang Commune, Village 6</b>		
07-05-2008	Mr Le Sim	Villager
07-05-2008	Mr La Huu Vien	Village leader
07-05-2008	Ms Nham	Villager
14-05-2008	Mr Le Ba cuom	Villager, Acacia plantation owner
14-05-2008	Mr Nguyen Xuan Mung	Villager, Member of the Forest Protection Team

## APPENDIX II: OVERVIEW FIELD VISITS AND RESEARCH ACTIVITIES

<i>Field visits</i>	<i>When</i>	<i>Where</i>	<i>What</i>
I.	27-03-2008 28-03-2008 02-04-2008	Thuong Quang, Village 4 Thuong Quang, Village 6 Thuong Nhat, village 1	First meeting & interview village leader Village walk Mapping exercise Focus group discussion
II.	03-04-2008 04-04-2008 07-04-2008	Thuong Quang, village 6 Thuong Quang, village 4 Thuong Nhat, village 1	Wealth ranking exercise Inventory livelihood activities Ranking livelihood activities Seasonal calendar
III.	16-04-2008 17-04-2008 18-04-2008	Thuong Nhat, village 1 Thuong Quang, Village 4 Thuong Quang, Village 6	Village time line Trend analysis Group interview impact FLA
IV.	02-05-2008	Thuong Nhat, village 1	Piloting household survey
V.	06-05-2008 07-05-2008 08-05-2008 09-05-2008 10-05-2008		Household survey ( <i>conducted by HUAF students</i> ) Individual household interviews
VI.	14-05-2008 15-05-2008		Individual household interviews Finalising field work



**B. Household composition**

6. Could you please complete the table below for all the people that live in your house?

No.	Relation to head of household	M/F	Year of birth	Highest level of education completed	
1.	Head of household			<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary education <input type="checkbox"/> Intermediate education (grade 6-9)	<input type="checkbox"/> Secondary education (grade 10-12) <input type="checkbox"/> Higher education <input type="checkbox"/> Other, specify:
2.				<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary education <input type="checkbox"/> Intermediate education (grade 6-9)	<input type="checkbox"/> Secondary education (grade 10-12) <input type="checkbox"/> Higher education <input type="checkbox"/> Other, specify:
3.				<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary education <input type="checkbox"/> Intermediate education (grade 6-9)	<input type="checkbox"/> Secondary education (grade 10-12) <input type="checkbox"/> Higher education <input type="checkbox"/> Other, specify:
4.				<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary education <input type="checkbox"/> Intermediate education (grade 6-9)	<input type="checkbox"/> Secondary education (grade 10-12) <input type="checkbox"/> Higher education <input type="checkbox"/> Other, specify:
5.				<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary education <input type="checkbox"/> Intermediate education (grade 6-9)	<input type="checkbox"/> Secondary education (grade 10-12) <input type="checkbox"/> Higher education <input type="checkbox"/> Other, specify:
6.				<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary education <input type="checkbox"/> Intermediate education (grade 6-9)	<input type="checkbox"/> Secondary education (grade 10-12) <input type="checkbox"/> Higher education <input type="checkbox"/> Other, specify:
7.				<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary education <input type="checkbox"/> Intermediate education (grade 6-9)	<input type="checkbox"/> Secondary education (grade 10-12) <input type="checkbox"/> Higher education <input type="checkbox"/> Other, specify:
8.				<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary education <input type="checkbox"/> Intermediate education (grade 6-9)	<input type="checkbox"/> Secondary education (grade 10-12) <input type="checkbox"/> Higher education <input type="checkbox"/> Other, specify:
9.				<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary education <input type="checkbox"/> Intermediate education (grade 6-9)	<input type="checkbox"/> Secondary education (grade 10-12) <input type="checkbox"/> Higher education <input type="checkbox"/> Other, specify:
10.				<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary education <input type="checkbox"/> Intermediate education (grade 6-9)	<input type="checkbox"/> Secondary education (grade 10-12) <input type="checkbox"/> Higher education <input type="checkbox"/> Other, specify:
11.				<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary education <input type="checkbox"/> Intermediate education (grade 6-9)	<input type="checkbox"/> Secondary education (grade 10-12) <input type="checkbox"/> Higher education <input type="checkbox"/> Other, specify:
12.				<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary education <input type="checkbox"/> Intermediate education (grade 6-9)	<input type="checkbox"/> Secondary education (grade 10-12) <input type="checkbox"/> Higher education <input type="checkbox"/> Other, specify:

7. Please indicate in which of the following public organisations, if any, you or any of your household members currently hold a position or did so in the past 10 years.

*More than 1 answer possible.*

- Commune administration
- Village administration
- Village Communist Party
- Village unions (for example: Women's Union, Farmer's Unions, Old People's Union)
- Other, please specify.....

8. How many household members work full time for the household either for subsistence or income generation?

.....

**C. Livelihood assets**

9. Could you please specify what type of house your household lives in:

- Timber house
- Mud or stone house with a corrugated iron roof
- Mud or stone house with a tile roof
- Other, please specify: .....

10. Could you please specify which assets your household owns at this moment:

- Radio
- Television
- Bicycle
- Motorbike

11. Could you please specify the number of livestock your household owns at the moment:

Buffalo .....

Cow .....

Pig .....

12. Could you please specify in the table below the size of the different types of land that your household currently exploits?

		Total size	Land status			
			Owned (have RBC)	Owned (not have RBC)	Rented	Other
<b>A. Agricultural land</b>						
A.1	Lowland rice fields	Sao	Sao	Sao	Sao	Sao
A.2	Fields for cultivating subsidiary crops	Sao	Sao	Sao	Sao	Sao
A.3	Upland fields for cultivation	Ha	Ha	Ha	Ha	Ha
A.4	Rubber plantations	Ha	Ha	Ha	Ha	Ha
<b>B. Forest land</b>						
B.1	Acacia plantations	Ha	Ha	Ha	Ha	Ha
B.2	Natural forest	Ha	Ha	Ha	Ha	Ha
<b>C. Residential land</b>						
C.1	Home garden	Sao	Sao	Sao	Sao	Sao
C.2	Fish ponds	m <sup>2</sup>	M <sup>2</sup>	m <sup>2</sup>	m <sup>2</sup>	m <sup>2</sup>
<b>D. Other, please specify:</b>						

13. Could you indicate the total amount that your household was able to save in 2007?

.....VND

- My household was not able to save
- I don't know how much my household saved
- I rather not share this information

14. Are you or anybody in your household borrowing money at this moment?

- Yes
- No

If the answer is No please specify:

- I do not need a loan
- I cannot get a loan

Why not? .....

If the answer is Yes please specify:

- Sources: .....
- Amount: .....
- Monthly interest rate: .....
- Purpose of the loan: .....

15. Could you please indicate how many months a year, if any, your household experiences rice shortage?

..... months/year

16. How would you classify your household:

- Poor
- Medium
- Better-off
- Other, please specify:.....

**D. Livelihood activities**

17. Could you please indicate whether your household is currently involved in the activities listed in the table below? → If the answer is Yes please answer question 18 and 19.

18. How important are the activities in which your household is currently involved for household subsistence?

- 0 = my household is currently not involved in this activity for the purpose of household subsistence
- 1 = marginal importance
- 2 = average importance
- 3 = very important, crucial

19. How important are the activities in which your household is currently involved for commercial sales?

**Please base your answer on current sales and not on expected future sales!**

- 0 = my household is currently not involved in this activity for the purpose of commercial sales
- 1 = marginal importance
- 2 = average importance
- 3 = very important, crucial

A. Cultivation	Involvement	Household subsistence	Commercial sales
A.1 Cultivating lowland rice	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A.2 Cultivating subsidiary crops	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A.3 Home gardening	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A.4 Cultivating cassava	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A.5 Cultivating upland rice	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A.6 Planting and (in the future) harvesting rubber	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>B. Husbandry</b>			
B.1 Cattle raising (buffalo, cow, ox, goat, sheep)	<input type="checkbox"/> Yes <input type="checkbox"/> No		
B.2 Pig raising	<input type="checkbox"/> Yes <input type="checkbox"/> No		
B.3 Poultry raising	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>C. Fresh water aquaculture</b>			
C.1 Fish raising	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>D. Forestry</b>			
D.1 Protecting and managing natural forest and (in the future) harvesting timber	<input type="checkbox"/> Yes <input type="checkbox"/> No		
D.2 Planting and (in the future) harvesting acacia	<input type="checkbox"/> Yes <input type="checkbox"/> No		
D.3 Planting and (in the future) harvesting bamboo-related products	<input type="checkbox"/> Yes <input type="checkbox"/> No		
D.4 Firewood collection	<input type="checkbox"/> Yes <input type="checkbox"/> No		
D.5 NTFPs collection	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>E. Other activities</b>			
E.1 Hired day-labourer (Lam thue)	<input type="checkbox"/> Yes <input type="checkbox"/> No		
E.2 Work for a monthly wage (government official, teacher, etc.)	<input type="checkbox"/> Yes <input type="checkbox"/> No		
E.3 Operating a local business (shop keeping, construction, transportation, etc.)	<input type="checkbox"/> Yes <input type="checkbox"/> No		
E.4 Handicrafts (processing agro-forestry products)	<input type="checkbox"/> Yes <input type="checkbox"/> No		
E.5 Other, please specify:	<input type="checkbox"/> Yes <input type="checkbox"/> No		



The following questions are only applicable to households living in village 4 of Thuong Quang commune and village 1 of Thuong Nhat commune. For households living in village 6 of Thuong Quang commune please proceed to question 30!

28. Are/Were you or any of your household members a member of the village forest management board?

- Yes  
 No

29. Are/Were you or any of your household members a member of the forest protection team?

- Yes  
 No

From question 30 onwards the questions are applicable to all 3 villages.

30. Could you please indicate for each of the forest use practices mentioned in the tables I – V below:

– Before the allocation of the natural forest:

Whether or not your household was involved in the forest use practices, both in the (presently) allocated natural forest and the non-allocated natural forest?

– Presently:

Whether or not your household is involved in the forest use practices, both in the allocated natural forest and the non-allocated natural forest?

**I. “My household harvests timber for sale”**

	<b>Before FLA</b>	<b>Presently</b>
<b>In the allocated natural forest</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes, but smaller quantities than before FLA <input type="checkbox"/> Yes, same quantities as before FLA <input type="checkbox"/> Yes, but bigger quantities than before FLA
	<input type="checkbox"/> No	<input type="checkbox"/> No <input type="checkbox"/> Yes
<b>In the non-allocated natural forest</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes, but smaller quantities than before FLA <input type="checkbox"/> Yes, same quantities as before FLA <input type="checkbox"/> Yes, but bigger quantities than before FLA
	<input type="checkbox"/> No	<input type="checkbox"/> No <input type="checkbox"/> Yes

**II. “My household harvests timber for housing and furniture”**

	<b>Before FLA</b>	<b>Presently</b>
<b>In the allocated natural forest</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes, but smaller quantities than before FLA <input type="checkbox"/> Yes, same quantities as before FLA <input type="checkbox"/> Yes, but bigger quantities than before FLA
	<input type="checkbox"/> No	<input type="checkbox"/> No <input type="checkbox"/> Yes
<b>In the non-allocated natural forest</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes, but smaller quantities than before FLA <input type="checkbox"/> Yes, same quantities as before FLA <input type="checkbox"/> Yes, but bigger quantities than before FLA
	<input type="checkbox"/> No	<input type="checkbox"/> No <input type="checkbox"/> Yes

**III. “My household collects firewood”**

	<b>Before FLA</b>	<b>Presently</b>
<b>In the allocated natural forest</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes, but smaller quantities than before FLA <input type="checkbox"/> Yes, same quantities as before FLA <input type="checkbox"/> Yes, but bigger quantities than before FLA
	<input type="checkbox"/> No	<input type="checkbox"/> No <input type="checkbox"/> Yes
<b>In the non-allocated natural forest</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes, but smaller quantities than before FLA <input type="checkbox"/> Yes, same quantities as before FLA <input type="checkbox"/> Yes, but bigger quantities than before FLA
	<input type="checkbox"/> No	<input type="checkbox"/> No <input type="checkbox"/> Yes

**IV. “My household collects NTFPs” (such as rattan, bamboo, bee honey, leaves, vegetables)**

	<b>Before FLA</b>	<b>Presently</b>
<b>In the allocated natural forest</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes, but smaller quantities than before FLA <input type="checkbox"/> Yes, same quantities as before FLA <input type="checkbox"/> Yes, but bigger quantities than before FLA
	<input type="checkbox"/> No	<input type="checkbox"/> No <input type="checkbox"/> Yes
<b>In the non-allocated natural forest</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes, but smaller quantities than before FLA <input type="checkbox"/> Yes, same quantities as before FLA <input type="checkbox"/> Yes, but bigger quantities than before FLA
	<input type="checkbox"/> No	<input type="checkbox"/> No <input type="checkbox"/> Yes

**V. “My household clears forest land for upland cultivation”**

	<b>Before FLA</b>	<b>Presently</b>
<b>In the allocated natural forest</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes, but smaller plots than before FLA <input type="checkbox"/> Yes, same plot size as before FLA <input type="checkbox"/> Yes, but bigger plots than before FLA
	<input type="checkbox"/> No	<input type="checkbox"/> No <input type="checkbox"/> Yes
<b>In the non-allocated natural forest</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes, but smaller plots than before FLA <input type="checkbox"/> Yes, same plot size as before FLA <input type="checkbox"/> Yes, but bigger plots than before FLA
	<input type="checkbox"/> No	<input type="checkbox"/> No <input type="checkbox"/> Yes

31. When comparing the present situation with the situation before natural forest land allocation, could you please indicate in the table below how the quantity (availability) of the listed forest products in both the allocated and non-allocated forest has changed?

32. When comparing the present situation with the situation before natural forest land allocation, could you please indicate in the table below how the quality of the forest products in both the allocated and non-allocated forest has changed?

	<b>Comparison present situation with situation before FLA</b>			
	<b>Available quantity of forest products</b>		<b>Quality of available forest products</b>	
<b>Forest products</b>	<b>Allocated natural forest</b>	<b>Non-allocated natural forest</b>	<b>Allocated natural forest</b>	<b>Non-allocated natural forest</b>
Timber for housing and furniture	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know
Timber for sale	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know
Firewood	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know
NTFPs	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know	<input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Same <input type="checkbox"/> Don't know

APPENDIX III: HOUSEHOLD QUESTIONNAIRE

33. Could you indicate whether your household was involved in the activities listed in the table below before natural forest land allocation? → If the answer is Yes please answer question 34 and 35.
34. How important were the activities in which your household was involved before natural forest land allocation for household subsistence?  
 0 = my household was not involved in this activity for the purpose of household subsistence  
 1 = marginal importance  
 2 = average importance  
 3 = very important, crucial
35. How important were the activities in which your household was involved before natural forest land allocation for commercial sales?  
 0 = my household was not involved in this activity for the purpose of commercial sales  
 1 = marginal importance  
 2 = average importance  
 3 = very important, crucial

A. Cultivation	Involvement before FLA	Household subsistence	Commercial sales
A.1 Cultivating lowland rice	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A.2 Cultivating subsidiary crops	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A.3 Home gardening	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A.4 Cultivating cassava	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A.5 Cultivating upland rice	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A.6 Planting and (in the future) harvesting rubber	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>B. Husbandry</b>			
B.1 Cattle raising (buffalo, cow, ox, goat, sheep)	<input type="checkbox"/> Yes <input type="checkbox"/> No		
B.2 Pig raising	<input type="checkbox"/> Yes <input type="checkbox"/> No		
B.3 Poultry raising	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>C. Fresh water aquaculture</b>			
C.1 Fish raising	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>D. Forestry</b>			
D.1 Protecting and managing natural forest and (in the future) harvesting timber	<input type="checkbox"/> Yes <input type="checkbox"/> No		
D.2 Planting and (in the future) harvesting acacia	<input type="checkbox"/> Yes <input type="checkbox"/> No		
D.3 Planting and (in the future) harvesting bamboo-related products	<input type="checkbox"/> Yes <input type="checkbox"/> No		
D.4 Firewood collection	<input type="checkbox"/> Yes <input type="checkbox"/> No		
D.5 NTFPs collection	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>E. Other activities</b>			
E.1 Hired day-labourer (Lam thue)	<input type="checkbox"/> Yes <input type="checkbox"/> No		
E.2 Work for a monthly wage (government official, teacher, etc.)	<input type="checkbox"/> Yes <input type="checkbox"/> No		
E.3 Operating a local business (shop keeping, construction, transportation, etc.)	<input type="checkbox"/> Yes <input type="checkbox"/> No		
E.4 Handicrafts (processing agro-forestry products)	<input type="checkbox"/> Yes <input type="checkbox"/> No		
E.5 Other, please specify:	<input type="checkbox"/> Yes <input type="checkbox"/> No		

36. Could you estimate the total income earned by your household in 2007 from selling timber that was harvested from the natural forest?  
 .....VND  
 Don't know
37. Could you estimate the total income earned by your household in 2007 from selling NTFPs that were collected from the natural forest?  
 .....VND  
 Don't know
38. How much timber (excluding firewood) does your household need on average each year (for house construction and repair, for furniture, for fencing, etc.)?  
 ..... m<sup>3</sup>  
 Don't know
39. Has the natural forest land allocation resulted in any benefits for your household?  
 Yes  
 No
- Why?  
 .....  
 .....  
 .....

**F. Acacia plantations**

40. Does your household own a RBC for acacia plantation forest land?  
**Acacia plantation forest land can be bare land planned for acacia planting as well as land on which acacia trees are already planted!**  
 Yes (*proceed to question 43*)  
 No (*proceed to question 41*)
41. Why does your household not own a RBC for acacia plantation forest land?  
 .....  
 .....
42. Has your household planted acacia trees on forest land for which no RBC has been acquired yet?  
 Yes (*proceed to question 46*)  
 No (*proceed to question 52*)
43. When did your household acquire the RBC? .....
44. What is the size of the acacia plantation forest land for which your household has received the RBC?  
 ..... ha

45. Have you planted acacia trees on the plantation forest land for which your household has received the RBC?  
 Yes (*proceed to question 46*)  
 No (*proceed to question 50*)

46. When have you planted acacia trees on the plantation forest land?  
 .....

47. Could you indicate what support, if any, your household received for the establishment of the acacia forest plantation?  
 Please specify the name of the organisation that provided the support.

Type of support	Received	Responsible organisation
Provision of seedlings	<input type="checkbox"/> Yes <input type="checkbox"/> No	..... <input type="checkbox"/> Don't know
Provision of fertilizers	<input type="checkbox"/> Yes <input type="checkbox"/> No	..... <input type="checkbox"/> Don't know
Credit	<input type="checkbox"/> Yes, please specify amount: .....VND <input type="checkbox"/> No	..... <input type="checkbox"/> Don't know
Training about tree planting and nursing	<input type="checkbox"/> Yes <input type="checkbox"/> No	..... <input type="checkbox"/> Don't know

48. Have you invested any of your own money for the establishment of the acacia plantation?  
 Yes, please specify the amount of money you invested per hectare:.....VND  
 No

49. Have you already harvested timber from your households' acacia plantation forest?  
 Yes  
 No

If the answer is Yes, could you please estimate the total income earned from the last timber harvest?

.....VND/ha (*proceed to question 52*)

If the answer is No, could you estimate what you expect to earn from your future timber harvest?

.....VND/ha (*proceed to question 52*)

50. Why have you not planted acacia trees on the plantation forest land for which your household has received the RBC?

.....  
 .....

51. Do you plan to plant acacia trees on the plantation forest land for which your household has received the RBC in the future?
- Yes (*proceed to question 52*)
  - No

If the answer is No please explain why you do not plan on planting acacia trees:

.....  
.....

*(proceed to question 52)*

52. Has the establishment of acacia forest plantations resulted in any benefits for your household?
- This question should be completed by all the respondents, regardless of having a RBC or not and having planted acacia trees or not!*
- Yes
  - No

Why?

.....  
.....  
.....

53. In case you have any further remarks, suggestions or information that you would like to share with us, please use the space below:

.....  
.....  
.....

Thanks for your participation!

**For the interviewer:**

If you have any remarks, suggestions or information that you would like to share with us, please use the space in this box.

## APPENDIX IV: TABULATED SURVEY RESULTS

## CHAPTER 5: FOREST LAND ALLOCATION IN THE RESEARCH VILLAGES

**Figure 1: Benefits natural forest land allocation \* research village**

Natural forest land allocation has resulted in benefits for the household	Research village				Total	
	Katu village 4		Kinh village 6		Total	
	hh	%	Hh	%	hh	%
Yes	24	80,0%	15	36,6%	39	54,9%
No	6	20,0%	26	63,4%	32	45,1%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 2: Specification of natural FLA benefits \* research village**

Specification of benefits from natural forest land allocation	Research village				Total	
	Katu village 4		Kinh village 6		Total	
	hh	%	hh	%	Hh	%
Improve quality forest	1	4,5%	3	<b>20,0%</b>	4	10,8%
Exploitation rights	0	,0%	2	13,3%	2	5,4%
Management and protection rights	2	9,1%	0	,0%	2	5,4%
Collect NTFP	7	<b>31,8%</b>	1	6,7%	8	21,6%
Harvest wood	0	,0%	3	<b>20,0%</b>	3	8,1%
Future harvest	1	4,5%	1	6,7%	2	5,4%
Future earnings	8	<b>36,4%</b>	3	<b>20,0%</b>	11	29,7%
Benefits future generation	3	13,6%	1	6,7%	4	10,8%
Additional acacia forest plantation land	0	,0%	1	6,7%	1	2,7%
Total	22	100,0%	15	100,0%	37	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 3: Descriptive variables of allocated forest plantation land (ha)**

Research villages	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Katu village 4	30	.0	5.0	36.1	1.203	1.3977
Kinh village 6	41	.0	3.0	37.9	.924	.8938

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 4: Benefits plantation forest land allocation \* research village**

The establishment of acacia forest plantations has resulted in benefits for the household	Research village				Total	
	Katu village 4		Kinh village 6			
	Hh	%	Hh	%	Hh	%
Yes	26	89,7%	30	83,3%	56	86,2%
No	3	10,3%	6	16,7%	9	13,8%
Total	29	100,0%	36	100,0%	65	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 5: Specification of plantation FLA benefits \* research village**

Specification of benefits from establishment of acacia forest plantations	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	Hh	%
Income	24	96,0%	29	96,7%	53	96,4%
Land	0	,0%	1	3,3%	1	1,8%
Firewood	1	4,0%	0	,0%	1	1,8%
Total	25	100,0%	30	100,0%	55	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**CHAPTER 6: RURAL LIVELIHOODS IN THE RESEARCH VILLAGES**

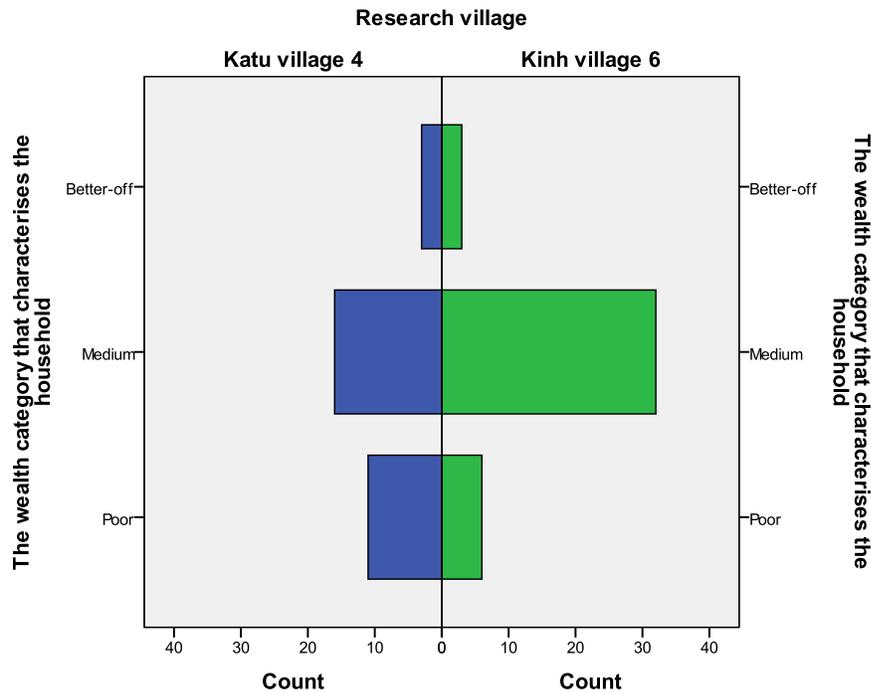
**Paragraph 6.3.1: Human capital in the research villages**

**Figure 6a: Household wealth category \*research village**

Household wealth category	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
Poor	11	36,7%	6	14,6%	17	23,9%
Medium	16	53,3%	32	78,0%	48	67,6%
Better-off	3	10,0%	3	7,3%	6	8,5%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 6b: Distribution of household wealth in the research villages**



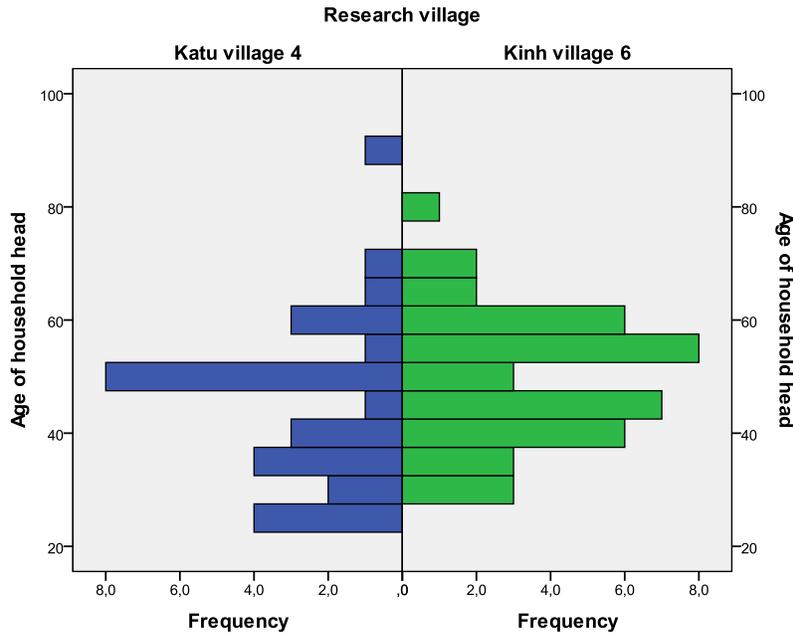
Source: Household survey, Huizinga & van Hoof, 2008

**Figure 7a: Age of household head \* research village**

Age of household head	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
25 to 30 years old	4	13,3%	1	2,4%	5	7,0%
30 to 40 years old	9	30,0%	9	22,0%	18	25,4%
40 to 50 years old	6	20,0%	9	22,0%	15	21,1%
50 to 65 years old	8	26,7%	19	46,3%	27	38,0%
older than 65 years old	3	10,0%	3	7,3%	6	8,5%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 7b: Age distribution of household heads in the research villages**



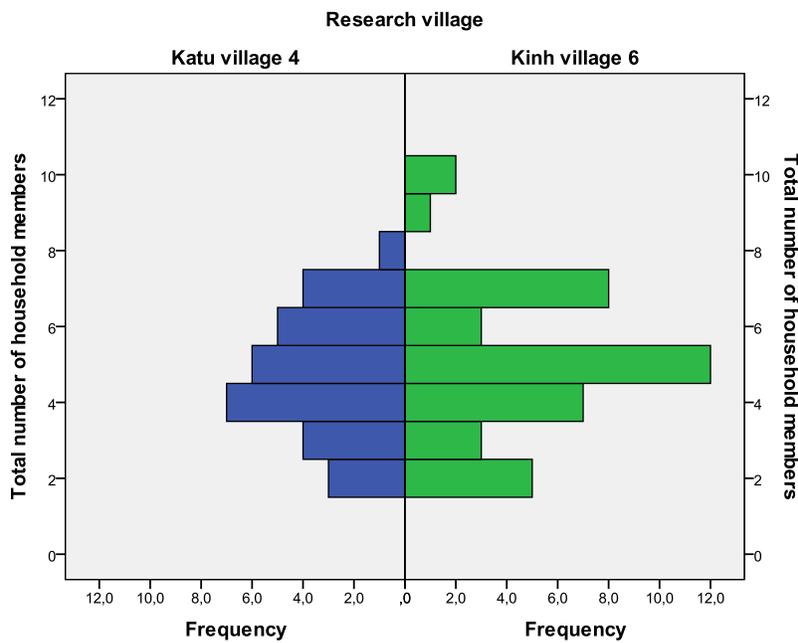
Source: Household survey, Huizinga & van Hoof, 2008

**Figure 8a: Household size \* research village**

Number of household members	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
2	3	10,0%	5	12,2%	8	11,3%
3	4	13,3%	3	7,3%	7	9,9%
4	7	23,3%	7	17,1%	14	19,7%
5	6	20,0%	12	29,3%	18	25,4%
6	5	16,7%	3	7,3%	8	11,3%
7	4	13,3%	8	19,5%	12	16,9%
8	1	3,3%	0	,0%	1	1,4%
9	0	,0%	1	2,4%	1	1,4%
10	0	,0%	2	4,9%	2	2,8%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 8b: Distribution of household size in the research villages**



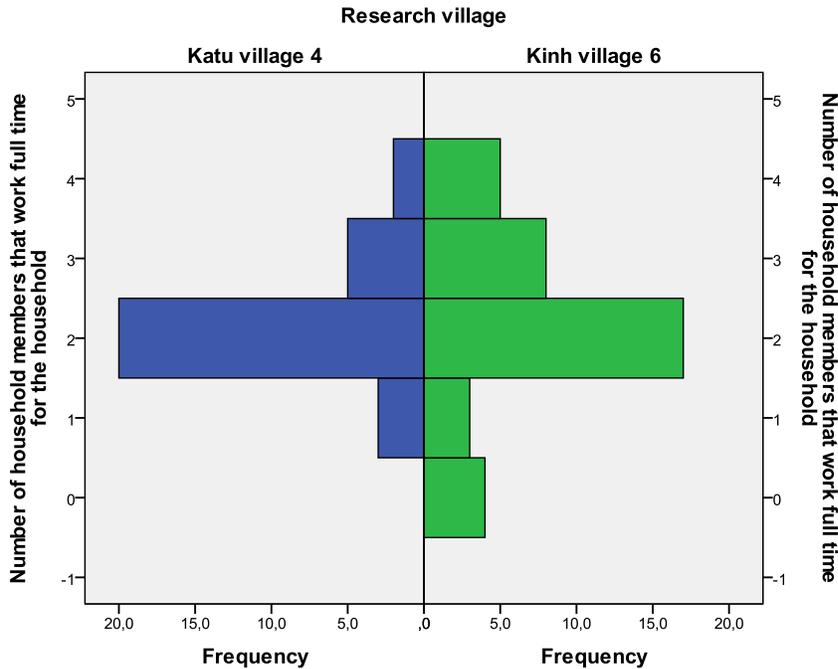
Source: Household survey, Huizinga & van Hoof, 2008

**Figure 9a: Household labour capacity\* research village**

Number of household members that work full time for the household	Research village				Total	
	Katu village 4		Kinh village 6			
	Hh	%	Hh	%	hh	%
0	0	,0%	4	10,8%	4	6,0%
1	3	10,0%	3	8,1%	6	9,0%
2	20	66,7%	17	45,9%	37	55,2%
3	5	16,7%	8	21,6%	13	19,4%
4	2	6,7%	5	13,5%	7	10,4%
Total	30	100,0%	37	100,0%	67	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 9b: Distribution of household labour capacity in the research villages**



Source: Household survey, Huizinga & van Hoof, 2008

**Figure 10: Highest level of education of household head \* research village**

Highest level of education of household head	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
Illiterate	7	23,3%	7	17,5%	14	20,0%
Primary education	11	36,7%	28	70,0%	39	55,7%
Secondary education	12	40,0%	5	12,5%	17	24,3%
Total	30	100,0%	40	100,0%	70	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Paragraph 6.3.2: Physical capital in the research villages**
**Figure 11: Type of house \* research village**

Type of house	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	Hh	%
Timber house	1	3,3%	14	36,8%	15	22,1%
Mud or stone house	29	96,7%	24	63,2%	53	77,9%
Total	30	100,0%	38	100,0%	68	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 12: Household assets \* research village**

Household assets	Research village				Total	
	Katu village 4		Kinh village 6			
	Hh	%	hh	%	hh	%
<i>Communication</i> Radio	4	13,3%	10	24,4%	14	19,7%
Television	25	83,3%	37	90,2%	62	87,3%
<i>Transportation</i> Bicycle	18	60,0%	34	82,9%	52	73,2%
Motorbike	9	30,0%	30	73,2%	39	54,9%

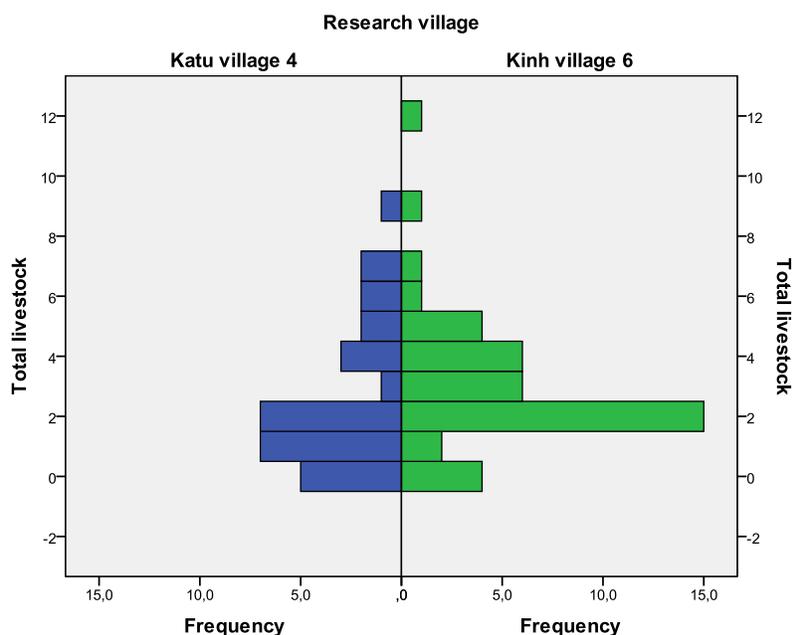
Source: Household survey, Huizinga & van Hoof, 2008

**Figure 13a: Total livestock (cow, buffalo, pig) \* Research village**

	Research village				Total		
	Katu village 4		Kinh village 6				
	hh	%	Hh	%	Hh	%	
Total livestock	0	5	16,7%	4	9,8%	9	12,7%
(cow, buffalo,	1	7	23,3%	2	4,9%	9	12,7%
pig)	2	7	23,3%	15	36,6%	22	31,0%
	3	1	3,3%	6	14,6%	7	9,9%
	4	3	10,0%	6	14,6%	9	12,7%
	5	2	6,7%	4	9,8%	6	8,5%
	6	2	6,7%	1	2,4%	3	4,2%
	7	2	6,7%	1	2,4%	3	4,2%
	9	1	3,3%	1	2,4%	2	2,8%
	12	0	,0%	1	2,4%	1	1,4%
Total		30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 13b: Distribution of livestock (cow, buffalo, pig) in research villages**



Source: Household survey, Huizinga & van Hoof, 2008

**Figure 14: Number of buffalos owned by the household \* research village**

Number of buffalos owned by the household	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
0	15	50,0%	8	19,5%	23	32,4%
1	12	40,0%	19	46,3%	31	43,7%
2	1	3,3%	11	26,8%	12	16,9%
3	1	3,3%	2	4,9%	3	4,2%
4	1	3,3%	1	2,4%	2	2,8%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 15: Number of cows owned by the household \* research village**

Number of cows owned by the household	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
0	15	50,0%	16	39,0%	31	43,7%
1	9	30,0%	12	29,3%	21	29,6%
2	5	16,7%	10	24,4%	15	21,1%
3	1	3,3%	0	,0%	1	1,4%
4	0	,0%	2	4,9%	2	2,8%
5	0	,0%	1	2,4%	1	1,4%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

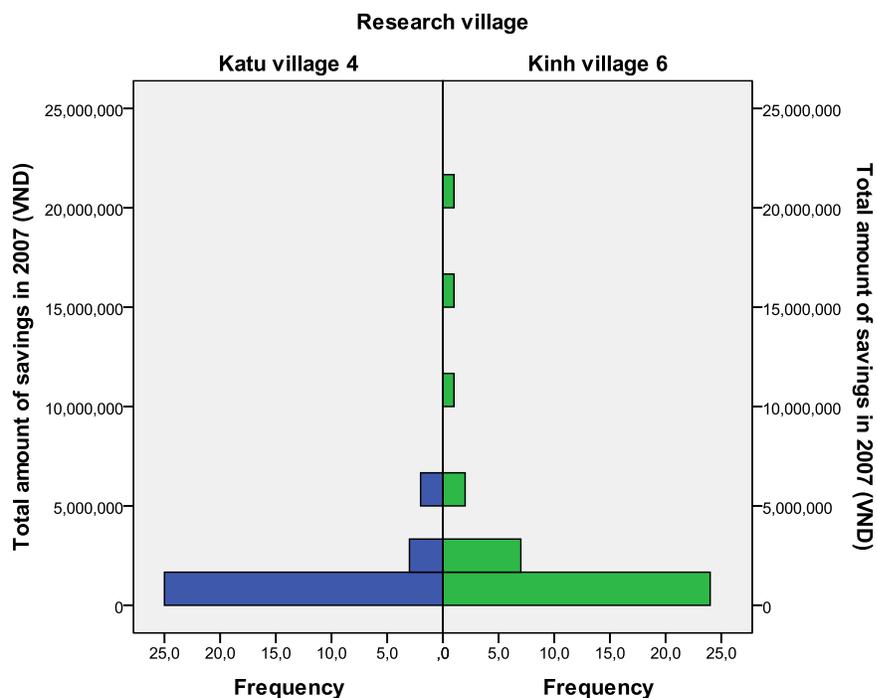
**Figure16: Number of pigs owned by the household \* research village**

Number of pigs owned by the household	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
0	14	46,7%	23	56,1%	37	52,1%
1	7	23,3%	6	14,6%	13	18,3%
2	4	13,3%	10	24,4%	14	19,7%
3	1	3,3%	2	4,9%	3	4,2%
4	3	10,0%	0	,0%	3	4,2%
8	1	3,3%	0	,0%	1	1,4%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Paragraph 6.3.3: Financial capital in the research villages**

**Figure 17: Distribution of household savings in 2007 (VND)**



Source: Household survey, Huizinga & van Hoof, 2008

**Figure 18: Household is borrowing money \* research village**

Household is borrowing money	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
Yes	27	90,0%	31	75,6%	58	81,7%
No	3	10,0%	10	24,4%	13	18,3%
Total	30	100,0%	41	100,0%	71	100,0%

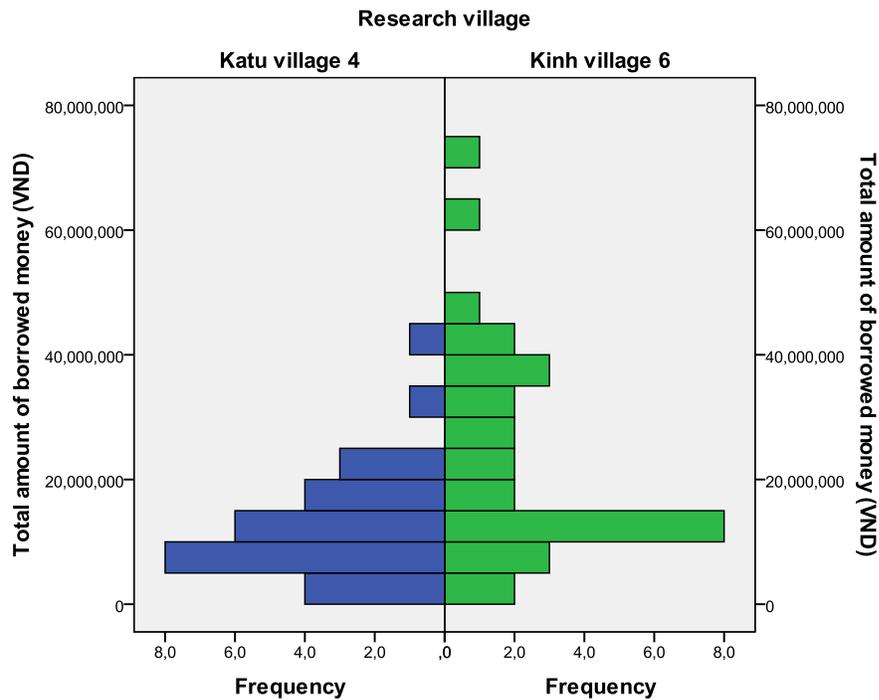
Source: Household survey, Huizinga & van Hoof, 2008

**Figure 19: Purpose of loan \* research village**

Purpose of loan	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
plant rubber	0	,0%	6	19,4%	6	10,3%
plant acacia	0	,0%	1	3,2%	1	1,7%
Husbandry	17	63,0%	22	71,0%	39	67,2%
build house	4	14,8%	1	3,2%	5	8,6%
Production	3	11,1%	1	3,2%	4	6,9%
Study	1	3,7%	0	,0%	1	1,7%
pay off loan	1	3,7%	0	,0%	1	1,7%
fruit trees	1	3,7%	0	,0%	1	1,7%
	27	100,0%	31	100,0%	58	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

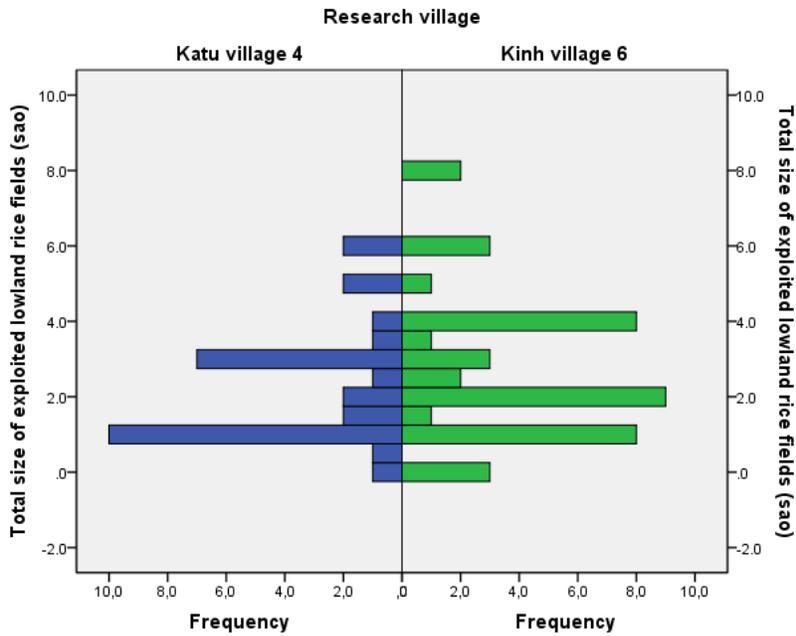
**Figure 20: Distribution of household borrowings in 2008 (VND)**



Source: Household survey, Huizinga & van Hoof, 2008

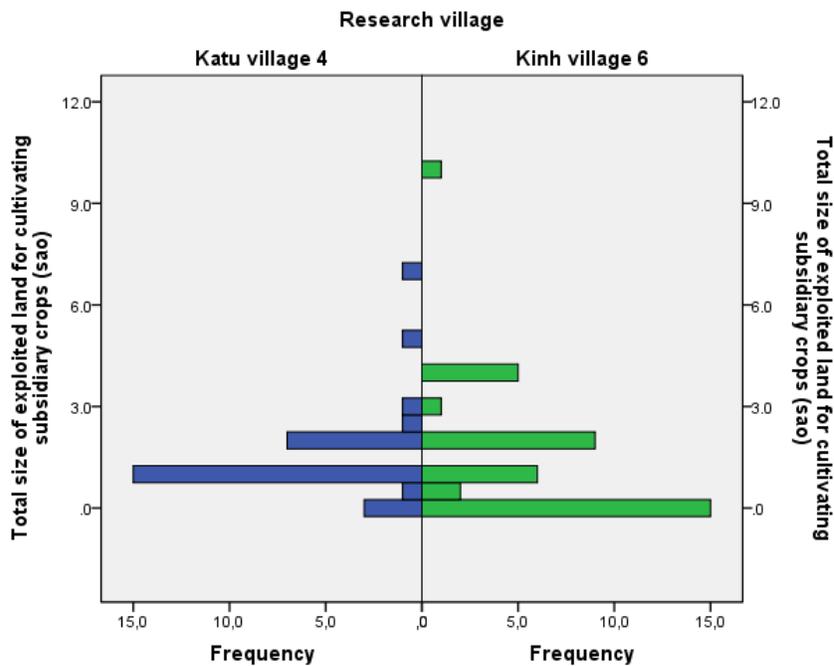
Paragraph 6.3.4: Natural capital in the research villages

Figure 21: Distribution of exploited lowland rice fields (1 sao = 500 m<sup>2</sup>)



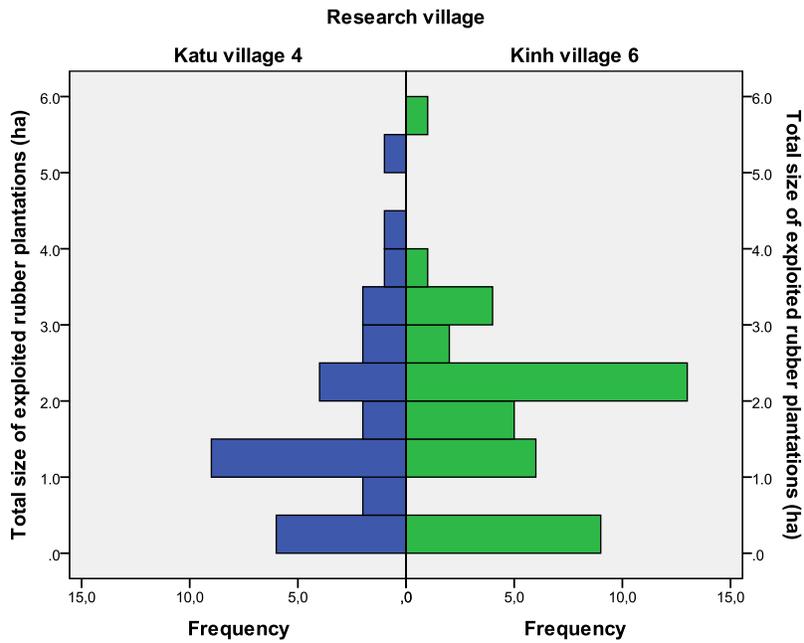
Source: Household survey, Huizinga & van Hoof, 2008

Figure 22: Distribution of exploited land for subsidiary crops (1 sao = 500 m<sup>2</sup>)



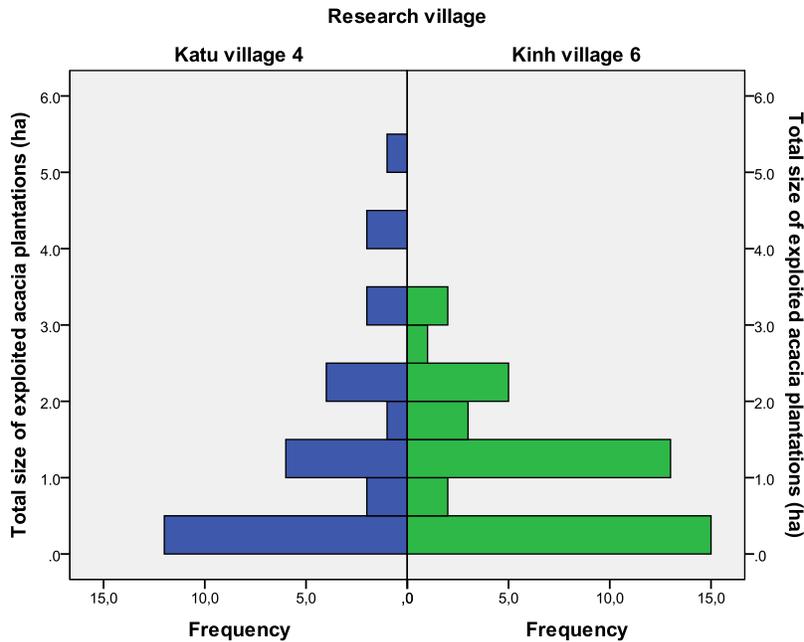
Source: Household survey, Huizinga & van Hoof, 2008

**Figure 23: Distribution of exploited land for rubber plantations (ha)**



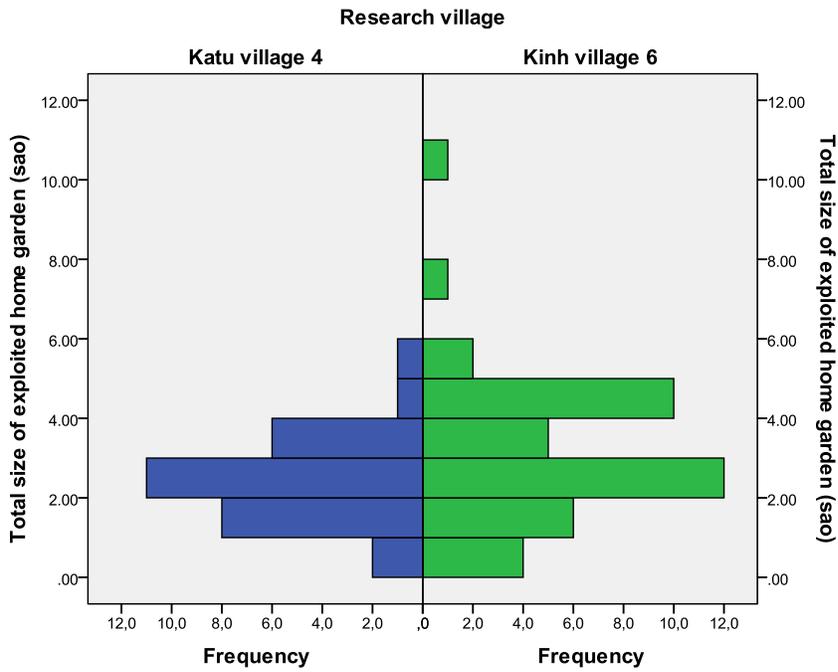
Source: Household survey, Huizinga & van Hoof, 2008

**Figure 24: Distribution of exploited land for acacia plantations (ha)**



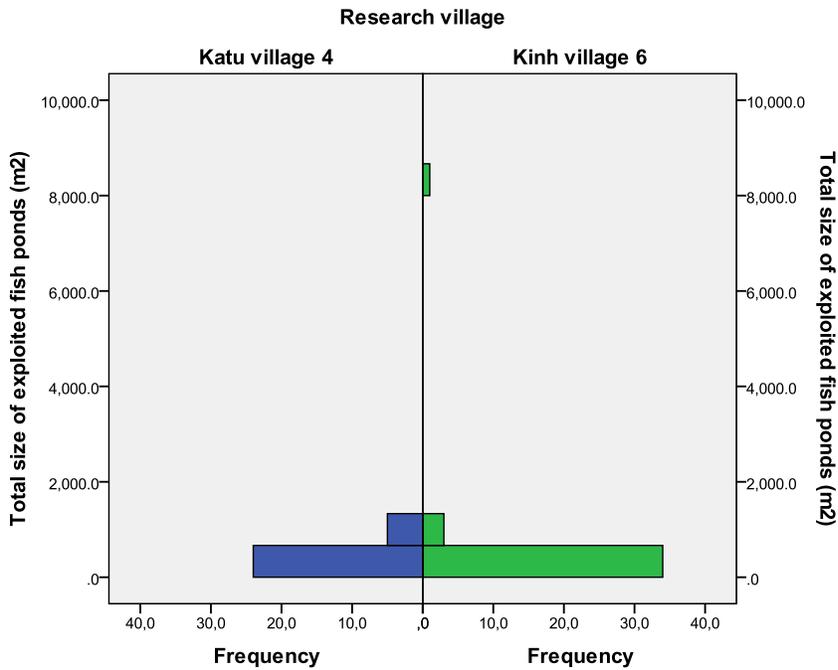
Source: Household survey, Huizinga & van Hoof, 2008

**Figure 25: Distribution of exploited land for home gardens (1 sao = 500 m<sup>2</sup>)**



Source: Household survey, Huizinga & van Hoof, 2008

**Figure 26: Distribution of exploited land for fish ponds (m<sup>2</sup>)**



Source: Household survey, Huizinga & van Hoof, 2008

<b>Paragraph 6.4.1: Agricultural practices in the research villages</b>
---

**Figure 27: Cultivating lowland rice \* research village**

Cultivating lowland rice	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	Hh	%
Yes	28	93,3%	36	87,8%	64	90,1%
No	2	6,7%	5	12,2%	7	9,9%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 28: Cultivating subsidiary crops \* research village**

Cultivating subsidiary crops	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
Yes	29	96,7%	35	85,4%	64	90,1%
No	1	3,3%	6	14,6%	7	9,9%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 29: Home gardening \* research village**

Home gardening	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
Yes	29	100,0%	40	97,6%	69	98,6%
No	0	,0%	1	2,4%	1	1,4%
Total	29	100,0%	41	100,0%	70	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 30: Cultivating cassava \* research village**

Cultivating cassava	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
Yes	23	76,7%	32	78,0%	55	77,5%
No	7	23,3%	9	22,0%	16	22,5%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 31: Cultivating and (in the future) harvesting rubber \* research village**

Cultivating and (in the future) harvesting rubber	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
Yes	22	73,3%	31	81,6%	53	77,9%
No	8	26,7%	7	18,4%	15	22,1%
Total	30	100,0%	38	100,0%	68	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Paragraph 6.4.2: Forest-use practices in the research villages**

**Figure 32: (Before FLA) Exploiting the natural forest \* research village**

Exploiting the natural forest before FLA	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
Yes	14	46,7%	16	39,0%	30	42,3%
No	16	53,3%	25	61,0%	41	57,7%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 33: (After FLA) Protecting and managing natural forest \* research village**

Protecting and managing natural forests after FLA	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
Yes	23	76,7%	14	34,1%	37	52,1%
No	7	23,3%	27	65,9%	34	47,9%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 34: Income from timber harvest in natural forest (VND) \*research village**

Total income earned in 2007 from timber harvest in natural forest (VND)	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	Hh	%
0	24	100,0%	28	87,5%	52	92,9%
2,000,000	0	,0%	1	3,1%	1	1,8%
5,000,000	0	,0%	1	3,1%	1	1,8%
7,000,000	0	,0%	1	3,1%	1	1,8%
20,000,000	0	,0%	1	3,1%	1	1,8%
Total	24	100,0%	32	100,0%	56	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 35: (Before FLA) NTFP collection \* research village**

NTFP collection before FLA	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
Yes	24	80,0%	22	56,4%	46	66,7%
No	6	20,0%	17	43,6%	23	33,3%
Total	30	100,0%	39	100,0%	69	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 36: (After FLA) NTFP collection \* research village**

NTFPs collection	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
Yes	21	70,0%	4	9,8%	25	35,2%
No	9	30,0%	37	90,2%	46	64,8%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 37: Income from NTFPs from the natural forest (VND) \* research village**

Total income from NTFP collection in natural forest in 2007 (VND)	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
0	9	40,9%	35	97,2%	44	75,9%
100,000	1	4,5%	0	,0%	1	1,7%
200,000	3	13,6%	0	,0%	3	5,2%
600,000	1	4,5%	1	2,8%	2	3,4%
1,000,000	4	18,2%	0	,0%	4	6,9%
1,500,000	1	4,5%	0	,0%	1	1,7%
2,000,000	2	9,1%	0	,0%	2	3,4%
5,000,000	1	4,5%	0	,0%	1	1,7%
Total	22	100,0%	36	100,0%	58	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 38: (Before FLA) Firewood collection \* research village**

Firewood collection before FLA	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
Yes	29	96,7%	37	90,2%	66	93,0%
No	1	3,3%	4	9,8%	5	7,0%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 39: (After FLA) Firewood collection \* research village**

Firewood collection after FLA	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
Yes	28	93,3%	36	87,8%	64	90,1%
No	2	6,7%	5	12,2%	7	9,9%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 40: Total size of exploited acacia plantations (ha) \* research village**

Total size of exploited acacia plantations (ha)	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
.0	10	33,3%	15	36,6%	25	35,2%
.1	1	3,3%	0	,0%	1	1,4%
.3	1	3,3%	0	,0%	1	1,4%
.5	1	3,3%	2	4,9%	3	4,2%
.7	1	3,3%	0	,0%	1	1,4%
1.0	6	20,0%	11	26,8%	17	23,9%
1.2	0	,0%	1	2,4%	1	1,4%
1.3	0	,0%	1	2,4%	1	1,4%
1.5	1	3,3%	2	4,9%	3	4,2%
1.9	0	,0%	1	2,4%	1	1,4%
2.0	4	13,3%	5	12,2%	9	12,7%
2.5	0	,0%	1	2,4%	1	1,4%
3.0	2	6,7%	2	4,9%	4	5,6%
4.0	2	6,7%	0	,0%	2	2,8%
5.0	1	3,3%	0	,0%	1	1,4%
Total	30	100,0%	41	100,0%	71	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 41: Household owns RBC for acacia plantation \* research village**

Household owns a RBC for acacia plantation forest land	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	Hh	%
Yes	8	27,6%	9	22,0%	17	24,3%
No	21	72,4%	32	78,0%	53	75,7%
Total	29	100,0%	41	100,0%	70	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 42: Household received acacia seedlings \* research village**

For the establishment of the acacia forest plantation the household received seedlings	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
Yes	1	6,3%	0	,0%	1	2,8%
No	15	93,8%	20	100,0%	35	97,2%
Total	16	100,0%	20	100,0%	36	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 43: Household received fertiliser for acacia plantation \* research village**

For the establishment of the acacia forest plantation the household received fertilizer	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
Yes	0	,0%	1	5,0%	1	2,8%
No	16	100,0%	19	95,0%	35	97,2%
Total	16	100,0%	20	100,0%	36	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 44: Household received credit for acacia plantation \* research village**

For the establishment of the acacia forest plantation the household received credit	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
Yes	0	,0%	1	5,0%	1	2,8%
No	16	100,0%	19	95,0%	35	97,2%
Total	16	100,0%	20	100,0%	36	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 45: Household received training about tree planting \* research village**

For the establishment of the acacia forest plantation the household received training about tree planting and nursing	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	Hh	%	hh	%
Yes	3	18,8%	2	10,0%	5	13,9%
No	13	81,3%	18	90,0%	31	86,1%
Total	16	100,0%	20	100,0%	36	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 46: Year of planting acacia trees on the plantation forest land \* research village**

Year of planting acacia trees on the plantation forest land	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
1995	1	6,3%	0	,0%	1	2,8%
2003	1	6,3%	1	5,0%	2	5,6%
2004	2	12,5%	1	5,0%	3	8,3%
2005	6	37,5%	9	45,0%	15	41,7%
2006	4	25,0%	5	25,0%	9	25,0%
2007	2	12,5%	4	20,0%	6	16,7%
Total	16	100,0%	20	100,0%	36	100,0%

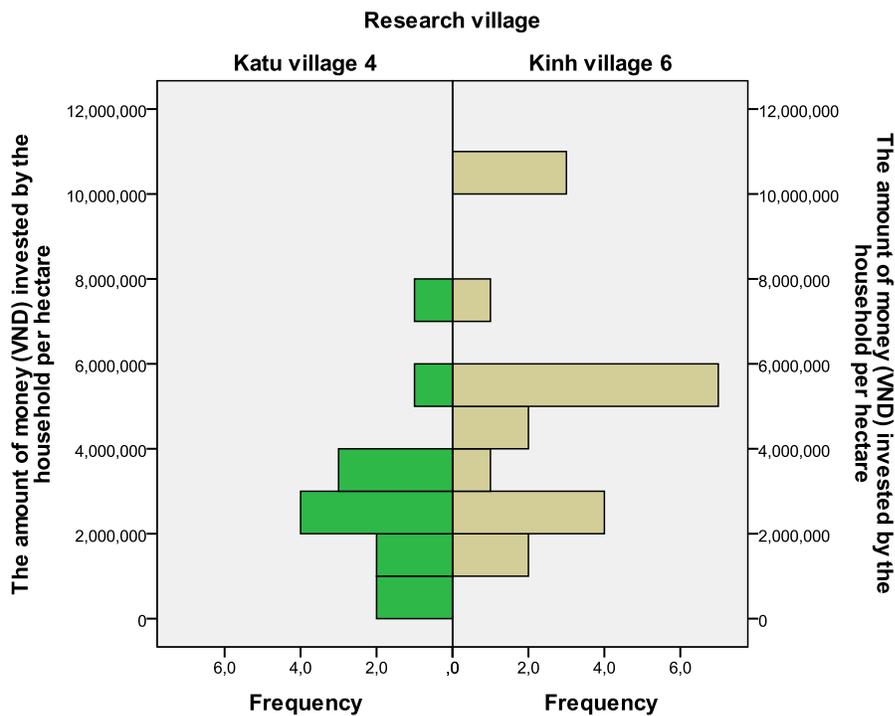
Source: Household survey, Huizinga & van Hoof, 2008

**Figure 47a: Total household investment (VND/ha) in acacia plantation \* research village**

The amount of money (VND) invested by the household per hectare	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
100,000	1	7,7%	0	,0%	1	3,0%
900,000	1	7,7%	0	,0%	1	3,0%
1,000,000	2	15,4%	1	5,0%	3	9,1%
1,500,000	0	,0%	1	5,0%	1	3,0%
2,000,000	1	7,7%	4	20,0%	5	15,2%
2,500,000	3	23,1%	0	,0%	3	9,1%
3,000,000	2	15,4%	1	5,0%	3	9,1%
3,500,000	1	7,7%	0	,0%	1	3,0%
4,000,000	0	,0%	2	10,0%	2	6,1%
5,000,000	1	7,7%	7	35,0%	8	24,2%
7,000,000	1	7,7%	1	5,0%	2	6,1%
10,000,000	0	,0%	3	15,0%	3	9,1%
Total	13	100,0%	20	100,0%	33	100,0%

Source: Household survey, Huizinga & van Hoof, 2008

**Figure 47b: Distribution of investments in acacia plantations (VND/ha)**



Source: Household survey, Huizinga & van Hoof, 2008

**Figure 48: Wealth category of households without acacia plantation \* research village**

Wealth category of households without acacia plantation	Research village				Total	
	Katu village 4		Kinh village 6			
	hh	%	hh	%	hh	%
Poor	6	60,0%	2	13,3%	8	32,0%
Medium	3	30,0%	12	80,0%	15	60,0%
Better-off	1	10,0%	1	6,7%	2	8,0%
Total	10	100,0%	15	100,0%	25	100,0%

Source: Household survey, Huizinga & van Hoof, 2008