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Vulnerability and Risk Management of Rural Farm Households in Northern Vietnam

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List of Abbreviations

%	Percent
€	Euro Currency
ACA	Adaptive Conjoint Analysis
ADB	Asian Development Bank
AIDS	Acquired Immune Deficiency Syndrome
ASEAN	The Association of Southeast Asian Nations
BC	Before Christ
CA	Conjoint Analysis
CBC	Choice Based Conjoint Analysis
CBFM	Community-based Forestry Management
chap.	Chapter
CHS	Commission on Human Security
DFID	Department for International Development
DFG	Deutsche Forschungsgemeinschaft
Ed.	Editor
Eds.	Editors
EIA	Environmental Investigation Agency
GDP	Gross Domestic Product
HDI	Human Development Index
HDR	Human Development Report
HEPR	Hunger Eradication and Poverty Reduction
HH	Household
HIV	Human Immunodeficiency Virus
HND	Hmong National Development, Inc.
HPI	Human Poverty Index
HSN	Human Security Network
IAAE	International Conference of Agricultural Economists
IAMO	Institute of Agricultural Development in Central and Eastern Europe
IFSA	International Farming Systems Association
ILO	International Labor Organization
ISIS	Institute of Strategic and International Studies
MDGs	Millennium Development Goals
MOLISA	Vietnamese Ministry of Labour, Invalids and Social Affairs

OECD	Organisation for Economic Co-operation and Development
PDR	People's Democratic Republic
PPP	Purchasing Power Parity
PRA	Participatory Rural Appraisal
SARS	Severe acute respiratory syndrome
SEDP	Socio-Economic Development Plan
SFB	Sonderforschungsbereich
SLF	Sustainable Livelihood Framework
SNA	Social Network Analysis
STDs	Sexually transmitted diseases
TB	Tuberculosis
UK	United Kingdom
UN	The United Nation
UNAIDS	The United Nations Joint Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund
USA	United States of America
US\$	US Dollar
VBARD	Viet Nam Bank for Agricultural and Rural Development
Viet Nam	Vietnam*
VND	Vietnamese Dong
WHO	World Health Organisation
WWF	World Wide Fund for Nature

* In general, both spellings, 'Viet Nam' and 'Vietnam' are common. In this study, 'Vietnam' is used.

1 Introduction

Life in the world's poorest countries is plagued by many risks that can result in consumption and income shocks. Since access to formal insurance services is hardly available in developing countries, subsistence farmers face many types of dangers in their everyday life. While there has been a surge of interest in measuring poverty and vulnerability¹ in developing countries, little is known, however, about the risks and risk management strategies of vulnerable households in the Uplands of Southeast Asia². With few exceptions, the Uplands are economically disadvantaged and are often politically and institutionally marginalized (Heidhues and Rerkasem 2006, Pandey 2000, Coxhead 2002, Zeller et al. 2010).

1.1 Research Background, Objectives and Hypotheses

Over the past 20 years, the Vietnamese Government has achieved remarkable results in poverty reduction, which were mainly accomplished by the launching of the '*doi moi*' reform process in 1986. Although Vietnam has made good progress concerning the implementation of the United Nations' Millennium Development Goals (MDGs) and poverty levels are already meeting the standards, 28.9 per cent of the total population (85 million in 2007) are still living below the national poverty line (UNDP, 2007). Regional disparities are apparent and there are still many challenges, including the reduction of child mortality as well as the enhancement of maternal healthcare and the quality of primary education (United Nations Vietnam, 2009). Major improvements are necessary, especially in the mountainous, rural areas of Northern Vietnam, which are mainly populated by ethnic minorities. According to the General Statistics Office of Vietnam the poverty rate in this particularly underdeveloped region was still 49 per cent in 2006, by far the highest rate in Vietnam.

Focusing on the Uplands of Northern Vietnam³, it may be summarized that farming remains the most important economic sector and the population in this region is increasing fast. To date, the natural resources have been depleting as well as the environment has been degrading seriously due to unsustainable expansion of agriculture on sloping lands.

¹ The concept of vulnerability, including its linkages to poverty and risk will be introduced in Chapter 3. Furthermore, Shakya (2009: 40-41) provides a detailed review of "Theoretical Approaches to Vulnerability in the Context of Development Research" (cf. Annex 1).

² This region covers most of the Philippines, Indonesia, Thailand, Myanmar, Cambodia, Lao People's Democratic Republic as well as Vietnam, and is inhabited by many different ethnic groups.

³ This paragraph is based on World Bank (2006: 32).

All in all, poor and near-poor ethnic minority households are vulnerable to a broad range of risks, which can have devastating effects on their livelihoods and well-being. As formal insurance schemes do not yet contribute to reduce risk and its consequences, vulnerable households have developed sophisticated risk management strategies. Hence, this study concentrated its research on the livelihoods of vulnerable rural households, and their adaptive and coping strategies regarding risks. While adaptive strategies are ex-ante strategies and aim at securing income even in times of crises, coping strategies are a reaction to acute risks and are employed ex-post. Informal social networks and semi-formal micro-insurance schemes count to the former strategies and either keep vulnerability levels constant or even reduce them. The latter strategies try to smooth consumption, nevertheless, often at the expense of the future livelihood, thereby increasing vulnerability.

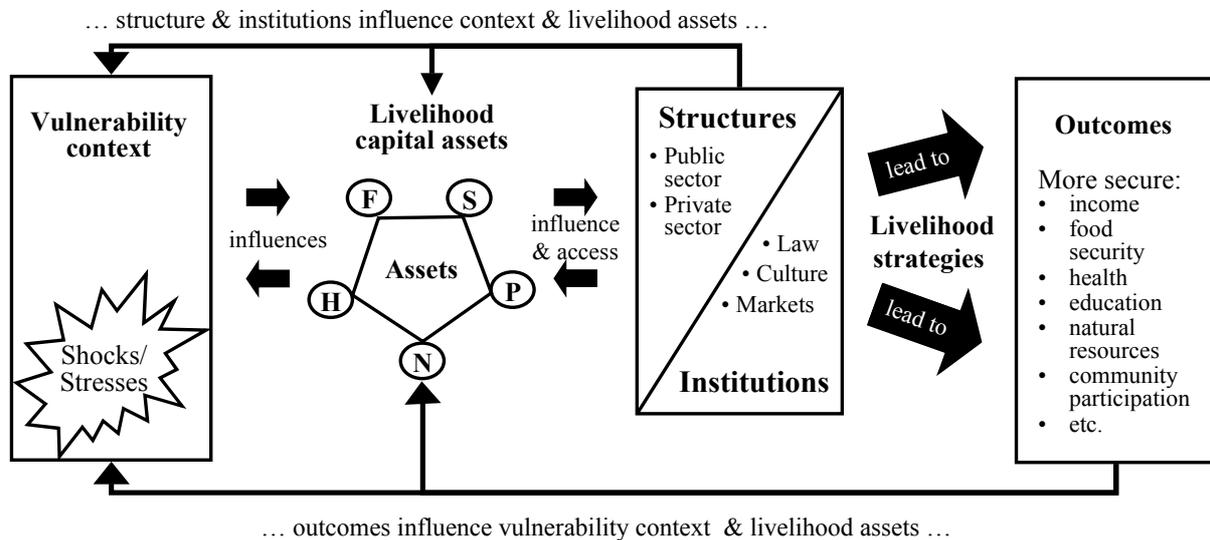
In order to reach the overall objective to observe, analyze and better understand the highly diverse livelihood strategies of vulnerable rural households in the Uplands of Northern Vietnam, this study identifies risks and shocks that rural ethnic minority households face as well as their adaptive and coping livelihood strategies. Furthermore, the role of informal social networks is observed with the help of seven case studies. Finally, the potential demand for a formal or semi-formal microinsurance scheme in the area of livestock insurance is analyzed.

The Sustainable Livelihood Framework (SLF) of the Department for International Development (DFID), UK (DFID 1999) (see Figure 1.1) was applied as an analytical tool to identify and assess risks and risk management strategies of vulnerable rural livelihoods in the Uplands of Northern Vietnam. It looks into livelihood strategies (i.e. the sum of all different activities that people are doing in the context of their livelihood) in a given vulnerability context (the frame conditions). People have access to five forms of so-called 'livelihood capital assets', namely natural, physical, human, social, and financial assets.⁴ These resources, which are displayed in the '*capital asset pentagon*' influence and determine the household's access to the socio-economic structure of society at large and their formal and informal institutions. The capital assets in combination with the structures and institutions determine the available set of livelihood strategies and achieve certain outcomes (Sanderson, 1999).

⁴ Following Buchenrieder et al. (2003: 675) "Clearly, equating 'assets' theoretically with varieties of 'capital' through the 'asset pentagon' in Figure 1.1 distorts the understanding (1) of capital and (2) of poverty. On the first point, capital is properly a social relation between people, not an attribute of rich and poor, respectively. On the second point, attention is displaced from the inequalities of power that must surely be invoked to explain the persistence or the worsening of poverty (Murray, 2001). For a powerful critique of the notion of 'social capital' and 'human capital' see Fine (2001)."

These outcomes as well as the societal structure and institutions can have positive or negative impacts on the people's livelihoods, thus the feedback loops in Figure 1.1.

Figure 1.1 Sustainable Livelihood Framework and Vulnerability Context



Notes: 'H' represents human capital, 'N' represents natural resources, 'P' represents physical capital, 'S' represents social capital, 'F' represents financial capital.

Source: Buchenrieder et al. (2003).

The central hypotheses of this research on livelihood strategies in general and adaptive strategies such as insurance in particular are that they (1) have the potential to reduce livelihood vulnerability and that (2) the differentiated knowledge of livelihood strategies is crucial for a better understanding of the reasoning behind the exploitation of livelihood assets, such as natural resources or physical assets in the form of livestock, despite the negative medium and long-term effects.

1.2 Design of the Study

The research for this study was carried out within the framework of the German-Thai-Vietnamese Collaborative Research Program 'Sustainable Land Use and Rural Development in Mountainous Regions of Southeast Asia' (SFB 564), also known as *The Uplands Program*⁵. Interdisciplinary research projects rely strongly on publications in refereed journals and Annex 2 presents an overview of already conducted as well as forthcoming publications of data of this subproject F2.2.

⁵ The funding from the Deutsche Forschungsgemeinschaft (DFG) and the co-funding from the Ministry of Science, Technology, and Environment of Vietnam is gratefully acknowledged.

As mentioned above, this research focuses on the livelihoods of vulnerable rural households, and their adaptive and coping strategies regarding risks. Methodologically, this research applied qualitative and quantitative survey instruments to generate information on the following major research issues: Risk Management, Vulnerability, Informal Social Networks, Ethnic Minorities, Gender, Human Security and Health, Sustainability as well as Livestock Insurance. Once again, the SLF and the five livelihood capital assets respectively, were utilized to structure the information on these major research issues. Besides identifying the linkages among these issues, the importance of the respective capital assets on these issues was examined.

1.3 Research Area, Target Group and Data Collection

In 2004 and 2005, quantitative and qualitative field research took place in ten villages, in Ba Be and Pac Nam districts in Bac Kan province, as well as in Yen Chau district in Son La province (see Table 1.1). Both provinces are located in the mountainous regions of Northern Vietnam and belong to the poorest provinces of the country.

Table 1.1 Overview of Research Area and Sample

Province/ District	Commune	Village	Ethnic Group	Number of HH/ village	Number of selected HH ⁰ / ACA	
Province: Bac Kan	Dia Linh ¹	Pac Nghe 1*	Tay	80	34	31
	Nghien Loan ²	Khau Nen**	Nung	41	20	18
District: Ba Be ¹ & Pac Nam ²	Xuan La ²	Thom Meo*,**	Tay	93	38	39
		Khoui Khi	Dao	45	27	/
Province: Son La	Sap Vat	Sai *,**	Thai	84	37	26
		Na Pa*	Thai	60	/	/
District: Yen Chau	Chieng Hac	Dong**	Thai	52	22	20
		Bo Kieng**	Hmong	30	12	/
		Than*,**	Kho Mu	40	7	21
	Chieng Pan	Tat Heo**	Thai	16	6	/
Interviewed HH in total:					203	155

Note: ⁰ for general household interviews; * refers to the use of Participatory Rural Appraisal tools; ** indicates that in those villages a Social Network Analysis was carried out; HH = Households; ACA = Adaptive Conjoint Analysis;

General household interviews with a structured questionnaire were conducted in 203 households and computer-based individual interviews (in the context of an *Adaptive Conjoint*

Analysis (ACA)) in 155 households respectively. In addition, 38 interviews were carried out within the framework of a *Social Network Analysis* (SNA) and 44 male and female respondents joined the PRA sessions. More details concerning research area and ethnic groups are listed in Table 1.1 above.

Livelihoods research is essentially carried out at the micro- as well as the meso-level that is at the level of households and communities as well as at the institutional level of local governments. Data concerning vulnerability and risk management of farm households were collected at different administrative levels in both provinces. Key informant interviews with officials of so-called mass organizations (e.g. the women's union or farmer's union) and political cadre at the commune and district level provided general information on the research region and gave hints on common risks that rural households usually face. Special focus was laid on difficulties concerning livestock as well as information on access to public services (e.g. financial, extension, education, health care etc.) and differences concerning the wealth strata of rural livelihoods.

Secondary data from non-governmental organizations (NGOs), development projects and insurance companies were collected on issues such as risk management, livestock insurance and social networks. Semi-structured interviews with staff members at all hierarchical levels were conducted in Hanoi and Ho Chi Minh City.

1.4 Organization of the Dissertation

This thesis is organized in a cumulative style. It is composed of five individual articles, which have been published in or submitted to different peer-reviewed journals and books.

Whether a household finds itself in poverty in a particular period depends on the assets and resources it possesses and how it chooses to allocate them. Hence, this research is based on the *capital asset pentagon* of DFID's SLF (cf. Figure 1.1) and each of the following articles is focusing on the vulnerable household's access to and utilization of specific capital assets. All in all, the thesis is structured in seven chapters, including this introduction (Chapter 1).

Starting with natural capital assets, Chapter 2 presents "Linkages between Poverty and Sustainable Agricultural and Rural Development in the Uplands of Southeast Asia". Based on the review of different case studies, three explanatory approaches for land use change and agricultural and rural development are distinguished.

Chapters 3 and 4 are analysing the target group's key resources, namely financial and physical capital assets. While Chapter 3 "Risk Management Strategies of Vulnerable Rural Households in Southeast Asia (...)" is introducing the concepts of poverty and vulnerability as well as

presenting major research results concerning current risks and risk management strategies, Chapter 4 is focusing on livestock insurance. Methodically, the concept of vulnerability to poverty lays the analytical framework in Chapter 3. Besides extensive literature review, own empirical data was analyzed. Chapter 4 “Laptop, Livestock Drawings and Ricewine: A Demand Analysis for Livestock Insurance in Northern Vietnam”, is based on field research conducted in one hundred and fifty five (155) farm households of different ethnic minority groups. Methodically, novel interactive computing tools were employed and an *Adaptative Conjoint Analysis (ACA)* was implemented.

Next, focusing on human capital, Chapter 5 introduces “Health and Poverty as Challenges for Human, Health and Livelihood Security: Two Case Studies on Northern Vietnam and Bangladesh”. Methodically, this chapter is based on extensive literature review of the concepts of Human, Health and Livelihood Security as well as the authors’ own research results, which are illustrated in the two case studies.

Chapter 6 is related to households’ access to social capital, particularly the utilization of social networks as means of risk management. Results are received from a *Social Network Analysis (SNA)* conducted among different ethnic minority households. Finally, based on the results of the empirical investigation as well as on extensive literature review concerning the utilization of selected capital assets in the respective chapters, final conclusions are drawn in Chapter 7.

2 Linkages between Poverty and Sustainable Agricultural and Rural Development in the Uplands of Southeast Asia⁶

This chapter discusses sustainable development in the disadvantaged upland areas of Southeast Asia. Based on the review of case studies from Cambodia, Laos, Thailand, Vietnam, and Indonesia, three explanatory approaches for land use change and agricultural and rural development are distinguished.

2.1 Explanatory Approaches to Sustainable Development Linking Poverty Reduction with Economic Growth and the Environment

It is generally agreed that “sustainable development” as defined by the Brundtland Report (WCED 1987:43), i.e., “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”, rests on three pillars: biodiversity and resource conservation; economic development; and poverty reduction.

Many countries in Southeast Asia have an exceptional biodiversity with a very high concentration of endemic species (Myers et al. 2000). This biodiversity is severely threatened by human activities, because the species are concentrated in areas where rural poverty is widespread (Tonneijck et al. 2006, Snel 2004). Therefore, biodiversity conservation, economic development and poverty reduction should be addressed simultaneously (Adams et al. 2004, Coxhead 2003). However, in practice many projects aiming at the integration of conservation and equitable development tend to bring unsatisfactory results. For upland areas where sustainable development is intimately linked to forest use and conservation the hypothesis that income generation from forest products encourages sustainable use and conservation of forests, while at the same time alleviating poverty, is not confirmed by evidence; benefits to both, conservation and poverty alleviation have not yet been convincingly documented (Fisher 2000 and Gilmour et al. 2004).

A number of more recent studies explored the underlying factors of agriculturally driven land use change, and its interaction with deforestation, biodiversity loss, poverty, inequality, and economic growth (see for example, Kaimowitz and Angelsen 1998; Tonneijck et al. 2006,

⁶ This section is based on the following article: “Linkages between poverty and sustainable agricultural and rural development in the uplands of Southeast Asia”, written by Manfred Zeller, Tina Beuchelt, Isabel Fischer and Franz Heidhues. It was published 2010 in T. Tschardt et al. (Eds.): *Tropical Rainforests and Agroforests under Global Change, Environmental Science and Engineering*, pp 511-527, Springer Verlag, Berlin, Heidelberg (www.springerlink.com).

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Pham 2005). Modelling the relationships between changing natural environments to agricultural production systems and biodiversity, Tonneijck et al. (2006) found out that the relation between biodiversity conservation and agriculture depends on the livelihood and income improvement strategy people embark on in rural areas. Of the three main strategies, intensification of agriculture, diversification of rural income sources, and expansion of agricultural production, the expansion of land to increase agricultural production would result in the greatest loss of biodiversity. They estimate that up to 80% of species diversity would be lost due to full conversion because even in low-input production systems species diversity is below 20%. Therefore, the best strategy to conserve biodiversity is to intensify agricultural production on a limited area, leaving the remainder untouched. Srivastava et al. (1998) emphasize that agricultural intensification is even possible while conserving and enhancing biodiversity in that same area; this requires proper agricultural practices, a supportive policy environment and institutional development.

Earlier studies also conclude that intensification of agriculture and rural income diversification through enhanced market access, creation of employment in rural areas, and technical progress in smallholder agriculture can stabilize forest frontiers by enabling smallholder farmers and rural households to earn sustainable incomes. For example, Deininger and Minten (1999), Shively (1991), Zeller et al. (2000) as reviewed by Maertens et al. (2006) find that irrigation development with subsequent increases in the level and stability of crop yields significantly reduces forest clearing.

There are also a number of studies that show that improved access to agricultural markets and technology as well as roads have an accelerating effect on forest clearing (Maertens et al. 2006). Indeed, the literature on the effect of improved technology on deforestation and agricultural land expansion is – according to Kaimowitz and Angelsen (1998) - divided into two approaches with quite opposite policy conclusions. The “population approach” based on subsistence models identifies population growth, hunger and poverty linked to local conditions of lacking market access and low levels of technology as the main drivers of agricultural expansion into upland and forest areas. Expansion into these areas leads to deforestation and soil degradation while productivity levels remain low. According to this approach, investment in human capital and technological progress through research and appropriate pro-poor technologies would result in higher agricultural productivity, and thus induce farmers to crop less land for meeting subsistence needs. However, this land-saving effect of agricultural technology has been much larger in lowland compared to upland areas as technological progress, in particular for rice, has been much faster for irrigated lowland areas

compared to upland areas in Southeast Asia (Heidhues and Rerkasem 2006, von Uexkull 1998).

The “market-based approach” (Kaimowitz and Angelsen 1998), on the other hand, emphasizes the role of access to markets, institutions and technology for enhancing the profitability of agriculture as the main driver for agricultural expansion. Favourable local conditions provide smallholder farmers access to inputs and markets. While agricultural production is increased and poverty rates are falling, the environmental degradation may increase. Therefore, the pro-poor policies related to human capital, infrastructure, access to markets and institutions can lead only to sustainable development when they are coupled with policies protecting the environment and providing payments for ecological services.

These two approaches, however, do not adequately capture the governance issue linked to large-scale logging by national and multinational firms, followed by the expansion of plantations such as oil palm in Indonesia and rubber in Laos. We therefore distinguish a third explanatory approach which we term the “governance approach”. Here, we recognize institutional and power factors as well as individual or collective greed, corruption and policy failure playing the pivotal role in the conversion of forested land for plantation agriculture. Not smallholders are the key actors, but large-scale corporations colluding with national or local government. This type of agricultural expansion can result in increased marginalization of indigenous ethnic groups, possibly also worsening their poverty situation if they do not benefit as wage workers or outgrowers from plantation agriculture. Additionally, a large-scale destruction of natural habitats occurs. Adequate policy response would be to fight corruption, to strengthen transparent decentralized, community-based systems, to induce national reforms in order to improve governance, to strengthen the NGO/ civic sector, and to give a political voice to the poor and marginalized groups.

Depending on which of the three explanatory approaches best describes the underlying causes of land use change and related changes in socio-economic and environmental development, the preferred policy mix also will differ. In our review of case studies, we seek to identify which of the three approaches explains best the observed development. In our view, the three approaches can – depending on the conditions of a particular region – be useful in explaining the linkages between agricultural development, environment and poverty (Table 2.1).

Table 2.1 Major Explanatory Approaches for Agricultural Expansion in Southeast Asia

Type of approach	Underlying drivers	Actors	Local conditions	Result	Policy responses
Population approach	Poverty, food insecurity	Smallholders	Low level of technology, lack of political voice and market access	Deforestation, soil degradation, expansion of agric area at low levels of productivity	Agricultural research, investment in human capital, pro-poor technology policies
Market-based approach	Increased market access and improved infrastructure/technology raise profitability in agriculture	Smallholders	Smallholder farmers obtain access to inputs and markets	Agricultural intensification, falling poverty rates, but environmental degradation like in population approach if not coupled with policy interventions to protect environment	Pro-poor policies related to human capital, infrastructure, access to markets and institutions, but coupled with policies protecting the environment (e.g. community-based forestry, protection of parks, agricultural extension), and providing payments for ecological services
Governance approach	Institutional factors and poor governance lead to the marginalization of certain social/ethnic groups and their traditional land rights, and favour external investors and migrants	Large-scale companies	Lack of decentralized decision-making and local voice/control, corruption, collusion, and strategic alliances by the powerful	Increased marginalization of indigenous ethnic groups, possibly rising poverty levels if these groups do not benefit as wage workers or outgrowers from plantation agriculture. Large-scale destruction of natural habitats	Fight corruption, strengthen transparent decentralized, community-based systems, national reforms improving governance, strengthening of NGO/ civic sector, and political voice of the poor/marginalized

Source: Own compilation

2.2 Case Studies of Linkages between Poverty, Environment and Economic Growth in Upland Agriculture of Southeast Asia

Our hypothesis in reviewing the following case studies is that policies for sustainable development are doomed to fail if they are not properly addressing the underlying drivers of agricultural and rural development and related land use change. As the economic, social and institutional conditions and natural characteristics vary widely, so must the policies. In section 2.2.1, we first review findings from meta-analyses on land use change that support this view. Second, the diverse underlying drivers can be broadly attributed to the three explanatory approaches as shown in section 1, each requiring different policies.

2.2.1 Upland Southeast Asia – an Overview

The upland areas of Southeast Asia are ecologically, economically and socio-culturally heterogeneous and hence affected by various pressures. Once richly endowed, Southeast Asian countries have in varying degrees undergone natural resource degradation and depletion, which is caused by the interplay of population and state-promoted economic growth (Heidhues and Rerkasem 2006, ADB 2000, FAO 2007). About one third of the population (80 million out of 200 million people) in the Mekong region -including Cambodia, Lao PDR, Vietnam, Myanmar and Thailand- is poor (Sunderlin 2004). According to Dauvergne (1999, cited in ADB 2000), environmental degradation tends to mainly affect the poor who live in remote areas. They frequently suffer from polluted and unsafe water, inadequate sanitation, erosion and flooding. The livelihoods of the rural poor often depend on forest resources to meet their subsistence needs. Even though there has been very little research on the poverty alleviation potential of community-based forestry management (CBFM) in Southeast Asia so far, it is seen as a way to improve the poor's livelihoods - if supported by policy change (Sunderlin 2004).

Fox and Vogler (2005) summarize the results of eight case studies from Thailand, Yunnan (China), Vietnam, Cambodia and Lao PDR. Research results revealed that land cover has been stable and swidden cultivation has remained the dominant land-use practice during the last 50 years even though the countries tried to control swidden cultivation through different policies, e.g. banning shifting cultivation, declaring forest reserves or implementing resettlements. Swidden cultivation is performed mainly by poor smallholders in Southeast Asia. Here, the population approach considering poverty as a causal factor of land use change and agricultural expansion largely explains the development.

Geist and Lambin (2001, cited in Fox and Vogler 2005) conducted a meta-analysis of 152 sub-national cases of tropical deforestation, 55 of these were from Asia. A major result of their study was that the causes and drivers of land cover change cannot be reduced to a single variable or to even a few variables. Geist and Lambin (2001) as well as Fox and Vogler (2005) show that most cases of agricultural expansion into forests were driven by multiple causes, with economic factors playing a major role, followed by policy and institutional, technological, socio-political or cultural, and demographic factors (Geist and Lambin 2001). According to FAO (2007), most Southeast Asian countries have updated their forestry policies in the past 15 years, creating a legal basis to implement sustainable forest management. However, national statistics on income, employment and production of the forestry sector only focus on the formal sector, while data on the informal sector is still lacking. People in the informal sector are usually poor and therefore lack the necessary resources to practice sustainable forest management. They often do not have land and/or forest rights, which make the collection of wood and other forest products 'illegal'. Moreover, large-scale illegal logging, which is (amongst others) enabled through corrupt government officials and high ranking members of the military, leads to a continuous decline of primary forests. While destroying the livelihoods of the rural poor, the benefits of the illegal transactions are shared between logging companies and government officials⁷. This situation suggests that the governance approach provides the most useful base for proper policy design.

2.2.2 Cambodia and Lao PDR

Although Cambodia has twice the number of people than Lao PDR, the poverty characteristics are similar. In the Human Development Report (HDR) 2007/2008 Cambodia and Lao PDR are ranked 131 and 130 respectively, out of 177 countries (UNDP 2007a). Like in other Southeast Asian countries, the majority of the people in Cambodia and Lao PDR are living in rural areas and depend on agriculture and forestry for their livelihood.

Cambodia has one of the world's highest deforestation rates, its primary rainforest cover decreased from over 70 percent in 1970 to 3.1 percent in 2006. Sokh and Lida (2001) as well as Sunderlin (2004) state that the development of CBFM in Cambodia is affected by various obstacles, including unclear and insecure tenure rights, lack of land use planning and benefit sharing arrangements. Extension for CBFM is fragmented and limited in scale and many

⁷ More details on 'illegal logging' are provided by EIA and Telapak (2008) and FAO (2007). WWF (2008) also analyses the role of Southeast Asia and China related to illegal wood exports to the European market.

ongoing projects lack proper evaluation or monitoring. Hence, the support of foreign donors and NGOs is considered crucial due to weak government financial resources, institutional and personal capacity.

In Lao PDR, CBFM mainly concentrates on production forests and benefit sharing arrangements for village's access to a portion of timber wealth. There are also some reforestation efforts included. Unlike in Cambodia, central authorities have a strong role in promoting and administering community forestry, with support from a limited number of international organizations and non-governmental organizations (NGOs) (Braeutigam 2003). In both countries, Braeutigam (2003) identified the lack of capacity in government services as one of the main obstacles for a successful implementation of the national community forestry program.

In Lao PDR, land use planning and land allocation programs are closely tied to CBFM. While the goal of these programs is to provide tenure security for rural households, to reduce shifting cultivation, and to conserve forest resources these programs prove not to be successful for disadvantaged groups and even had negative impacts on rural communities through reducing the available agricultural areas (Braeutigam 2003). Also Lestrelin et al. (2005), Fox (2000, cited in Lestrelin 2005) and Chamberlain (2002) identify the role of government policies like the relocation and the implementation of the Land-Forest Allocation program as one of the major causes of poverty, depriving people of their land and customary land use practices.

In addition, illegal logging in Cambodia and Lao PDR is a worrying issue. A report from the Hmong National Development, Inc. (HND 2008) states that in Lao PDR, illegal logging is operated by Vietnamese military-owned companies which are cooperating with Lao's military officials. They mention systemic corruption which facilitates the illegal trade and that contributes to many deaths among the Hmong ethnicity due to enforced displacement by the Lao and Vietnamese military. After harvesting, the lion's share of the illegal timber and logs are transported to Vietnam and made into furniture for foreign markets.

Table 2.2 summarizes the major problems regarding sustainable agricultural and rural development, policy measures and its effects in Lao PDR and Cambodia. The case studies from Lao PDR and Cambodia provide evidence for the "governance approach". Extensive policy failure, due to corruption and weak government financial resources, institutional and personal capacity led to large-scale deforestation. Consequently, the ethnic minorities have to bear the burden to make their livelihoods in even more degraded areas. These worsened

preconditions lead to further unsustainable development, which then can be explained by the “population approach”.

Table 2.2: Policy Measures and its Effects in Lao PDR and Cambodia

Case	Major problems	Policy measures	Effects on		
			Economy	Ecology	Poverty
Lao PDR, Cambodia	<ul style="list-style-type: none"> ▪ Land de-generation ▪ Enlargement of protected areas at expense of smallholders ▪ Lack of tenure rights ▪ Illegal logging ▪ Corruption 	<ul style="list-style-type: none"> ▪ National resettlement and land reallocation policies ▪ Community - based forest and land management ▪ Enlargement of protected areas 	<ul style="list-style-type: none"> ▪ Agricultural production area ↓ ▪ Forest area ↓ ▪ (illegal) timber export ↑ 	<ul style="list-style-type: none"> ▪ Degeneration of agricultural & forest area ↑ 	<ul style="list-style-type: none"> ▪ Increased

Source: Own compilation

2.2.3 Vietnam

The ‘*doi moi*’ reform process, which was launched in 1986, led to a dynamic economic development. In the HDR 2007/2008 Vietnam is ranked 105 out of 177 countries. This development reflects the country’s successful reforms to reduce poverty. However, while the deltas documented rapid improvements, the Central Highlands and Northern Uplands have experienced a much slower economic growth. Especially the mountainous areas of Northern Vietnam are underdeveloped and the poverty rate in this region was still 68 per cent in 2002, which is the highest in Vietnam (World Bank 2003). The area is mainly inhabited by “socially and politically marginalized ethnic minorities” (Pandey et al. 2006:2). Deforestation, soil erosion, and loss of biodiversity are apparent signs of poverty and environmental degradation, which are both, interrelated and widespread (ADB 2002, Gomiero et al. 2000, Sunderlin and Thu Ba 2005, all cited in Pham 2005). Consequently, Vietnam’s government is promoting policies to advance forest protection, sedentarization of shifting cultivators, assignment of land-use rights to farmers, and the provision of economic assistance to poor farmers. In addition to a reduced logging quota and a log export ban, the Vietnamese government expanded timber plantations to supply raw material. Nevertheless, Vietnam has a track record for importing illegal timber, first from Cambodia in the late 1990s, then from Indonesia in 2003, and now from Lao PDR (EIA and Telapak 2008).

Pham (2005) analyzes land use changes in Son La Province of Northern Vietnam, a mountainous region with severe poverty and environmental problems, and their impacts on agricultural and economic growth, the environment, and in particular on forest loss and

degradation, and poverty. Pham combines commune-level data for the entire Son La Province with remote-sensing data in a geo-referenced information system. According to Pham and Zeller (2006), agricultural growth in general, and expansion of crop production and the introduction of high-yielding rice and maize varieties in particular, contributed significantly to the enhancement of food security. However, agricultural expansion and intensification was undertaken on fragile hillsides, often as a result of encroachment into previously forested areas. This development led to massive forest losses during the 1980s and early 1990s. In response, the Government of Vietnam initiated a major reforestation program during the 1990s. The environmental degradation through forest loss, soil degradation, and biodiversity loss certainly will contribute to future losses in agricultural productivity in Son La Province. The results by Pham (2005) suggest a likely “downward spiral” situation: agricultural growth - environmental deterioration – decline of agricultural productivity and food insecurity.

Müller and Zeller (2002) conducted research in the southeastern part of Vietnam's Dak Lak province, which has shown an increase in forest cover with currently 52 % of forest, compared to 33 % in the overall country (General Statistical Office 2001, cited in Müller and Zeller 2002). During the last decade, traditionally practiced shifting cultivation almost entirely disappeared, while agricultural production became locally more concentrated with potential environmental benefits for preserving the integrity of ecosystems and endangered species populations. The presented data reveals that forest regeneration at the expense of agricultural area predominantly occurs near ethnic villages, which are usually closer to forested areas and further away from all-year roads and political centers. The increase in forest cover over the last decade despite the observed population growth does not correspond to the widely stated positive correlation between higher population density and lower forest cover. In summary, Müller and Zeller (2002) showed that a combination of the right policy instruments and investments in infrastructure (e.g. improved access to roads, markets, and services) can facilitate agricultural intensification without adverse consequences for forest resources. However, the presented results are based on two purposely selected districts and are not representative of the entire province or country. In other areas of the Central Highlands, deforestation continued due to expansion of cash crops, e.g. coffee and pepper plantations. These plantations were also set up by external investors, collaborating with local political elites, infringing on customary land use rights of indigenous ethnic groups. The major problems for sustainable agricultural and rural development, policy measures and their effects for Vietnam are listed in Table 2.3.

Past land use changes in the Northern Highlands can be best explained by the population approach (at least during the 1990s) and later – with improvements in market access- by the market-based approach. Smallholders are here the major agents of land use change and agricultural expansion. In the Central Highlands of Vietnam, the agricultural expansion is caused by a multitude of causal factors that can find their basis in all three explanatory approaches.

Table 2.3: Policy Measures and its Effects in Vietnam

Case	Major problems	Policy measures	Effects on		
			Economy	Ecology	Poverty
Vietnam	<ul style="list-style-type: none"> ▪ Poverty, food insecurity ▪ Shifting cultivation, agriculture with low productivity ▪ Deforestation 	<ul style="list-style-type: none"> ▪ Reforestation ▪ Massive infrastructure investments (roads, irrigation, etc.) ▪ Agric. intensification & commercialization ▪ Dissemination of high-yielding varieties 	<ul style="list-style-type: none"> ▪ Agricultural productivity ↑ ▪ Smallholder income ↑ ▪ Export of wooden furniture ↑, but no economic benefit for ethnic minorities 	<ul style="list-style-type: none"> ▪ Soil degeneration ↑ ▪ Forest cover ↑ (=plantation forest, not primary forest) ▪ Biodiversity ↓ 	<ul style="list-style-type: none"> ▪ Poverty rates ↓ ▪ Food insecurity ↓

Source: Own compilation

2.2.4 Indonesia

In the HDR 2007/2008, Indonesia is ranked 107 out of 177 countries. The data for the case studies from Indonesia, based on Birner et al. (2002, 2006), Maertens et al. (2006), Schwarze and Zeller (2005), and van Rheenen et al. (2003), were collected in villages near the Lore Lindu National Park in Central Sulawesi, Indonesia. The park is located in an ecological and socio-cultural divers region and was, due to its rich biodiversity and high endemism, declared a World Heritage Site by UNESCO (Birner and Mappatoba, 2002). The National Park's administration, in collaboration with different NGOs, played a pioneering role in promoting negotiated community agreements on conservation, which strive for dealing with major hazards of the National Park.

Following Birner et al. (2006), biological diversity is still rapidly declining and encroachment of protected areas for agricultural production continues to be a major problem. Consequently, conservation organizations demand an expansion of protected areas, as well as a better enforcement of regulations in already existing protected areas. Birner et al. (2006) identified three major issues concerning the encroachment of protected areas: (1) population density in the area, (2) the availability of suitable land inside the park, and (3) customary rights. Another

important issue, which was previously addressed by Chomitz and Grey (1996) and Cropper et al. (2001), is avoiding the creation of pull factors, e.g. connecting protected areas and parks by roads. Birner et al. (2006:12) conclude that “strengthening law enforcement without at the same time reducing the need for encroachment created by poverty will not be a viable policy option”.

Birner and Mappatoba (2002) highlight the potential of CBFM agreements for improving nature conservation and rural development in the region, as they are negotiated at the local level and thus take the specific ecological, socio-economic and cultural conditions into account. Due to their voluntary character, they can reduce conflicts and problems of state regulations. However, the overall success of the implementation is influenced by the ideals and opinions of both, the facilitating organizations and the village leaders responsible for the implementation on the local level. Hence, the “problem of unequal power relations and conflicts of interest within the villages may well jeopardize the deliberation process. The role of intermediaries, or representatives, should, therefore, be considered carefully” (Birner and Mappatoba 2002:13).

Focusing on constraints, Birner and Mappatoba (2002:25-26) found that “80 per cent of the respondents mentioned at least one problem, which the national park causes for them or their community”. About half of the respondents addressed future land scarcity for their children due to park protection. Furthermore, land with traditional property rights was located inside the park and while the agreement allowed them to collect certain non-timber forest products, it did not allow them to use their traditional land for agricultural purposes. Finally, the loss of income provided by rattan collection was listed as the third most important problem.

Similar results are presented by Schwarze et al. (2007), who analyse the importance of forest products, especially for the rural poor. It was found that poor households depend most on income from forest products. Consequently, “any improvements in law enforcement concerning the collection of forest products within the national park will hit the poorest households hardest” (Schwarze et al., 2007:221). The study presents different policy options to reduce the collection of forest products and, at the same time, improve the livelihood of the poorest households, including e.g. better access to primary education as well as the construction and improvement of irrigated rice-fields for the poorest households in order to improve the nutrition status of the family and to gain additional income.

Rosyadi et al. (2005) examine the challenges of implementing devolution policies at the local level in Banyumas district, Central Java Province, analyzing a reforestation project which allows farmers to cultivate crops on government-owned forest land during the first years after

establishing a forest plantation. As in previous case studies, the boosting role of NGOs (e.g. in mobilizing village communities and creating political capital) and international donor organizations could be demonstrated. The organizations openly criticized corruption, collusion, and nepotism which finally helped to approve the villagers' CBFM plan (Rosyadi et al. 2005). Summarizing, Rosyadi et al. (2005:25) show that devolution policies have the potential to decrease deforestation "by reducing the incentives for villagers to participate in illegal logging networks and by empowering those villagers who are concerned about the environmental damage caused by illegal logging".

In contrast, Casson and Obidzinski (2002) and McCarthy (2000b, both cited in Rosyadi et al. 2005) present examples from Kalimantan and South Aceh respectively, where illegal logging is still common among local authorities as it guarantees substantial contributions to the government budgets. According to Larsen (2002:1), "illegal logging alone has destroyed 10 million hectares of Indonesia's rich forests", and it is still widespread (cf. WWF 2008). A report of Nellemann et al. (2007), published by the United Nations Environmental Programme (UNEP), also highlights that large-scale threats to Indonesia's pristine forest areas are illegal logging done by timber companies as well as the spread of oil palm plantations and processing facilities. Nellemann et al. (2007) state that community-based monitoring and control of forested and protected areas is less effective if deforestation is driven by external companies instead of smallholders. As the largest-scale threat to Indonesian forests comes from domestic and foreign timber and oil palm companies, Nellemann et al. (2007) state: "Among the most promising and important Indonesian government initiatives is the further development, support and training of the 'SPORC' rapid response ranger units. However, it is essential that these units and selected parks have the necessary paramilitary training, equipment and mandate to prevent illegal loggers from operating inside protected areas (Nellemann et al., 2007:43).

Table 2.4 summarizes again the major problems for sustainable development, the policy measures taken and their effects on the economy, environment and poverty in Indonesia.

The Indonesian case studies show that the governance approach – by strengthening community organizations or state-controlled ranger units controlling agricultural expansion and logging – can make important contributions. Also, as corruption is still widespread in many parts of Indonesia, institutional reforms and specific policies based on the governance approach would be most effective in combining resource and biodiversity conservation, economic development and poverty reduction.

Table 2.4: Policy Measures and its Effects in Indonesia

Case	Major problems	Policy measures	Effects on		
			Economy	Ecology	Poverty
Indonesia	<ul style="list-style-type: none"> ▪ Food in-security & poverty ▪ Violation of customary land rights ▪ Investments in roads / transmigration near protected areas ▪ External investors, illegal logging firms or plantations ▪ Corruption 	<ul style="list-style-type: none"> ▪ Agricultural development programs & agreements with local communities ▪ Devolution policies (local level) ▪ Community conservation agreements ▪ Strengthening voice of community organizations ▪ Strengthening law enforcement in protected areas 	<ul style="list-style-type: none"> ▪ Agricultural production area ↑ on new forest plantations 	<ul style="list-style-type: none"> ▪ Illegal logging ↓ (only in protected areas) 	<ul style="list-style-type: none"> ▪ Poorest people depend most on forest products → have to go to other villages for rattan collection

Source: Own compilation

2.3 Conclusion

In this paper, we distinguish three explanatory approaches to land use change and agricultural and rural development. The population approach considers population pressure linked to poverty and food insecurity as the major impetus for land use change. The market-based approach places the emphasis in the role of markets and land-saving technologies in boosting agricultural incomes and reducing poverty. The governance approach focuses on political and institutional factors that are to guide the allocation of land and control the expansion of land use driven mainly by external investors.

Overall, economic growth and agricultural development benefited smallholders in many countries. However, these economic gains can be short-lived if looming environmental problems are not addressed more effectively in the future. For example, the agricultural expansion on hillsides in northern Vietnam comes at a massive degradation of soils. A number of countries suffers from weak governance, providing possibilities for illegal logging and land acquisition at the expense of the environment, poor smallholders and ethnic minorities.

In the extremely diverse cultural, socio-economic and agro-ecological conditions prevailing in the Uplands of Southeast Asia reforms and policies need to be designed to properly take into account and address the major underlying factors of agricultural and rural development. They may have to be geared primarily to deal with population pressure, poverty and food

insecurity, they may have to focus on market access and mechanisms, or they need to address governance failures. This implies that there will not be a blue-print recipe for rural development policy that adequately takes into account the relationships between social justice, economic growth and environmental sustainability.

A successful policy strategy is likely to combine specific policy measures from the three explanatory approaches, and addresses governance and market access issues as well as the nexus between population, poverty and food security. We argue that a combination of policy instruments that derive their justification from all three explanatory approaches will prove most successful in the long-run.

3 Risk Management Strategies of Vulnerable Rural Households in Southeast Asia: A Case Study from Vietnam⁸

Access to formal insurance services is scarce in developing countries. Based on empirical evidence, major risks and risk management strategies of ethnic minority farm households in mountainous Northern Vietnam are presented and analyzed. The paper investigates the theoretical links between poverty, vulnerability and risk. The concept of vulnerability to poverty lays the analytical framework. Results suggest that limited endowment with and access to capital assets and service institutions, as well as human and economic risks are the main components affecting rural livelihoods. Constrained access to adequate risk management strategies increase household's vulnerability, drowning them more and more in poverty.

3.1 Introduction

Subsistence farmers in developing countries face many types of dangers in their everyday life. With low livelihood resilience at the best of times, unmitigated income and consumption shocks can have devastating consequences (Fafchamps and Lund, 2003). In mountainous Northern Vietnam, poor and near-poor farm households endure manifold risks and income shocks, which threaten their existence. Normally, insurance systems would step in to assist. In developing countries however, where access to formal insurance services is hardly available, rural farm households have developed alternative risk management strategies. The better-off households might have access to so-called (ex-ante) adaptive risk management strategies. The accumulation of savings in cash or kind counts as such an adaptive risk management strategy. Poorer households have to rely primarily on (ex-post) risk coping strategies, for instance the sale of livestock. In contrast to risk management strategies, risk coping strategies, however, enhance the long-term level of vulnerability.

According to Ligon and Schlechter (2003), economists have long used poverty measures to describe the well-being of less fortunate households. Meanwhile, it is obvious that a household's well-being depends not just on its average income or expenditures, but that risk plays an important role, too. While the concept of risk has been extensively considered by the scholarship, it has often remained on the periphery in the design of anti-poverty policies.

⁸ This section is based on the article: "Risk-management of vulnerable rural households in Southeast Asia", written by Isabel Fischer and Gertrud Buchenrieder and published 2010 in the on-line proceedings of the 9th European IFSA Symposium, 4-7 July 2010, Vienna (Austria), pp 1279-1288. A revised version with the above-named title was accepted for publication in the *Journal of Agricultural Science and Technology*, Vol. 5, No. 9, 2011.

Hence, in order to better understand the highly diverse livelihood strategies of vulnerable rural farm households, this paper investigates the theoretical links between poverty, vulnerability and risk. The concept of vulnerability to poverty⁹ serves as analytical framework. Focusing on the concept of vulnerability and its measurement, there are numerous dimensions, definitions and methods available since it's emerging in the course of the 1980s. However, there is no consensus yet on an universal theoretical framework. Up to date, the implementation of many theoretical suggestions and policy recommendations is largely impossible due to the absence of intertemporal data on shocks, risks, their determinants, and possible coping mechanisms at the household level. Furthermore, Krüger and Macamo (2003, cited in Shakya 2009: 29) “stresses that there is yet another important link between vulnerability and risk: People’s *perception of risk* determines their susceptibility, i.e. their risk management capacity.” This means that “[i]n other words, people are vulnerable if they are exposed to risks, and/or if they are not aware of risk” (Shakya 2009: 29). These issues have been incorporated in our empirical research. Major risks and shocks that rural ethnic minority households face in Northern Vietnam will be analyzed. In addition, the applied risk management strategies will be presented.

The paper is organized as follows. The economic situation in Vietnam, focusing on the rural Northern Uplands will be summarized in the next chapter. Thereafter, a brief conceptual overview will be given, clarifying the links between the concepts of poverty and vulnerability. Next, the risk management strategies (adaptive, ex-ante as well as ex-post coping strategies) of ethnic minority households will be analyzed and presented. The last chapter concludes.

3.2 Economic Situation in Vietnam

Despite the well-known achievements of the ‘*doi moi*’ reform process¹⁰, which was launched in 1986, almost one third (28.9% in 2007) of Vietnam’s total population (85 million in 2007) is still living below the national poverty line (UNDP 2009). Especially the mountainous, rural

⁹ A forthcoming, extended version of this paper will include the calculation of a vulnerability index as well as the analysis of the vulnerability to poverty of ethnic minority farm households in Northern Vietnam (based on own empirical data).

¹⁰ According to the World Bank (2008), Vietnam’s average annual real GDP growth was 7.3% and per capita income grew by 6.2% (1995-2005). The economy has proven resilient to shocks and negative impacts from SARS, avian influenza, poor weather, high commodity prices, inflation, and anti-dumping suits. In US dollar terms, income per capita rose from US\$260 in 1995 to a 2007 level of US\$835.

areas of Northern Vietnam, which are mainly populated by ethnic minorities¹¹ (e.g. Black Thai, Tay, Hmong, etc), are underdeveloped. Following Minot and Baulch (2005) as well as Gaiha et al. (2007: 6), “poverty rates, which decreased in urban areas, remained much higher in rural areas. Especially in high mountain areas, poverty is a major problem of ethnic minorities (e.g. in 2002, 69% of ethnic minorities were poor, in contrast to 23% of the Kinh [Vietnamese] and Chinese)”.

Vietnam has made good progress concerning the implementation of the United Nations’ *Millennium Development Goals (MDGs)*. Nevertheless, regional disparities are still apparent. According to United Nations Vietnam (2009), poverty levels are already meeting the standards. Nevertheless, there are still many challenges, including the reduction of child mortality as well as the improvement of maternal healthcare and the quality of primary education. As “it is estimated that 20 million children (59% of all children) still lack access to proper sanitation”, major improvements are necessary, particularly in remote and ethnic minority areas. Even though Vietnam is well on its way to achieving its goals to promote gender equality in primary and secondary education, “women continue to face serious obstacles – including poverty, limited access to higher education, and employment opportunities, as well as persistent discriminatory attitudes and behaviour” (United Nations Vietnam 2009: 1f).

Focusing on the Northern Uplands¹², it may be summarized that farming remains the most important economic sector and the population in this region is increasing fast. To date, the natural resources have been depleting as well as the natural environment has been degrading seriously due to unsustainable expansion of agriculture on sloping lands. Once again, the success of the agricultural reforms in the Deltas had little impact on the Northern Uplands. Currently, the Northern Uplands remains the poorest regions in the country. With the recent enforcement of forest protection policies, poor ethnic minority farmers are in a more difficult situation because (additional) incomes from harvesting natural forests are no longer available. The governmental infrastructure programs (i.e. the Program 135) have increased accessibility but also increased migration to the regions and widened the gaps between the rich and the poor and among different ethnic groups. Infrastructure development alone is not sufficient to address the poverty and restoration of the degraded environment. If the current trends

¹¹ For more detailed information concerning ethnic minorities in Mainland Southeast Asia please refer to ADB (2002), Friederichsen and Neef (2010), Michaud (2000) as well as Rambo and Jamieson (2003).

¹² The next paragraphs are based on World Bank (2006: 32).

continue, there are high risks that poverty will persist while the increased population will further put pressure on the environment. In addition, the vulnerable situation of rural households in Northern Vietnam is intensified by the lack of a formal agricultural or more general rural insurance markets (Vandevener, 2000) and by a non-functioning or non-existent social welfare system. For instance, health insurance¹³ is limited to a few groups (ILO, 2004). All other households have to rely on sub-optimal coping strategies in the event of a crisis, dependent on their endowment with and access to resources and capital assets.

Admittedly, state interventions are common during covariate shocks. For instance, in the event of a natural calamity such as a flood or a drought, the State Bank of Vietnam can postpone or terminate the term of payment of formal loans disbursed through government schemes or through the state-owned banks (Izumida and Duong, 2001). However, in the incidence of idiosyncratic income shocks, rural households in Vietnam have to rely mainly on informal mutual aid schemes within their social networks to cope with shocks and to reduce their risk. Usually, immediate and extended kin provide material and financial help and/or inexpensive farm labour. This is in line with the findings of Dalton et al. (2002), Rosenzweig and Binswanger (1993) and others who showed that the family plays a vital role within the social risk-sharing networks as well as in daily social life.

3.3 Poverty and Vulnerability

According to van Dillen (2004: 8), “the term ‘vulnerability’ found its way into common use in the social sciences in the course of the 1980s”. Chambers (1989: 1) defines that it “refers to exposure to contingencies and stress, [...] which is defencelessness, meaning a lack of means to cope without damaging loss”. Extensive literature review¹⁴ on ‘vulnerability’ reveals that it “has diverse but related meanings in different academic disciplines¹⁵. In the social sciences in general, and in economics in particular, vulnerability is perceived as the existence and the

¹³ Even if people possess health insurance cards, they usually face additional expenses including costs for transport, special treatment and medication. People staying in a hospital must cover the expenses for a second family member accompanying the sick to provide for the basic needs of the sick and themselves. For more detailed information concerning health and access to social security in Vietnam, please refer to Fischer and Salehin (2009) and Tran (2004).

¹⁴ Alwang, Siegel and Jorgensen (2001) introduce different definitions, discuss various views and provide important references. More recently, Dercon (2005) discuss on risk, vulnerability and its links with poverty. Gaiha, Katsushi and Imai (2007) focus on vulnerability and poverty dynamics in Vietnam. Makoka (2008) reviews theoretical and empirical literature on vulnerability to poverty, risk management strategies and consumption smoothing.

¹⁵ Shaky (2009: 40-41) provides a detailed review of “Theoretical Approaches to Vulnerability in the Context of Development Research” (cf. Table A1 in Annex 1).

extent of a threat of poverty and destitution (Dercon, 2005). In the natural sciences, in general, and environmental sciences and geography in particular, vulnerability refers to the susceptibility of a household or community to the impact of natural hazards or climate change (De Leon, 2006)” (Makoka 2008: 6-7).

Following Dercon (2005, 9), “economic vulnerability refers to risks faced by households and/or communities arising from exogenous shocks to systems of production, distribution and consumption (Warner, 2007). In the economics literature, however, this is referred to as ‘vulnerability to poverty’. One of the most important components in the concept of vulnerability to poverty is ‘risk’. The term ‘risk’ is defined as potentially dangerous event that is likely to cause a loss in individual and/or household welfare when it occurs (Chaudhuri, Jalan and Suryahadi, 2002; Dercon, 2002; Harrower and Hoddinott, 2004). In the same vein, a ‘shock’ is defined as an actual occurrence of a risk.” Major risks and shocks, which affect vulnerable livelihoods of ethnic minority farm households in Northern Vietnam, will be presented in the next chapter, after a brief conceptual overview of poverty, vulnerability and vulnerability to poverty.

Poverty and vulnerability are closely interlinked and while poverty is usually defined as economic deprivation (lack of income), vulnerability entails “the relationship between poverty, risk and efforts to manage risk” (Alwang, Siegel and Jorgensen, 2001: 1). Households may not be poor at present. They may be, however, vulnerable-to-poverty in the future. Poor households without potential to escape poverty are also characterized as vulnerable (Conway and Turk, 2001). Moreover, poverty is a static and vulnerability a dynamic concept. While the poor can be quantified relatively easily ex-post despite the many dimensions of poverty (absolute poverty with regard to food consumption, housing etc. and relative poverty with regard to income), quantification of the vulnerable is much more difficult due to the dynamic and ex-ante perspective. Nevertheless, a thorough understanding of the characteristics and priorities of the poor and vulnerable is crucial to formulate effective strategies for reducing the share of those who are currently poor and will remain in poverty and those of the vulnerable non-poor (Chaudhuri, Jalan and Suryahadi, 2002; Alayande, 2004).

Like poverty, vulnerability is a multi-dimensional concept, based on both, monetary (relative) and non-monetary (absolute) indicators.¹⁶ The specification of the future over which shortfall

¹⁶ Poverty and vulnerability can be assessed through monetary parameters (for instance income and consumption expenditures), or non-monetary dimensions, such as food consumption, education, anthropometry and mortality (Deaton, 1997; Sahn and Stiffel 2000; Baulch and Masset, 2003).

in welfare could be, represents one of the major differences between poverty and vulnerability. The specification of the period over which to measure vulnerability affects the level and magnitude of vulnerability. The longer the period, the higher is the probability of a household falling under a certain poverty-line (Tesliuc and Lindert, 2002). The concept of vulnerability is thus forward looking: Vulnerability is seen as a certain probability that a household would find itself poor in the future or that a household that is currently poor will remain in poverty in the future (Conway and Turk, 2001; Chaudhuri, Jalan and Suryahadi, 2002). Contrary to the ex-post concept of poverty, vulnerability is not directly observable as it is an ex-ante concept. The seminal review of poverty and vulnerability by Alwang, Siegel and Jorgensen (2001) shed substantial light on the poverty-to-vulnerability issue.¹⁷ By way of summary, poverty and vulnerability to poverty are two sides of a coin. The observed poverty status of a household (defined as whether or not the consumption expenditures are above or below a given poverty-line) is the ex-post realization of a state; the ex-ante probability of which can be taken to be the household's level of vulnerability (Chaudhuri, Jalan and Suryahadi, 2002).

According to Gaiha, Katsushi and Imai (2007: 2), “there has been a surge of interest in measuring vulnerability in developing countries (e.g. Chaudhuri, Jalan and Suryahadi, 2002; Dercon, 2005; Gaiha and Imai, 2004; Gaiha and Imai, 2006, Hoddinott and Quisumbing, 2003a & b; Ligon, 2005; Ligon and Schechter, 2003).” All of these studies suggest developing special anti-poverty policies to address vulnerability in remote rural areas, where risks are boosted by lack of formal insurance, credit market imperfections, and weak infrastructure. “Low income households and/or those living in remote areas are also subject to idiosyncratic risks arising from morbidity, dependence on a single adult male for much of household income and exclusion from community networks of support” (Gaiha, Katsushi and Imai, 2007: 3).

3.4 Risk Management Strategies of Ethnic Minority Households

As mentioned above, Vietnam has experienced a remarkable reduction in poverty in recent years. However, it does not necessarily imply that the reduction is durable. In fact, there are fears that the pace of poverty reduction is slowing down or even reverse (Gaiha and Thapa, 2006). According to Dercon (2005: 10f), “despite the fact that households actively try to

¹⁷ They comprehensively reviewed the economics, sociology, and environmental literature, the so-called sustainable livelihood, food security and nutritional, and disaster management literature.

manage risk, shocks affect them, and at best, the evidence suggests only partial smoothing of welfare and nutrition. Assets, and more in general, households' livelihoods and their ability to generate future income is affected, in part due to the necessity to cope with shocks, so that assets are sold-off, or, more directly, the asset base is often instantly affected by the shocks – such as death of livestock or a loss of human capital due to illness or temporary poor nutrition.” In rural livelihood systems, the household consumption is inseparable from the agricultural production activities. Literature review on risk and vulnerability indicates that rural households in developing countries are usually affected by multiple shocks (e.g. Christiaensen and Sarris, 2007; Dercon, 2000; Hoddinott and Quisumbing, 2003; Makoka, 2008).

3.4.1 Data Collection

Quantitative and qualitative field research took place in ten villages, in Ba Be and Pac Nam districts in Bac Kan province, as well as in Yen Chau district in Son La province (2004-05). Both provinces are located in the mountainous regions of Northern Vietnam and belong to the poorest provinces of the country. Data concerning vulnerability and risk management of ethnic minority farm households were collected at different administrative levels in both provinces. Key informant interviews with officials of so-called mass organizations (e.g. the farmers union and the women's union) and political cadre at the commune and district level provided general information and gave hints on common risks that rural households usually face. Special focus was laid on difficulties concerning livestock as well as information on access to public services (e.g. finance, extension, education, health care etc.) and differences concerning the wealth strata¹⁸ of rural livelihoods.

At the village level, general household interviews with a structured questionnaire¹⁹ were conducted among 203 households with 670 adult²⁰ household members. Beside collecting basic data on demographic characteristics, asset endowment and livestock ownership, special emphasis was laid on financial transactions (effective demand and supply for savings, credit and insurance services) and social networks as well as on experienced and expected

¹⁸ In Vietnam, the Government classifies households once a year according to their living standard into one of five wealth classes: 'hungry', 'poor', 'average', 'better-off', or 'rich'. The ranking is based on the household's monthly cash income or rather in terms of rice in kg/month/person.

¹⁹ No multiple choice questions, respondents answered questions openly.

²⁰ Including all family members aged 18 and older. The dependency ration (including those under the age of 15 and over the age of 64) of all households is 59%.

difficulties and applied risk management strategies of the interviewee's household²¹. Hence, the respondents were asked to name those shocks/difficulties, which severely influenced the livelihoods of their households during the last year and the last two to five years respectively. The majority of the surveyed households experienced multiple shocks in both periods. Only a few households did not have to endure any difficulties during the recall period. In addition, the respondents were asked to name future risks that they fear might affect their household, as well as risk management strategies they have previously used and those, which they intend to apply in future. Furthermore, 44 male and female respondents joined complementary, visualized participatory rural appraisal (PRA) sessions.

3.4.2 Results and Discussion

Own empirical evidence (see Table 3.1) confirms existing data concerning major shocks and risks. As anticipated, death of livestock and sickness of household members (working and non-working) were named as last years' top two livelihood shocks. The surpassing high percentage of livestock loss might be explained by very cold weather during winter and the outbreak of the Avian Influenza. Surprisingly, the figures for the previous period (two to five years prior to the survey) are different from the last-year-recall. Obviously, most of the respondents remembered to have spent a lot of money to rebuild the house and repair damages (mainly caused by storm) as well as they faced production factor risks, including lack of capital, manpower, land.

According to Makoka (2008: 129), research "shows that wealthier households experience as many shocks as poorer households. However, the type of shocks that poor households face is often different from those of wealthier households". Overall, own empirical research confirmed this statement. Focusing on poor households, the top two difficulties during the last two to five years were expenditures to rebuild the house and repair damages (33%) and sickness of household members (14%). Furthermore, they were seriously affected by lack of food (12%) and expenditures to replace dead livestock (12%). At the same time, both, the average (21%) and the better-off (24%) households stated, that production factor risks are most prevalent. While sickness among household members is the second most common difficulty for the average households (20%), it is only ranked third (14%) for the better-off households. Vice versa, expenditures to rebuild the house and repair damages are second most

²¹ For more details concerning the demand of livestock insurance and the utilization of social networks in case of a livelihood emergency, please refer to Fischer and Buchenrieder (2009) and Fischer et al. (2010) respectively.

frequent (17%) for the better-off and ranked third (18%) for the average households. Finally, focusing on last year, only the rich households' difficulties vary from the other wealth groups and the total results.

Table 3.1 Main Shocks Occurring in the Course of Last Year as well as Two to Five Years prior to Survey (in percent of households).

Shocks / Difficulties (Expenditures)	Last year					Two to five years prior to survey			
	household classified as				total	household classified as			
	poor	average	better-off	rich*		poor	average	better-off	total
Death of livestock	<u>20</u>	<u>26</u>	<u>35</u>	..	<u>25</u>	2	4	7	<u>4</u>
Sickness of household members (working and non-working)	<u>17</u>	<u>13</u>	<u>13</u>	..	<u>13</u>	<u>14</u>	<u>20</u>	14	<u>18</u>
Production factor risks	12	11	8	<u>20</u>	<u>11</u>	9	<u>21</u>	<u>24</u>	<u>19</u>
Insufficient harvest - lack of food	7	9	5	7	<u>9</u>	12	8	3	<u>8</u>
Replacement of dead livestock	9	11	5		<u>9</u>	12	6	0	<u>6</u>
Rebuild house and repair damages	12	7	5	<u>13</u>	<u>8</u>	<u>33</u>	18	<u>17</u>	<u>21</u>
Expenditures for ceremonies	5	5	3	7	<u>4</u>	7	4	7	<u>5</u>
Crop loss (due to bad weather)	4	3	3	..	<u>3</u>	2	4	7	<u>4</u>

Source: Own data

Note: Multiple answers were possible, thus percentage may not sum up to 100.

* None of the 'rich' households experienced any difficulties during the past two to five years prior to this survey

Next, we explore the risk management strategies of ethnic minority households in Northern Vietnam (see Table 3.2). Following Makoka (2008: 134), there is scholarly evidence that households living in risky environments devise strategies to deal with the risk both before the shock occurs (ex-ante risk management) and after the shock has manifested itself (ex-post coping strategies) (cf. Alderman and Paxson, 1994; Dercon, 2000; Holzmann, 2001).

The analysis of own empirical data revealed that accumulation of savings is so-far the only adaptive strategy that is applied by ethnic minority farmers in Northern Vietnam. Almost half (46%) of the surveyed households are saving. On average, savings are kept at home in cash (39%), in kind, either in crops (12%) or in livestock (43%) or both, in cash and kind (5%). Once again, the preferred savings behaviour varies among respondents of different wealth groups. While the majority of the poor (47%) and the average (49%) households prefer to save in kind (in livestock), the better-off (80%) and the rich (57%) households prefer to save in cash. Only one respondent mentioned to save in the bank, due to safety reasons. More than

half of the respondents (57%), who mentioned to save financially, argued that the ability to cover expenses in case of an emergency, especially health problems, is the main motivation. Another 10% stated explicitly that the savings will be used to pay for medicine and hospital visits. While 7% will use their savings to buy food, 6% will spend it on education or livestock respectively. The other respondents are saving money to invest in consumer goods (5%) or spend it on inputs, livestock and consumer goods (4%). Finally, some households save to cover expenses for ceremonies (2%), construction/repair of houses/storages (1%) or other purposes (2%).

Table 3.2 Risk Management Strategies Applied in the Last Year and Two to Five Years prior to Survey (in percent of households).

Risk Management Strategies	Last year					Two to five years prior to survey			
	household classified as				total	household classified as			total
	poor	average	better-off	rich*		poor	average	better-off	
Adaptive (ex-ante):									
Withdrawal of savings/ Divestment	6	5	<u>25</u>	<u>33</u>	8	7	6	14	7
Coping (ex-post):									
Credit total					25				32
Credit from bank (formal)	9	<u>13</u>	3	<u>20</u>	11	<u>21</u>	<u>13</u>	<u>14</u>	<u>15</u>
Credit from family/relatives (informal)	<u>17</u>	7	8	<u>21</u>	12	7	13
Credit from other sources	9	5	3	13	6	9	2	3	4
Sale of crops/livestock total					31				33
Sale of crops	<u>19</u>	12	<u>18</u>	<u>20</u>	<u>14</u>	<u>12</u>	9	3	9
Sale of livestock	5	<u>18</u>	<u>18</u>	..	<u>15</u>	9	<u>18</u>	<u>28</u>	<u>18</u>
Sale of crops & livestock	1	2	3	7	2	0	9	3	6
Others	12	8	8	9	8	10	9
No strategies applied	22	30	33	7	28	12	23	17	20

Source: Own data

Note: Percentage is calculated for applied strategies as well as a 'no strategies applied' option. Households that provided no information are not included in this table, thus N=199.

Usually, one of the most common risk management strategies in developing countries is income diversification. However, in the mountainous regions of Northern Vietnam, the members of the different ethnic minority groups only have limited options for income diversification. Hence, most households have to rely primarily on (ex-post) risk coping

strategies, which enhance the long-term level of vulnerability. In the research area, the most common coping strategy is the sale of livestock (cf Table 3.2). While wealthier households are usually capable of covering high expenditures by selling big ruminants (i.e. cows or buffalo), poor households only possess some pigs or chicken, which can be sold in the case of a livelihood emergency. Empirical research revealed that revenues from selling cash crops, which are also mentioned as one of the main coping strategies in the last year, are often significantly reduced by debt-service payments (e.g. for inputs, rice for consumption) to traders and shops. The remaining money is mainly spent on school fees or on consumer goods. Once again, poor households are worse off, as they normally have less cropping area and higher debts (especially from buying rice to compensate the household's lack of food).

Further common strategies include formal loans from banks and informal credits from relatives and friends. The later are crucial for poor households that have no/not sufficient access to formal loans. Own research confirms findings from Barslund and Tarp (2008) that formal loans in Vietnam are almost entirely for production and asset accumulation. Although the issue of the fungibility of money might be raised, and the validity of some of the data might be questioned (farmers are usually requested to sign a statement to the effect that the loan will be used for productive purposes only), a good share of formally borrowed money is used for productive purposes compared to other countries. Up to date, there are no formal loans available for healthcare or hospital visits. A complex administrative system and language difficulties are further constraints faced particularly by members of ethnic minority groups – especially women. Moneylenders play only a small role in the informal financial sector of rural Vietnam as most loans are given by relatives or friends and are interest-free. The main reasons why formal finance is rarely used to ease shocks, however, is that it takes time to apply for a loan and households are locally screened; any income or consumption shocks may be reported to the relevant credit officer and the credit is consequently denied.

As formal safety nets to balance arising shocks are not accessible or simply non-existent, alternative strategies must be adopted. The formation, maintenance and use of social networks is one of the most important risk management strategies of vulnerable households in Northern Vietnam. Own research²² revealed that these networks are able to provide basic support (e.g. by providing informal loans for relatives), but do not suffice to buffer a major crisis completely. Thus, the households are still forced to sell assets, primarily livestock, in the event of a livelihood emergency. The situation becomes even more acute where a household

²² See Fischer et al. (2010).

loses a debt-financed animal, which immediately increases the household's vulnerability, substantially limits its long-term livelihood strategies and very often directly consolidates poverty or makes them slip into poverty. As a consequence, poor households will remain vulnerable to shocks despite the presence of an informal insurance system.

Finally, focusing on the 'no strategies applied' option, own research suggests that on average, 20-30% of all shocks could not be mitigated. During the last two to five years prior to this survey, major difficulties - where no coping strategies were available - include lack of capital (29%), lack of food (24%) and loss of livestock (17%). During the year immediately prior to the survey, as many as 73% of all households were not able to cope with livestock loss and lack of capital (8%).

3.5 Conclusion and Policy Recommendations

Despite the well-known achievements of the '*doi moi*' reform process and the (partially) successful implementation of the MDGs, Vietnam's Northern Uplands are still severely underdeveloped. Research results suggest that limited endowment with and access to capital assets and service institutions, as well as human and economic risks are the main components affecting rural livelihoods. Poor and near-poor ethnic minority farm households endure considerable livelihood vulnerability due to various income shocks. To buffer these shocks, households apply different risk management strategies. While better-off households often have access to so-called (ex-ante) adaptive risk management strategies, poorer households have to rely primarily on (ex-post) risk coping strategies, which enhance their long-term level of vulnerability. As formal safety nets are not accessible or simply non-existent, alternative strategies must be adopted. Besides 'dissaving', the formation and maintenance of social networks is currently one of the most important adaptive risk management strategies. Focusing on risk coping strategies, households of all wealth strata mainly rely on sale of livestock and sale of crops, especially maize. Both strategies are disadvantageous for poorer households that lack sufficient capital assets. Usually, they neither possess adequate physical capital (e.g. livestock) nor natural resources (land).

Research results point to a number of policy issues that need to be addressed if household vulnerability to poverty is to be significantly reduced among ethnic minority households in Northern Vietnam. First of all, poverty reduction strategies and programs need to consider a broader target group, not only the currently poor but also those at risk of being poor in the future. According to Dercon (2005: 31), there is scope for assisting the poor in protecting themselves, either by promoting more self-insurance via savings or by supporting micro-

credit. Key problems with existing self-insurance via assets is that they tend to be risky and may well be strongly covariate with incomes, limiting their effectiveness, while financial savings products are typically not tailored to the poor, offering low or negative returns, and involving prohibitive transactions costs.

Furthermore, own research revealed that the combination of credit and insurance, especially loans that are taken up to purchase livestock, might help rural farm households to decrease their vulnerability and save them from slipping into poverty. Such a scheme would nevertheless only help those households that were able to get the credit in the first place, thus excluding the poorest of the poor. These households can only be reached by means of a general social welfare scheme. To date, however, no functioning rural social security schemes exist in Northern Vietnam. It is assumed that an efficient and accessible health care system would be an important alternative for securing livelihoods, as the majority of the interviewed households had problems with high cost of illness treatment. In addition, improved extension services and knowledge transfer for all people, especially women, could support a sustainable future development of ethnic minority households and therefore, in the long-run, lead to poverty alleviation.

4 Laptop, Livestock Drawings and Ricewine: A Demand Analysis for Livestock Insurance in Northern Vietnam²³

The following section is presenting the results of an Adaptive Conjoint Analysis (ACA). This demand analysis focused on insurance options for livestock loss and its consequences for vulnerable ethnic minority farm households in Northern Vietnam.

4.1 Introduction

Vulnerable²⁴ rural households in the mountainous regions of Northern Vietnam are exposed to various risks, crises and shocks. In rural livelihood systems where households are inseparable from their agricultural activities, the households' respective endowment with and access to assets and resources determines the severity of vulnerability. In many developing countries, livestock is an important source of household income and has additional non-economic functions (e.g. keeping social networks alive by lending draught animals to network members). Given the pivotal role of livestock in most farming systems, livestock death after accident or disease is considered one of the main factors for slipping into poverty (World Bank and DFID 1999). According to Evans et al. (2007: 46), "...almost 61% of the ethnic minority population [in Vietnam] is poor." At the time of the survey in 2004²⁵, the average income per capita for the Northwest region was 265,690 VND per month²⁶, or 3.2 million VND per annum, respectively, which is equivalent to 52% of Vietnam's average annual per capita income (Evans et al. 2007). In comparison, the average prices²⁷ for cattle (7 million VND) or buffalo (5 million VND) are enormous.

²³ This section is based on the following article: "Laptop, livestock drawings and rice wine: A demand analysis for livestock insurance in Northern Vietnam", written by Isabel Fischer and Gertrud Buchenrieder. It was published 2009 in the journal *Savings and Development* 33 (1): 41-60.

²⁴ Vulnerability refers to "the relationship between poverty, risk and efforts to manage risk," (Alwang, Siegel and Jorgenson, 2001: 1). Vulnerable households are characterized by the potential of their well-being to change in a negative direction, or by no change within an existing negative status, i.e. remaining in poverty (Conway and Turk 2001). Dercon (2002:16) proposes defining "vulnerable households as those liable to fall under an agreed-upon poverty line over time with a particular high probability". In 2001, one-third of the Vietnamese population lived in poverty and many of those who were not poor lived close to the poverty line. This figure makes up 45% of the population, if 'the vulnerable' are defined as the poor population in 2001, plus those who were near-poor within a line of 10% above the poverty line (Conway and Turk 2001).

²⁵ On average, 20,000 Vietnamese Dong (VND) are equivalent to 1€ (EUR) in the survey period.

²⁶ According to national statistics cited in the article 'Unequal regional development in Vietnam'; source: http://www.euromonitor.com/Unequal_regional_development_in_Vietnam (accessed: 05.02.2008).

²⁷ Source: <http://www.vietnamnet.vn/> (accessed: 20.02.2008).

In livestock-dependent households, the failure of an investment – especially when funded by a loan – can leave a household in an extremely vulnerable position. According to Dufhues et al. (2004), farmers using credit to purchase livestock face two risks at once: (1) loss of the livestock, and subsequently (2) failure of debt-financed investment. The lack of accessible veterinary services and high cost of medical treatment for livestock worsen the situation. Formal agricultural or more general rural insurance products hardly exist in developing countries, therefore rural farm households must rely mainly on informal mutual aid schemes within their social networks to reduce their risks (Vandever 2000). The adopted livelihood strategies will differ according to whether people have to deal with gradual changes or sudden shocks and crises. In the mountainous regions of Northern Vietnam, raising livestock and selling it during a livelihood emergency is one of the most popular risk management strategies.

Microinsurance is hypothesized to reduce the economic hardship from livestock loss and its consequences for vulnerable rural households. A computer-based Adaptive Conjoint Analysis (ACA) was carried out in two provinces of Northern Vietnam, Son La and Bac Kan. The demand analysis focused on insurance options for livestock loss and its consequences for vulnerable rural households. Based on empirical data, smallholders' insurance preferences will be presented and policy recommendations will be given to improve the overall situation of vulnerable rural households in Northern Vietnam. While most literature on insurance in developing countries discusses crop insurance schemes and micro-insurance for health and life, little research has thus far been conducted on livestock insurance schemes. This article will help to close that gap.

4.2 Methodology and Data Base

ACA is derived from the original Conjoint Analysis²⁸ (CA). According to Green et al. (2001), ACA was first introduced by Sawtooth Software in 1985 and has since become the world's most widely used conjoint analysis technique for quantitative marketing research. ACA is a hybrid model that incorporates self-explicated desirabilities and importances followed by the presentation of pairs of partial profiles drawn from the full set of attributes. The applications focus on consumer preferences and attempt to assess the effect of specific product features on

²⁸ According to Green and Srinivasan (1978), CA is recognized as the most frequently used marketing research technique for measuring consumer trade-offs among attribute levels in choice among products and services. It is used to measure the perceived values of specific product features, to learn how demand for a particular product or service is related to price, and to forecast what the likely acceptance of a product would be if brought to market (SKIM, 2002, Orme, 1998).

overall preference. In contrast to other conjoint models²⁹, e.g. full-profile techniques or choice-based conjoint (CBC)³⁰ studies, respondents evaluate product alternatives (concepts) described by previously selected attributes and indicate which product alternative they prefer. Research on the adaptive and coping strategies to shocks will have to consider a wide range of attributes of the supply and demand side. Hence, respondents may be provided with too much information to be considered thoroughly. The quality of the research is also constrained by limitations in the respondents' time and attention. ACA moves beyond those limitations by adapting the interview for each respondent³¹. Focusing on each respondent's values and areas of importance, so-called 'average utilities'³² and 'average importances' are calculated during each interview, using ordinary least square (OLS) regression.

In 2004 and 2005, a computer-based ACA was carried out in six villages in the provinces of Son La and Bac Kan in Northern Vietnam. Qualitative data served as the basis for the conceptual outline of the demand analysis for livestock microinsurance. This ACA used a stratified cross-sectional sample with 155 responding farm households of different ethnic minority groups. Eighty-three male and 68 female respondents participated in the ACA interviews. Three interviews had to be deleted from the sample due to incomplete data; one interview was cut short after the respondent explained that he is (due to a bad past experience) neither interested in livestock insurance in general, nor willing to purchase any kind of insurance in the future.

4.3 Livestock Insurance

In global terms, various livestock insurance schemes were developed over the past centuries. According to Dunlop and Williams (1996, cited in Spinage 2003), a system of indemnity against loss of animals was first introduced in 400BC, during the Zhou dynasty in China. In

²⁹ Green et al. (2001) provides an overview of CA's history and development, as well as different conjoint models.

³⁰ Concerning CBC, "the respondent's tasks are extensive, since respondents may have to evaluate 10 (or more) scenarios. Each scenario could contain eight or more brands, each with several attributes and with levels within attributes," (Green et al. (2001: 13).

³¹ According to the ACA User Manual (3-1), "An ACA survey includes a series of questions used to first estimate approximate preferences for features, and then later refine them through focused trade-off-questions."

³² According to the ACA User manual, "Products or services are thought of as possessing specific levels of defined attributes, and a respondent's 'liking' for a product is modelled as the sum of the respondent's 'utilities' for each of its attribute levels" (ACA User Manual: 3-2).

Europe³³, e.g. in Germany, mutual assurance societies for stock existed as early as the 12th century, and became obligatory in Silesia for all cattle owners in 1765 under a law of Frederick the Great. Informal mutual insurance schemes emerged in France in 1553. Private cattle insurance companies, such as the Farmers' and Graziers Mutual Cattle Insurance Company, were set up in Britain in 1844. However, after a short time, many of the insurance schemes failed due to problems with mounting fraud or premiums that did not cover the claims.

Nowadays, several types of national livestock insurance systems exist in most developed countries. The majority are focused on direct losses due to epidemic diseases and/or the associated consequential losses. In developing countries, animal insurance schemes have developed mainly in Asia, e.g. in India, where a fairly successful, credit-tied cattle insurance scheme exists (Otte, Nugent and McLeod 2004). However, most farm households in developing countries must still rely on informal mutual aid schemes within their social networks to reduce their risks (Vandeveer 2000). According to Kaweesi (2005), informal livestock insurance arrangements, which usually involve restocking and changing the herd composition, exist, for instance, in West African countries. Formal livestock insurance is challenging, especially if it is meant to serve low-income households. In some countries, public intervention has been the only alternative available in the provision of livestock insurance, where the livestock insurance services are invariably supplied by state-owned or state-subsidized organizations. In other countries, developmental projects, community-based organizations and non-governmental organisations (NGOs) have been involved in the supply of livestock insurance services.

Private livestock insurance is available in some developing countries, including the south of Vietnam³⁴. The drawback is that subsistence farmers (or some semi-commercial farmers) are usually below the "threshold of insurability" for the offered insurance products because they are considered incapable of paying the commercially-rated premium due to their generally low income levels. Consequently, the livestock insurance schemes are not commercially viable and the private sector insurance, solely on their own and without assistance from the

³³ Examples presented in this paragraph are based on Spinage (2003: 301-302).

³⁴ Groupama is one of Europe's leading multi-line insurers and has specialized in agricultural insurance worldwide. In September 2002, Groupama began offering livestock insurance in 13 provinces of the Mekong Delta in Vietnam. The main target group are shrimp farmers and the minimum premium per contract is 200.000 VND. According to national statistics⁴, the average monthly income of farmers in the Mekong Delta is 471.070 VND. For more detailed information, please refer to Dufhues et al. (2004).

public sector, may not be able to play a substantial role in providing livestock insurance in developing countries. Nevertheless, the interests of the poorer farmers ought not be ignored, either politically or from the human, social, and economic point of view. Hence, the critical issue is how to design an insurance package that can benefit poor farmers the most and which also keeps the possible state support at a minimum.

Vulnerable households have developed sophisticated (ex-ante) risk management and (ex-post) risk-coping strategies. Although they provide some protection in the short run, the coping strategies limit the poor's long-term prospects of escaping poverty (Kanbur and Squire 2001: 210). In contrast, adaptive livelihood strategies (e.g. accessing insurance³⁵) may seek to mitigate risks through livelihood adjustment, or change and the diversification of income-creating activities. However, Skees et al. (2002) state that since farming remains the dominant activity in many rural areas, diversification may not actually spread certain types of risk. Moreover, the average household income in a diversified portfolio may be lower than in a specialized portfolio, but the variation in income is also normally less in a diversified portfolio. Thus, potential economic gains exist if households are offered options that provide them with alternative mechanisms for reducing and managing risk, such as formal savings and insurance mechanisms (Dunn 1997 cited in Kaweesi 2005).

4.4 Adaptive Conjoint Analysis in Northern Vietnam

Focusing on financial market research, especially on insurance options for livestock loss and its consequences for vulnerable rural households, this demand analysis for livestock microinsurance is based on the results of a computer-based ACA.

4.4.1 Adaptation of the ACA to the Local Context

In northern Vietnam, as elsewhere, the demand for livestock microinsurance is dependent on numerous economic and non-economic (cultural and social) attributes of both the insurer and the insured. Research quality is constrained by limitations in the respondents' time and attention, and respondents may be provided with too much information to be digested thoroughly. Computer-based ACA moves beyond those limitations by customizing the

³⁵ Summing up the essential characteristics of insurance, it may be observed that insurance is a social device that aims at reducing the uncertainty of loss through the combination of a large number of similar uncertainties and through the use of accumulated funds, thus distributing the burden of loss, should there be any, over space and time (Ray 1967 cited in Kaweesi 2005).

interview for each respondent, basing subsequent questions on previous answers. Hence, the respondent is asked in detail only about those attributes and levels of greatest significance. Following Green and Srinivasan (1978), those attributes that are most frequently regarded as relevant for consumers were identified through expert and group interviews. As economic shocks, e.g. livestock loss, affect all members of a household, gender-sensitive group discussions were carried out concerning issues like ownership and use of assets, labor division and decision-making, as well as risks, management strategies and social networks. Based on this information, the questionnaire for the ACA was developed and divided into a conjoint and a non-conjoint part. Combining the traits of a potential livestock microinsurance scheme, for instance ‘insured animal’, with respondents’ explanatory background variables (e.g. ‘gender’ and ‘wealth strata’) provides more profound insights into the design of suitable and adapted livestock insurance products. The exclusive analysis of the conjoint data, the ‘average importances’ of the attributes, as well as the ‘average utilities’ of the attribute levels tells only part of the story. Only by including the non-conjoint data can the real demand for a certain product be assessed, in this case livestock insurance for ethnic minority farm households in northern Vietnam.

The non-conjoint part offers the option of including additional questions into the analysis that are asked at the beginning and therefore (1) serve as an ice-breaker and (2) have the provide more information without substantially prolonging the interview time. In this ACA, the following non-conjoint issues were included in the questionnaire: gender, age and wealth strata of the respondent, number of working family members in the household, preferences concerning certain insurance schemes and level of premiums, as well as ability to pay. The questions in the conjoint part relied on the attributes and levels listed in Table 4.1. With respect to the respondents’ time availability and in order to retain the necessary clarity, the number of attributes and levels were kept as low as possible.

4.4.2 Use of Stimuli

In order to ensure that future insurance products reflect the necessities and preferences of the potential clients, profound participation of the target group throughout the research process is important. In a challenging intercultural research context, where one has to deal with different languages, educational levels, illiteracy, as well as different perceptions of risks and problem solutions, the use of so-called stimuli reduces misunderstandings and improves communication. In this ACA, innovative stimuli in the form of black and white drawings were used to present attribute levels to the respondent (see Figure 4.1).

Table 4.1 Attributes and Levels of the ACA on Livestock Microinsurance

Attributes	Attribute levels
Insured animal	- buffalo
	- cow
	- pig
	- goat
	- poultry
Coverage	- death A (after accident)
	- death D (after disease)
	- death A&D (after accident & disease)
Payment	- monthly
	- yearly
Contract	- individual
	- group

Source: Own design

Figure 4.1 Examples of Black and White Drawings used as Stimuli in the ACA

The ACA-interview consists of a number of sections, each designed for efficiency in obtaining the information needed to estimate respondent preferences. The interviews employ the ‘paired comparison’ approach to collecting respondent trade-offs, and present concepts customized for each respondent, each composed of combinations of the abovementioned four attributes. In addition, level order presentation within an attribute can be randomized in ‘priors (rankings)’ to control for potential order presentation bias. Further sections in this ACA survey included ‘importances’ and ‘calibration concepts’. Stimuli were used throughout the conjoint portion of the ACA to simultaneously visualize the respective questions that were selected by the software and displayed on the laptop screen (see Figure 4.2).³⁶

³⁶ Figures 4.1 and 4.2 show pictures taken by I. Fischer.

Figure 4.2 Application of Stimuli during the ‘Ranking’ and the ‘Pairs’ Section of the ACA-Interview



4.5 Results

The empirically-derived results are twofold and can be divided into two components, one regarding content, another focusing on methodology. Starting with the latter, it can be summarized that jointly applying a ‘traditional’ tool such as black and white drawings and a computer-based ACA revealed very satisfactory results for all participants, researchers, interpreters and responding household members. The stimuli fully served their purpose of supporting the interview by “translating” the more or less complex attribute levels into visual aids. In order to ensure that all drawings were comprehensible, the interpreter explained the meaning of each drawing at the beginning. However, the respondents were able to ask for more information during the interview process. Second, by listening to the translator and working with the drawings, the smallholder farmers were less distracted by the laptop computer. The following sections will present major results of this ACA.

4.5.1 Smallholders’ ‘Knowledge of Insurance’ and ‘Ability to Pay’

The variables in the non-conjoint part of this ACA have two objectives that are closely interrelated; they were added to obtain more information on the demographic characteristics of the respondents, as well as the respondents’ knowledge and preferences concerning insurance. This information is crucial for private and public insurers in order to provide appropriate products and to assess whether the provision under these circumstances is cost-covering or even profitable. Only if the requirements of the target group are met and insurance products cover the real demand could insurance, in the long run, help to decrease household vulnerability.

By asking all respondents about their knowledge of ‘insurance’ (in general – not only livestock insurance), the following results were gained (cf. Table 4.2 and 4.3):

Table 4.2 ‘Knowledge of Insurance’ by Gender

	Total (N=151)	Male (N=83)	Female (N=68)
No, not at all	78	31	47
<i>in %</i>	<i>51.7</i>	<i>37.3</i>	<i>69.1</i>
Yes, I know a little bit	48	33	15
<i>in %</i>	<i>31.8</i>	<i>39.8</i>	<i>22.1</i>
Yes, I know insurance	25	19	6
<i>in %</i>	<i>16.6</i>	<i>22.9</i>	<i>8.8</i>

Source: Own data

Focusing on gender (Table 4.2), more than half (52%) of all respondents have no idea what insurance is or how it works. For female respondents, the percentage is even as high as 69%. Those who state that they have already heard about insurance (e.g. on TV) but have no idea how it works exactly or where they could buy it, make up approximately another third (32%), whereas the male share (40%) is almost double that of the female (22%). The percentage of participants that really know insurance and how it works is as low as 17% in total, by gender 9% of the females and 23% of the males.

Table 4.3 ‘Knowledge of Insurance’ by Wealth Strata

Knowledge of insurance	Total (N=151)	Wealth strata			
		Poor (N=21)	Average (N=107)	Better-off (N=18)	Rich (N=5)
No, not at all	78	15	59	2	2
<i>in %</i>	<i>51.7</i>	<i>71.4</i>	<i>55.1</i>	<i>11.1</i>	<i>40.0</i>
Yes, I know a little bit	48	5	31	11	1
<i>in %</i>	<i>31.8</i>	<i>23.8</i>	<i>29.0</i>	<i>61.1</i>	<i>20.0</i>
Yes, I know insurance	25	1	17	5	2
<i>in %</i>	<i>16.6</i>	<i>4.8</i>	<i>15.9</i>	<i>27.8</i>	<i>40.0</i>

Source: Own data

Note: The hungry wealth stratum is not indicated, as none of the respondents belonged to this group.

Incorporating the respondent's wealth strata (Table 4.3), the results for the 'rich' are mixed, with 20% declaring that they know a little, while half of the remaining 80% either state they know nothing (40%) or everything (40%) about insurance. More than 70% of the 'poor' and

more than 55% of the ‘average’ are not familiar with insurance. While less than one-third (23% ‘poor’ / 29% ‘average’) state that they know a little, less than 5% (‘poor’) / 16% (‘average’) really know what insurance is. The results clearly differ for the ‘better-off’-group, where the majority (>61%) state to know a little and 27% declare to really know the concept of insurance.

After explaining the basic concept of insurance to the unknowing majority, the respondents were asked about their preferences concerning varying possible insurance schemes, premium payment and ability to pay. As displayed in Table 4.4, the majority (53%) favor a combined ‘credit & insurance’ package. About one-third (32.5%) select the ‘saving & insurance’ option and only 14.6% choose the pure ‘insurance’ option.

Table 4.4 Possible ‘Insurance Schemes’ by Gender

	Total (N=151)	Male (N=83)	Female (N=68)
Insurance	22	12	10
<i>in %</i>	<i>14.6</i>	<i>14.5</i>	<i>14.7</i>
Saving & insurance	49	23	26
<i>in %</i>	<i>32.5</i>	<i>27.7</i>	<i>38.2</i>
Credit & insurance	80	48	32
<i>in %</i>	<i>53.0</i>	<i>57.8</i>	<i>47.1</i>

Source: Own data

Furthermore, the respondents were asked if they would rather pay a lower premium and thus receive lower indemnity or pay a higher premium and accordingly receive higher indemnity in the case of a claim. In total, 37.7% of the respondents (men: 33.7%, women: 42.6%) choose the ‘lower premium’ option, while 62.3% of the respondents (men: 66.3%, women: 57.4%) prefer the ‘higher premium’ option. The preference for the ‘higher premium’ is verified in the results of the respondent’s ability to pay for insurance (see Table 4.5). Focusing on the results by wealth strata (Table 4.5), the majority of the ‘poor’ choose low premiums: 0-5,000 VND/year (33.3%) and 5,000-10,000 VND/year (38.1%), respectively. While the ‘average’ group achieved mixed results, both, the ‘better-off’ and the ‘rich’ group clearly favoured paying more than 40,000 VND/year (better-off: 44.4% and rich: 60%), followed by 20,000-30,000 VND/year (better-off: 27.8% and rich: 40%).

After presenting some results from the non-conjoint part of this ACA, the next sections will focus on results derived from the conjoint part of the ACA. First, looking at the average

importances, it appeared that the most important issue for the respondents is the ‘insured animal’ (35.6%). This confirms previous results from group discussions in different villages of the research area. The least important attribute is ‘contract’ (19.6%), which is the choice between individual and group contract. The remaining two attributes, ‘coverage’ (23.1%) and ‘premium payment’ (21.7%) are ranked second and third.

Table 4.5 ‘Ability to Pay’ by Wealth Strata

Ability to pay (VND/year)	Total (N=151)	Wealth strata			
		Poor (N=21)	Average (N=107)	Better- off (N=18)	Rich (N=5)
0 VND	1	-	1	-	-
<i>in %</i>	<i>0.7</i>		<i>0.9</i>		
0-5,000 VND	15	7	8	-	-
<i>in %</i>	<i>9.9</i>	<u><i>33.3</i></u>	<i>7.5</i>		
5,000-10,000 VND	33	8	22	3	-
<i>in %</i>	<i>21.9</i>	<u><i>38.1</i></u>	<i>20.6</i>	<i>16.7</i>	
10,000-20,000 VND	33	4	27	2	-
<i>in %</i>	<i>21.9</i>	<i>19.0</i>	<i>25.2</i>	<i>11.1</i>	
20,000-40,000 VND	31	1	23	5	2
<i>in %</i>	<i>20.5</i>	<i>4.8</i>	<i>21.5</i>	<i>27.8</i>	<i>40.0</i>
>40,000 VND	38	1	26	8	3
<i>in %</i>	<i>25.2</i>	<i>4.8</i>	<i>24.3</i>	<u><i>44.4</i></u>	<u><i>60.0</i></u>

Source: Own data

Note: The hungry wealth stratum is not indicated, as none of the respondents belonged to this group.

4.5.2 The ‘Insured Animal’ Attribute

Focusing on the ‘insured animal’ attribute of the conjoint part and combining it with the ‘gender’ variable of the non-conjoint part, the following results can be presented (cf. Table 4.6): First, the impressive position of the buffalo remained unchanged. Both male and female respondents consider it the most important animal and therefore would first insure the family’s buffalo. As in the total sample, poultry and goats are considered the least attractive for insurance. Second, the remarkable last position of the goat can be explained by the fact that only a minority of all households possess goats, whereas most other animals are more or less common in each household. Usually an average household will possess at least one

buffalo (or a bull and/or a cow), one/a few pigs and a few chickens³⁷. Very poor households often lack a draught animal or do not possess any animals.

Table 4.6 Average Utility Values of the ‘Insured Animal’ Attribute Levels by Gender

	Total (N=151)	Male (N=83)	Female (N=68)
Buffalo	51.16	57.28	43.70
Cow	14.49	17.34	11.02
Pig	2.69	-5.41	12.57
Poultry	-22.74	-26.14	-18.59
Goat	-45.60	-43.06	-48.71

Source: Own data

Cows are usually raised as in-kind savings and are commonly financed by bank loan. Focusing on the data for cows and pigs, it turned out that male respondents clearly prefer insurance for cows (17.35), whereas pig insurance even has a negative utility value (-5.41). In contrast, female respondents prefer pig insurance (12.57) and insurance for cows is ranked third (11.02). One reason for this result might be the traditional Vietnamese division of labor. Participatory, qualitative research reveals that women (besides other tasks) are usually responsible for housework, including the breeding of pigs. Male household members are usually in charge of the big ruminants, although women and children also take big ruminants for grazing. All in all, large ruminants are a crucial part of the household’s physical capital assets and therefore considered worthy additional expenditures, e.g. insurance premiums. Small livestock like pigs, which play a very important role in poorer households, are usually only considered worth insuring by those households that do not possess large ruminants.

4.5.3 The ‘Coverage’, ‘Contract’ and ‘Payment’ Attributes (by Gender)

Taking a closer look at the interrelation of the other three attributes with the ‘gender’ variable, the following results were revealed (Table 4.7): There is no gender difference concerning the ‘coverage’ attribute; both male and female respondents follow the trend of the combined sample, where ‘death after disease’ is considered most important, followed by the mixed option ‘death after accident & disease’. The least attractive option, ‘death after accident’ was

³⁷ This statement has been true, at least before the Avian Influenza hit Vietnam in 2003/2004.

usually only chosen by those respondents residing close to the road or who had recently lost an animal through an accident.

A similar result was generated by the ‘contract’ attribute. Here, women and men agreed that an ‘individual’ contract is more desirable than a ‘group’ contract. During the interviews, respondents gave several reasons for their choice. The most common reason for an individual contract is the perception of having ‘less trouble’, as well as having the ‘freedom of choice’. Supporters of group contracts appreciate, for instance, the idea that a bigger part of all villagers would be included in the insurance scheme, which implies that everybody would take better care of their own animals and thus reduce the spread of diseases.

Table 4.7 Average Utility Values of the ‘Coverage’, ‘Contract’ & ‘Payment’ Attribute Levels by Gender

		Total (N=151)	Male (N=83)	Female (N=68)
Coverage	Death (D)	24.01	25.91	21.70
	Death (A&D)	19.58	18.09	21.41
	Death (A)	-43.60	-44.00	-43.11
Contract	individual	16.75	18.22	14.95
	group	-16.75	-18.22	-14.95
Payment	monthly	2.29	-4.36	10.40
	yearly	-2.29	4.36	-10.40

Source: Own data

For the remaining attribute ‘payment’, the analysis produced contradictory results. Women approved the overall result and preferred ‘monthly’ payments, while male participants mainly supported the ‘yearly’ payment option. The explanations for either option were almost identical during all interviews, hence, it may be summarized that a ‘monthly’ payment is more suitable for less wealthy households. In contrast, a ‘yearly’ premium payment is considered ‘easier’, because one doesn’t have to worry about it each month. The perfect time for the yearly payment would be after the maize harvest, when cash is more readily available in households.

4.5.4 The Distribution of Wealth

In Vietnam, households are classified once a year, according to their standard of living, into one of five classes: ‘hungry’, ‘poor’, ‘average’, ‘better-off’, or ‘rich’. The ranking is based on the household’s monthly income. The threshold for classifying ‘hungry’ and ‘poor’

households is defined by the Ministry of Labour, Invalid and Social Affairs (MOLISA). The communes can adjust the boundaries only slightly depending on the local situation³⁸.

In order to obtain more significant information concerning the demand for livestock insurance in households with different income levels, the 'wealth strata' variable was applied in the analysis. The results of the analysis of the 'average utility' values, as well as the 'average importances', are summarized in Table 4.8.

Starting with the 'average importances', the most important issue to all respondents remains the 'insured animal' attribute. The three remaining attributes, 'coverage', 'payment' and 'contract' change their ranking in different wealth groups. Average households, which mainly determined the total results, considered 'coverage' more important than 'payment'. The least important attribute is 'contract'. Both the 'better-off' and the 'rich' households ranked 'coverage' second. 'Contract' was considered more important than 'payment'. In contrast to all other groups, the 'poor' consider the 'payment' attribute second most important before 'contract' and 'coverage'.

Focusing on the average utility values of the 'insured animal' attribute, the abovementioned striking preference for the buffalo remains unchanged for all wealth groups. Whereas the 'poor' only focus on the buffalo³⁹, other groups also consider insuring their cows and pigs (only the 'average' and 'better-off'). Taking a closer look at the levels of the 'coverage' attribute, the 'better-off' prefer to cover 'death after accident & disease', while all others choose 'death after disease'. 'Death after accident' was uniformly ranked last. Likewise, only the 'better-off' favored 'yearly' payment, whereas all other wealth groups prefer 'monthly' payment. Finally, the households of all four groups select an 'individual' rather than a 'group' contract.

³⁸ For example, the classifications in Xuan La and Nghien Loan communes (Bac Kan province) for the years 2001-2005 (the research period) were (in VND person⁻¹ month⁻¹): 'hungry': <55,000/60,000; 'poor': <80,000; 'average': 80,000 – 150,000/180,000; 'better-off': >150,000/200,000; 'rich': >4.5mio VND person⁻¹ year⁻¹. The classifications were considerably increased for the years 2006-2010. For example, in Xuan La commune (in VND person⁻¹ month⁻¹): 'hungry': <100,000; 'poor': <200,000; 'average': >200,000; 'better-off': >300,000 (Source: own data, personal communication with commune officials; 07.09.2004).

³⁹ Although the 'poor' might not possess a buffalo right now, it was repeatedly mentioned during the interviews that they would be willing to spend some of their scarce money to buy buffalo insurance, because the buffalo is the most valuable animal. In contrast, poultry insurance is not requested by anybody.

Table 4.8 Average Utility Values and Average Importances by Wealth Strata

		Total (N=151)	Wealth strata			
			Poor (N=21)	Average (N=107)	Better-off (N=18)	Rich (N=5)
Average utility values						
Insured animal	buffalo	<u>51.16</u>	<u>61.45</u>	<u>49.35</u>	<u>51.74</u>	<u>44.79</u>
	cow	14.49	-1.66	14.72	28.22	28.16
	pig	2.69	-4.52	5.42	1.95	-22.93
	goat	-45.60	-46.50	-43.75	-61.74	-23.46
	poultry	-22.74	-8.77	-25.74	-20.17	-26.56
Coverage	death (A)	-43.60	-24.55	-45.83	-47.43	-62.06
	death (D)	<i>24.01</i>	<i>18.08</i>	<i>25.82</i>	<i>13.06</i>	<i>49.75</i>
	death (A&D)	19.58	6.47	20.01	<i>34.37</i>	12.31
Payment	monthly	2.29	27.22	0.90	-11.62	22.64
	yearly	-2.29	-27.22	-0.90	11.62	-22.64
Contract	individual	16.75	19.66	14.10	23.77	36.01
	group	-16.75	-19.66	-14.10	-23.77	-36.01
Average importances						
Insured animal		35.61	31.38	35.86	38.70	36.84
Coverage		<u>23.10</u>	15.19	<u>24.27</u>	<u>23.97</u>	<u>28.07</u>
Payment		21.71	<u>28.44</u>	21.24	17.96	17.08
Contract		19.59	25.00	18.64	19.37	18.01
Source: Own data						
Note: There were no 'hungry' households in the sample, thus this column is not displayed in the table.						

4.6 Conclusion and Recommendations

Up to now, there are no functioning insurance markets in mountainous, rural northern Vietnam. Therefore, farmers are still forced to sell assets, primarily livestock, when a livelihood emergency strikes. The situation grows even more acute if a household loses a credit-financed animal, which immediately increases household vulnerability, substantially limits its long-term livelihood strategies, and very often directly sustains poverty or makes them slip into poverty.

Based on the above presented results, it can be concluded that both men and women are in general interested in livestock insurance, although only a very small percentage of potential clients is really familiar with the concept of insurance. Out of the informed minority, some

have already had negative experiences with previously held insurance products (including different kinds of products, e.g. motorbike insurance or health insurance). Nevertheless, respondents of all wealth strata emphasized their demand for products, e.g. livestock insurance, which helps them to reduce their vulnerability and enables them to cope more easily with livelihood emergencies. Taking into consideration the four analyzed attributes, it turned out that the ‘insured animal’ is the most important attribute for all respondents and the buffalo is the most valued animal. Regarding the pivotal role of buffalos in the farming systems of mountainous, rural northern Vietnam, private and/or public insurance companies may want to offer suitable insurance packages.

The critical question is how to design such an insurance package? Although the provision of adapted livestock insurance could help to decrease household vulnerability, a suitable concept is difficult to develop for the insurance companies, which have to work profitably. All in all, the insurance products should be suitable for a variety of households (male/female, poor/average/better-off) and at least include the option to choose the ‘insured animal’, ‘coverage’, terms of ‘payment’ and form of ‘contract’. In addition, analysis of data revealed that most respondents would prefer a mixed product that combines ‘insurance & credit’ or ‘insurance & saving’.

The advantages of combining insurance services with other financial products is, for instance, the existing infrastructure of the financial institutes in the district towns, which would be attractive for insurance providers. However, the existing disadvantages, such as long distances to the next bank, including high transportation costs; difficult and incomprehensible contracts; language problems; etc., would remain the same for the clients. A better option may therefore be the supply of microinsurance through a ‘middleman’, e.g. the village headman, directly in each village or the commune. In general, the most important precondition for a suitable insurance scheme is the transfer of all necessary information to the potential clients (e.g. in their own ethnic minority language), who should know exactly how insurance works, which losses are covered and where and how they can submit their claims.

In summary, the empirically-derived results suggest that the innovative joint application of ‘traditional’ black and white drawings with a computer-based ACA revealed very satisfactory results. The stimuli fully served their purpose of supporting the interview by “translating” the more or less complex attribute levels into visual aids. Hence, the respondents were not overstrained with the ACA. On the contrary, most were happy to share additional information, often in combination with a few glasses of homemade rice wine.

Although not analysed in detail in this paper, parallel qualitative research indicates that improved veterinary service is a crucial pre-condition for both the supplier as well as the potential client of livestock insurance. The lack of skilled veterinary staff (at the village and commune level), combined with high expenses for (often unsuitable) medical treatment increases the expenses of affected households, leads to higher losses and thus also harms insurance companies. Furthermore, the lack of skilled extension workers in the research area is currently only partly covered through mass-organizations like 'Women Union' or 'Farmers Union', which are quite successful in some villages, but are not yet able to reach all households. Finally, it has to be mentioned once again that poor farmers (which were included in this analysis) often do not possess large ruminants. In addition, they are usually not able to pay insurance premiums that would cover the costs of private insurance providers. Hence, separate solutions have to be found, e.g. by adding an insurance component to already existing support projects like the Hunger Eradication and Poverty Reduction (HEPR) program in Vietnam.

In order to stop the gradual downward spiral trend of many smallholders in Northern Vietnam and to guarantee sustainable development for vulnerable households, a bundle of strategies have to be initiated. All actors will have to focus on locally-adapted risk management strategies, e.g. micorinsurance. The basis of the strategies has to be respective access to different capital assets, especially existing financial institutions. The combination of credit and insurance, especially for credits that are taken to purchase livestock, might help people decrease household vulnerability and save them from slipping into poverty.

5 Health and Poverty as Challenges for Human, Health and Livelihood Security: Two Case Studies on Northern Vietnam and Bangladesh⁴⁰

This chapter presents two case studies on Vietnam and Bangladesh in order to review the linkages of poverty, health and human security in developing countries. Based on current debates of the concept of human security, particularly in Asia, the countries' achievements in terms of poverty alleviation and improvements in the health sector are analyzed.

5.1 Introduction

About one fifth of the world population, that is 1.2 billion people, live in extreme income poverty with less than one US \$ a day. Another 1.6 billion have less than two US \$ a day (CHS 2003: 73). Most of the poor live in severe livelihood uncertainty and lack access to basic education and health services. The United Nations' *Millennium Development Goals* (MDGs) aim at cutting poverty in half by the year 2015. As health⁴¹ is considered crucial for poverty reduction, three MDGs focus directly on health, covering maternal mortality, infant mortality, HIV/AIDS, malaria and tuberculosis (TB). The MDGs 4-6 directly concern health issues, while other MDGs such as goal three ("Promote gender equality and empower women") and seven ("Ensure environmental sustainability") deal with nutrition, water and sanitation and thus impact on health⁴² (see Figure 5.1).

Figure 5.1 Millennium Development Goals on Health Issues

The Millennium Development Goals (MDGs) are eight goals to be achieved by 2015 that respond to the world's main development challenges. The MDGs are drawn from the actions and targets contained in the *Millennium Declaration* that was adopted by 189 nations-and signed by 147 heads of state and governments during the UN Millennium Summit in September 2000.

The 8 MDGs break down into 18 quantifiable targets that are measured by 48 indicators.

- Goal 1: Eradicate extreme poverty and hunger
- Goal 2: Achieve universal primary education
- Goal 3: Promote gender equality and empower women
- Goal 4: Reduce child mortality

⁴⁰ This section is based on the following article: "Health and Poverty as Challenges for Human, Health and Livelihood Security: Two Case Studies on Northern Viet Nam and Bangladesh", written by Isabel Fischer and M.M. Salehin and published 2009 in H.G. Brauch et al. (Eds): *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts*, pp. 563-572. Hexagon Series on Human and Environmental Security and Peace, vol. 4 (Berlin – Heidelberg – New York: Springer-Verlag; www.springerlink.com)

⁴¹ Health is defined by the Commission on Human Security (CHS 2003: 96) not just as the absence of disease, but as "a stage of complete physical, mental and social well-being".

⁴² WHO, 2005: "Fact sheets: Health, poverty and MDG", at: <http://www.wpro.who.int/media_centre/fact_sheets/fs_20050621.htm>.

- Goal 5: Improve maternal health*
- Goal 6: Combat HIV/AIDS, malaria and other diseases*
- Goal 7: Ensure environmental sustainability*
- Goal 8: Develop a Global Partnership for Development*

The MDGs 4-6 and the targets 5-8, and indicators 13-24 are devoted to Health Issues

Goal 4: Reduce child mortality

Target 5: Reduce by two thirds the mortality rate among children under five

- 13. Under-Five Mortality Rate (UNICEF)
- 14. Infant Mortality Rate (UNICEF)
- 15. Proportion of 1 year-old Children Immunised Against Measles (UNICEF)

Goal 5: Improve maternal health

Target 6: Reduce by three quarters the maternal mortality ratio

- 16. Maternal Mortality Ratio (WHO)
- 17. Proportion of Births Attended by Skilled Health Personnel (UNICEF)

Goal 6: Combat HIV/AIDS, malaria and other diseases

Target 7: Halt and begin to reverse the spread of HIV/AIDS

- 18. HIV Prevalence Among 15-24 year-old Pregnant Women (UNAIDS)
- 19. Condom use rate of the contraceptive prevalence rate and Population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS (UNAIDS, UNICEF, UN Population Division, WHO)
- 20. Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years

Target 8: Halt and begin to reverse the incidence of malaria and other major diseases

- 21. Prevalence and Death Rates Associated with Malaria (WHO):
- 22. Proportion of Population in Malaria Risk Areas Using Effective Malaria Prevention and Treatment Measures (UNICEF):
- 23. Prevalence and Death Rates Associated with Tuberculosis (WHO):
- 24. Proportion of Tuberculosis Cases Detected and Cured Under Directly-Observed Treatment Short Courses (WHO)

Goal 7. Ensure environmental sustainability

Target 9: Integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources

- 25. Forested land as percentage of land area (FAO)
- 26. Ratio of Area Protected to Maintain Biological Diversity to Surface Area (UNEP)
- 27. Energy supply (apparent consumption; Kg oil equivalent) per \$1,000 (PPP) GDP (World Bank)
- 28. Carbon Dioxide Emissions (per capita) and Consumption of Ozone-Depleting CFCs (ODP tons):

Target 10: Reduce by half the proportion of people without sustainable access to safe drinking water

- 30. Proportion of the Population with Sustainable Access to and Improved Water Source (WHO/UNICEF)
- 31. Proportion of the Population with Access to Improved Sanitation (WHO/UNICEF)

Target 11: Achieve significant improvement in lives of at least 100 million slum dwellers, by 2020

- 32. Slum population as percentage of urban population (secure tenure index) (UN-Habitat)

Implementation of the MDGs

In 2005, the Secretary-General prepared the first comprehensive five-yearly report on progress toward achieving the MDGs. The report reviews the implementation of decisions taken at the international conferences and special sessions on the least developed countries, progress on HIV/AIDS and financing for development and sustainable development.

Source: United Nations Millennium Declaration, at: <<http://www.un.org/millennium/>>; UNDP (2000): Millennium Development Goals, at: <<http://www.undp.org/mdg/basics.shtml>> and at: <<http://www.undp.org/mdg/goallist.shtml>>.

The concept of ‘human security’ has emerged slowly but steadily over the 1990’s –influenced by the end of the Cold War, the awareness of previously neglected insecurities and globalization– and the question was raised about the expected implications of this concept for health and human development (Chen/Narasimhan 2003). There are various definitions⁴³ of ‘human security’, which obviously “means different things to different people”⁴⁴.

This chapter applies the definition of the Commission on Human Security (CHS), that stated as the objective of human security “to protect the vital core of all human lives in ways that enhance human freedoms and human fulfilment” (CHS 2003: 4).

The emergence of the concept of ‘human security’ will be briefly reviewed (5.2), before focusing on human, livelihood and health security (5.2.1) including current debates of human and health security in South and Southeast Asia (5.2.2) as well as the linkages of poverty, health and human security (5.2.3). Empirical evidence will be presented based on two case studies (5.3.) on Vietnam (5.3.1) and Bangladesh (5.3.2). Lessons learned (5.3.3) will be summarized, before turning to the conclusions (5.4).

5.2 The Concept of Human Security

Today’s idea of human security is generally thought to go back to the United Nations Development Program (UNDP) report of 1994 and Mahub ul Haq⁴⁵. The UNDP Report stressed that “the concept of security must change – from an exclusive stress on national security to a much greater stress on people’s security, from security through armaments to security through human development, from territorial security to food, employment and environmental security” (UNDP 1994: 2). The report calls for “faster economic development, greater social justice and more people’s participation ... (for) the new concepts of human security” (UNDP 1994: 3). Human security was defined as “...safety from chronic threats as hunger, disease and repression...and protection from sudden and harmful disruptions in the pattern of daily life” (UNDP 1994: 24).⁴⁶

⁴³ Cf. Sabina Alkire, 2002: “Conceptual Framework for Human Security” (Excerpt: Working Definition and Executive Summary); at: <<http://www.humansecurity-chs.org/activities/outreach/frame.pdf>>.

⁴⁴ Lincoln C. Chen and Vasant Narasimhan, 2002: “Health and Human Security - Pointing a Way forward”; at: <http://www.fas.harvard.edu/~acgei/Publications/Chen/LCC_Health_and_HS_way_forward.pdf>.

⁴⁵ Kanti Bajpai, 2001: “Human Security: Concept and Measurement”, posted on 21-06-2001; at: <<http://www.cpdindia.org/globalhumansecurity/measurement.htm>>.

⁴⁶ The UNDP report identified seven categories of human security: economic security (freedom from poverty), food security (access to food), health security (access to health care and protection from

In 2003, the CHS, supported by the Japanese government and co-chaired by Sadako Ogata and Amartya Sen, has released its version of the holistic approach. Overall, human security is a multi-faceted concept that articulates the following issues: human rights, rule of law, democracy, accountability, participation, empowerment, diversity, conflict resolution, peace, income security, poverty, food security, health security, and sustainability.

These two policy reports, the different approaches of Canada ('freedom from fear'; see De-dring 2008) and Japan ('freedom from want', see chap. 84 by Shinoda in Brauch et al. (2009)), as well as the policy agenda of the Human Security Network (HSN, see chap. 75 by Fuentes in Brauch et al. (2009)) were accompanied by an intensive scientific discourse (Brauch 2003; 2005, 2005a, 2008, 2008a, 2008b) that gradually spread from the OECD world (North America, Europe, Asia Pacific) to the developing countries with a special interest in South and Southeast Asia (chap. 76 by Sabur in Brauch et al. (2009)). From this 'Southern' perspective, human security concerns were conceptually linked with other debates on livelihood (chap. 37 by Bohle in Brauch et al. (2009)) and health security (chap. 38 by Rodier/Kindhauser as well as chap. 39 by Leaning in Brauch et al. (2009)).

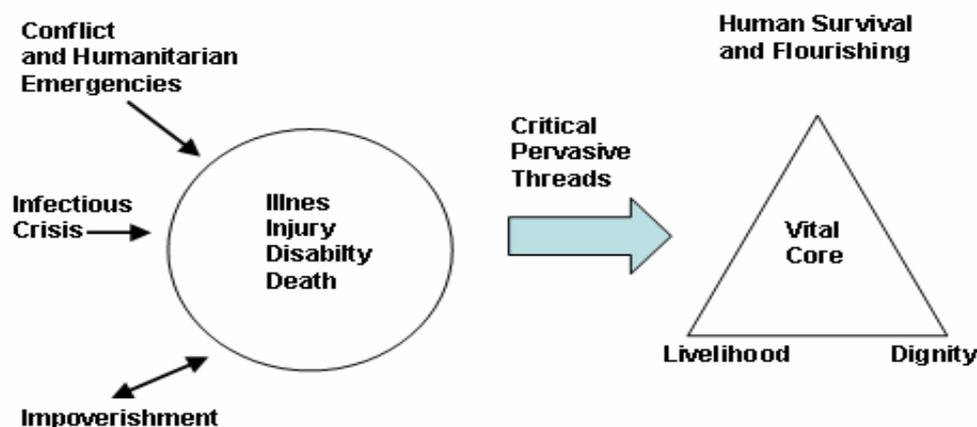
5.2.1 Human, Livelihood and Health Security

Following Chen/Narasimhan (2003) health and human security are tightly interlinked and several major policy papers on health and human security were produced. Poor health – illness, injury, disability, and death – are critical threats to human security. Figure 5.2 displays relevant linkages that occur due to (1) violence and conflict, (2) global infectious diseases and (3) poverty and inequity.

The recognition of the linkages between health and development has grown on the global political agenda (cf. UN's MDGs in Figure 5.1). According to Acharya (2000)⁴⁷, however, the concept of human security, which has attracted much attention in the West, remains poorly understood and contested in Asia. The next part will briefly review current debates in Asia.

diseases), environmental security (protection from the danger of environmental pollution), personal security (survival of traditional cultures and ethnic groups), community security (physical protection against torture, war, criminal attacks, domestic violence) and political security (civil and political rights, freedom from political oppression).

⁴⁷ Amitav Acharya, 2000: "Human Security in the Asia Pacific: Puzzle, Panacea or Peril?", posted on 24 October 2000; at: <<http://www.cpsindia.org/globalhumansecurity/puzzlepanacea.htm>>.

Figure 5.2 Human Security and its Relationship to Health.

Source: Chen/Narasimhan (2003: 6).

5.2.2 Conceptual and Empirical Debates on Human and Health Security in South and Southeast Asia

In contrast to the international appearance of the human security concept in the post-Cold War area, its emergence in Asia can be linked to the Asian financial crisis of 1997. Following Acharya (2000)⁴⁷, ongoing debates over the exact definition and scope of human security persist in Asia, as elsewhere. Many definitions have adopted a holistic concept, tackling human rights, environmental degradation, poverty, crime, terrorism, gender and social biases, health and natural disasters⁴⁸.

Japan and Thailand have most vigorously promoted the broader approach, which was favoured by several Asian intellectuals, among them Tadashi Yamamoto (Japan Center for International Exchange), some members of ASEAN and the Institute of Strategic and International Studies (ISIS) group, as well as Obuchi Keizo, Surin Pitsuwan, and Kim Dae-jung (Evans 2004). Despite varying conceptions, the key lesson of the Asian crises is that it would be counterproductive to pursue a notion of human security through economic growth and political stability alone - without regard to human rights and democratization.

⁴⁸ Many Asian scholars argue that the broad range of threats constituting the human security paradigm is a rehash of the old Asian notion of “competitive security” developed by Japan and the Association of Southeast Asian Nations (ASEAN) members – however the emphasis on human rights, which is missing in the competitive security approach, is crucial for a conceptual differentiation of both concepts. While some scholars regard human security in terms of its economic and social aspects (social safety nets, poverty alleviation) others stress its political dimension (e.g. human rights) (Acharya 2000, footnote 47 on previous page).

Three case studies on health issues in Cambodia, Indonesia and the Philippines show how the concept of human security is translated into action in Southeast Asia.⁴⁹ Human security has the potential to act as a viable policy framework in addressing urgent problems. Primary health care is such an issue. It is not yet considered a priority by most policymakers who often care more about jobs and inflation. A similar reasoning can be found in Gutlove/Thompson (2003). They argue that health is a crucial concern for human security. The concern for health provides a context for building partnerships across disciplines, sectors and agencies – offering the potential for discussing and acting upon shared interests and mutual vulnerabilities.

Focussing on South Asia, Abdus Sabur (2003 and chap. 76 in Brauch et al. (2009)) provides an overview on regional human security debates. In contrast to other regions, an overall emphasis on national security –against human security– has severely deteriorated the security situation (particularly in India and Pakistan) and significantly increased security concerns. Eventually, it has transformed South Asia into the poorest and most deprived region of the contemporary world. However, Najam (2003) shows that the South Asian experience can contribute to the larger literature on human security and sustainable development by arguing “that chronic and structural impoverishment – rather than resource scarcity alone – forges the connection between environmental degradation and conflict. It also states that poverty and weak institutions of governance are the more immediate triggers of environmental insecurity” (Najam 2003a: 59).

5.2.3 Poverty, Health and Human Security

The relationship between poverty, health and human security (cf. Figure 5.3) was vividly revisited during the Asian financial crises, when millions of people were suddenly impoverished due to macroeconomic shocks⁵⁰. Global infectious diseases, poverty-related threats, and violence and crisis are three health challenges that are closely linked to human security (chap. 17 by Benz in Brauch et al. (2009)).

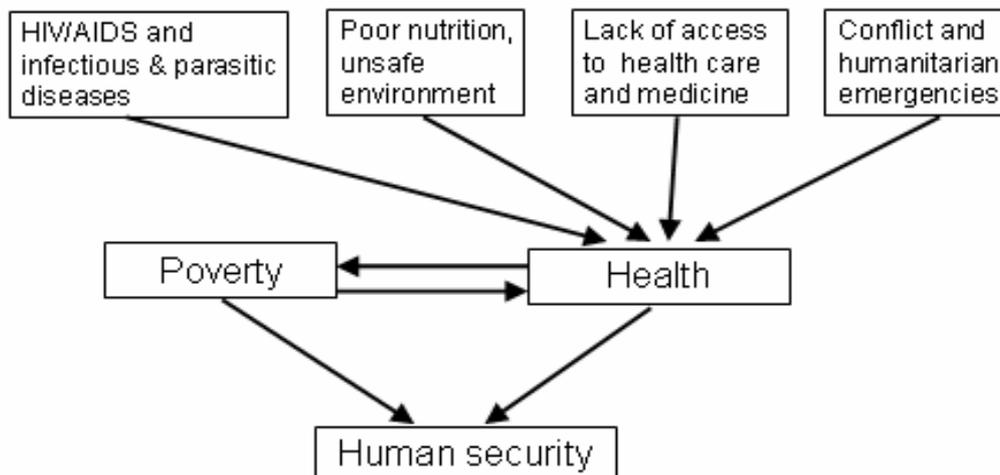
According to the CHS (2003), poverty and disease produce a vicious spiral with negative economic and human consequences as not only is people’s health severely affected by poverty, but at the same time, ill health can lead to poverty. Lack of access to nutritious food,

⁴⁹ Mely Caballero-Anthony, 2002: “Overview of Health and Human Security Case Studies”, in: *Health and Human Security: Moving from Concept to Action – Fourth Intellectual Dialogue on Building Asia’s Tomorrow*; at: <http://www.jcie.or.jp/thinknet/pdfs/health_overview.pdf>.

⁵⁰ The connections between poverty, health and insecurity were highlighted by the World Bank’s series of *Voices of the Poor* studies for its *World Development Report 2000* (Washington, D.C.: World Bank, 1999).

safe water and sanitation facilities, and poor or overcrowded housing make people vulnerable to illness which are caused by poverty. For the poor with a fragile livelihood, sickness may deprive the family of daily wages and compulsory health expenditures may put enormous pressures on their limited capital assets.

Figure 5.3 Health, Poverty and Human Security Interactions



Source: Salehin (2005: 10).

Poverty and infectious diseases are fellow travellers. The poor are at higher risk of infectious diseases, and sickness can deepen poverty, creating again a vicious cycle of illness and poverty. About 80 per cent of the total population is living in developing countries where 90 per cent of those with HIV/AIDS are living. In contrast to Eboko and Nemeckova (chap. 40 in Brauch et al. (2009)) Fenton (2004) argues that there is a positive correlation between HIV prevalence and poverty whether it is measured in gross domestic product (GDP) per capita, income inequality or the Human Poverty Index (HPI)⁵¹.

Furthermore, health issues are linked to gender security (Shepherd/Weldes 2008; chap. 89 by Serrano) and integrated into Human, Gender and Environmental Security (chap. 88 by Oswald and Oswald 2001 in Brauch et al. (2009)). Worldwide, 70 per cent of the poorest people are women and children who suffer from malnutrition, illiteracy and severe health problems. Female education has a positive correlation with child health and child education. Gender inequality, female poverty and poor-health issues keep a part of the workforce away from participating in income generating activities (Derbyshire 2002 cited in Thomson 2004).

⁵¹ The HPI attempts to assess the percentage of the population suffering from a variety of basic deprivations, and which ranks 95 developing countries for which adequate data are available.

Thiesmeyer (2005)⁵² argues that for women in developing countries, the capabilities of education and health are less dependent on progressive national politics, but more on the availability of facilities in walking distance as women often lack time and transportation to reach existing facilities.

About 30 per cent of the world population lack access to essential medicine. This applies to over 50 per cent of the poorest parts in Africa and Asia (WHO 2004). Data on life expectancy at birth show that it ranges from 38 years in Sierra Leone to 82 years in Japan⁵³. Clearly, this huge gap can be minimized if more efforts are undertaken to control major diseases, improve health systems and minimize the level of poverty (Marmot 2005). Two case studies on Bangladesh and Vietnam will discuss in detail the poverty and health links and their impacts for 'human' and 'livelihood security'.

5.3 Case Studies on Northern Vietnam and Bangladesh

Two case studies were selected to explain why health and its link to poverty has become crucial for human security. The first case on Northern Vietnam⁵⁴ reviews health as a major human capital asset, and poverty in the livelihoods of ethnic minorities. The second case on Bangladesh⁵⁵ focuses on the general health situation. Based on findings from both cases the results and their impact on human security will be discussed.

5.3.1 Case Study on Northern Vietnam

Despite the achievements of the '*doi moi*' reform process⁵⁶, which was launched in 1986, Vietnam is still one of the poorest countries in the world, with 28.9 per cent (50.9 per cent in

⁵² Lynn Thiesmeyer, 2005: "Gender, Public Health and Human Security Policy in Asia", at: <http://www.un.org/womenwatch/daw/egm/enabling-environment2005/docs/EGM-WPD-EE-2005-EP_2_%20L_Thiesmeyer.pdf>.

⁵³ WHO, 2005: The World Health Report 2005 – Make Every Mother and Child Count (Geneva: WHO); at: <<http://www.who.int/whr/2005/overview/en/index.html>>.

⁵⁴ This case study is based on Fischer (2005). The research was carried out within the framework of the German-Thai-Vietnamese Collaborative Research Programme 'Sustainable Land Use and Rural Development in Mountainous Regions of Southeast Asia'. Funding from the Deutsche Forschungsgemeinschaft (DFG) and co-funding from the Ministry of Science, Technology, and Environment of Vietnam is acknowledged.

⁵⁵ This case study is based on Salehin (2005). The research was carried out at the Centre for Peace Studies, University of Tromsø, Norway.

⁵⁶ Vietnam's economy grew by 7.2 per cent in 2003 despite challenges from the Severe Acute Respiratory Syndrome (SARS) and a lacklustre global economy. In the first quarter of 2004, the economy faced the challenge posed by the Avian flu, which overall economic impact remains relatively negligible and disruptions to the general economy have been avoided. See: World Bank:

2003) of the total population (85 million in 2004) living below the national poverty line⁵⁷. Especially the mountainous, rural areas of Northern Vietnam are underdeveloped and the poverty rate in this region was still 68 per cent in 2002, which is the highest in Vietnam (World Bank 2003). In the HDR 2007/2008 Vietnam is ranked 105 out of 177 countries with a HDI⁵⁸ of 0.733 (Table 5.1). This development reflects the country's successful attempts to reduce poverty. Nevertheless, vulnerable groups are still affected by poverty and insecurity. According to the Vietnamese Ministry of Labour, Invalids and Social Affairs (MOLISA), vulnerable groups are women, ethnic minorities, those with low education or illiterates, the disabled and the ill, families with many children, especially when they do not have enough labour and more generally the poor and hungry, but also those above or near the poverty line (Conway/Turk 2001).

The Vietnam's Health Sector Report (World Bank 2001a) states that many of the '*doi moi*' reforms affected the health sector (e.g. the introduction of user fees for health services, legalization of private medical practice and the deregulation of the retail trade in drugs and medicines) and thus the household's health seeking behaviour. A study by Tuan (2004)⁵⁹ provides insights into the provincial rural health system ten years after the health sector reform was launched.

Health insurance services offered by the Vietnamese government are still limited to some target groups, making up to 20 per cent of the labour force and a fraction of students as well as about 20 per cent of the poor (ILO 2004). Other previously initiated transfer programmes (e.g. free basic healthcare under the Hunger Eradication and Poverty Reduction (HEPR) programme) only supported few people to escape poverty and protected even fewer from slipping into poverty (Van de Walle 2003). All remaining people, including most of the households in

"Vietnam Country Brief, 2005"; at: <<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/VIETNAMEXTN/0,menuPK:387575~pagePK:141132~piPK:141107~theSitePK:387565,00.html>>.

⁵⁷ UNDP, 2007: "HDR 2007/2008 – Country Data Sheet Viet Nam", at: <http://hdrstats.undp.org/countries/data_sheets/cty_ds_VNM.html>.

⁵⁸ The HDI measures achievements in key areas of human development, such as standard of living, health and education. Vietnam's HDI has continued to steadily improve since the mid-1980s, from 0.590 in 1985 to 0.672 in 1995, 0.711 in 2000 and 0.733 more recently.

⁵⁹ Tuan Tran: "Community-Based Evidence about the Health Care System in Rural Vietnam", University of Newcastle, 2004, in: Australian Digital Theses Program; at: <<http://www.newcastle.edu.au/service/library/adt/public/adt-NNCU20050806.101920/index.html>>.

the Northern Uplands, still have no access to formal insurance services and thus have to rely on their own risk management strategies⁶⁰ in case of a crisis.

Empirical evidence (Fischer 2005) shows that limited endowment with and access to capital assets and institutions, as well as human and economic risks are the main components affecting rural livelihoods⁶¹. The Sustainable Livelihood Framework (SLF) of the Department for International Development (DFID), UK, was applied for investigating the complex livelihoods of people in a given vulnerability⁶² context (Carney/Drinkwater/Rusinow/Neefjes/Wanmali/Singh 1999), including the socio-economic structure of society at large and their formal and informal institutions. According to DFID's SLF approach, people have access to five forms of capital assets, i.e. natural, physical, human, social, and financial capital assets. Health, beside education, is one of the most important human capital assets, which helps the poor to increase their income and thus reduce vulnerability.

Decision-making is linked to the ownership of capital assets. Formally, ownership is mostly in the hands of men. They possess all livestock as well as the land right certificates. The latter is especially important as formal credit is given to those who possess land, thus it is difficult for a woman to obtain a credit from a bank⁶³. Population growth, intensified agricultural production, the strict implementation of forestry policies and individualized land use rights are main reasons for a dramatic reduction of grazing land in Northern Vietnam, which also

⁶⁰ While less vulnerable households often have access to so-called (ex-ante) adaptive risk management strategies (e.g. accumulation of savings in cash or kind), which keep the level of vulnerability lower, more vulnerable households have to rely preliminary on (ex-post) risk coping strategies (e.g. sale of livestock), which negatively affect its long-term development (Carney/Drinkwater/Rusinow/Neefjes/Wanmali/Singh 1999).

⁶¹ Chambers and Conway (1992) were among the first to give a scholarly definition of livelihood, as comprising "the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base" (Chambers/Conway 1992: 7-8).

⁶² Vulnerability refers to "the relationship between poverty, risk and efforts to manage risk" (Alwang/Siegel/ Jorgenson, 2001: 1). Vulnerable households are characterized by the potential for well-being to change in a negative direction or by no change within an existing negative status i.e. remaining in poverty (Conway/Turk 2001). This research applies the definition of Dercon (2002) that "vulnerable households are those likely to fall under an agreed poverty line over time with a particular high probability". In 2001, one third of the Vietnamese population lived in poverty and many of those who were not poor lived close to the poverty line. This sums up to 45 per cent of the population, if 'the vulnerable' are defined as the poor population in 2001 plus those who were near-poor within a line of 10 per cent above the poverty line (Conway/Turk 2001).

⁶³ According to Thomson (2004), the encouragement of female farmers to participate in credit and extension projects has largely succeeded and positive correlations between female loan-taking and rise in the knowledge level in families have been shown.

affects directly health management (Hager/Fischer 2005). Diminishing or disappearing natural resources have a negative impact on poor rural household's risk management as it limits their livestock raising potentials. In the absence of cash savings, livestock is commonly used as in-kind savings to be divested when cash is needed.

Dealing with financial assets, research showed that credit and financial transfers from informal sources are crucial, as no credit lines are available for health care so far. Even if people possess health insurance cards, they usually face additional expenses including costs for transport, special treatment and medication. People staying in hospital must further cover the expenses for food or a second family member has to provide food for the hospitalized person. A complex administration system and language difficulties are further constraints that are particularly faced by members of ethnic minority groups – especially women.

As suitable and accessible formal insurance markets hardly exist in developing countries, informal risk-sharing arrangements, so-called social networks, are crucial for the survival of the poor. In Vietnam gender, marital status, kinship and wealth influence the formation and size of social networks and within these networks, self-interest is the main motivation for helping each other (Beuchelt 2004). Hence, mutuality is of utmost significance and when not guaranteed or anticipated, support is very limited, even within the own family. Due to limited resource endowment, the capacities of networks of poor people are exhausted earlier than those of richer households. These informal risk-sharing networks provide basic support, but are insufficient to entirely buffer severe crisis of vulnerable households, thus intervention by the state is needed.

5.3.2 Case Study Bangladesh

In 2005, the population of Bangladesh was more than 153 million people, of whom 49.8 per cent live below the national poverty line⁶⁴. Even though significant progress could be reached in income and poverty reduction, poverty is still wide spread. During the 1990's the proportion of people below the poverty line declined by one per cent per annum while income inequality worsened, increasing faster in urban than in rural areas. In the HDR 2007/2008, Bangladesh is ranked as 140 out of 177 countries and its HDI value is 0.547 (cf. table 5.1).

The poor in Bangladesh receive very inadequate governmentally subsidized health care. They must finance health expenses themselves or rely on self treatment in case of illness. In most

⁶⁴UNDP, 2007a: "HDR 2007/2008 – Country Data Sheet Bangladesh", at: <http://hdrstats.undp.org/countries/data_sheets/cty_ds_BGD.html>.

cases, visiting a kobiraj (traditional healer) is used first and transfers to tertiary health care facilities occur at a very late stage. Especially in rural areas, most poor people are either unaware of these facilities or do not have access to formal health care at all. A union-level (lowest tier of government administration) health and family welfare centre, which is the nucleus of primary health care, usually provides the first contact between people and the health care system.

In 2006, less than 40 per cent of the population had access to modern primary health care services. If available at all, the quality of health care provided by the government and in private clinics is often very poor. Lack of appropriate diagnostic facilities, over prescription of antibiotics, post-operative infections, doctor absenteeism, inadequate nursing services, lack of attention for patients and lack of sensitivity to women patients are just some examples (GOB 2002). A discrimination against female children in the provision of food was noted (Chen/Huq/D'Souza 1981). Despite some progress regarding this sad issue, discrimination in health care for women and girls has persisted (Perry 2000).

The status of reproductive health is very unsatisfactory and in addition, HIV/AIDS is a severe threat. The reasons are poverty, lack of access to health care, illiteracy, social stigma and other factors, including micro-nutrient deficiency. Despite several improvements, the maternal mortality rate is still very high, with 3.2 to 4 maternal deaths per 1,000 live births, of which 25 per cent are associated with haemorrhage and anaemia, due to iron deficiency⁶⁵. According to the World Health Report 2005⁶⁶ children spend nearly 75 per cent of their life in illness, mostly due to malnutrition related debility and infections. Poor nutrition affects physical, cognitive and mental development.

Poor people must bear many hidden costs to get access to health service. They are exploited by the government medical staff with bribery, overcharging, and delay in the treatment of poor patients (Narayan 2002). People who visit private doctors must pay for the service. This may force them to reduce their current and future consumption or tap into the existing social networks. To ensure a more equitable and appropriate access to health services, it is essential to take the needs of previously underserved minority groups into account (WHO 2000).

While there has been substantial progress in disease prevention and control and a decline in childhood communicable diseases, new and old infectious diseases, such as malaria, tubercu-

⁶⁵ WHO, Bangladesh, 2005: "Health Profile of Bangladesh", at: <http://www.whoban.org/country_health_profile.html>.

⁶⁶ WHO, 2005: "The World Health Report 2005 – Make Every Mother and Child Count", at: <<http://www.who.int/whr/2005/overview/en/index.html>>.

losis (TB) and acquired HIV/AIDS are still important health threats (for more details see table 41.1). Malaria is a major public health problem in Bangladesh, where 13 out of 64 districts belong to the high-risk malaria zone, affecting 14.7 million people. TB is also a major public health problem and it is estimated that about 70,000 people die every year in Bangladesh.

According to UNAIDS estimates Bangladesh had about 18,000 adults and children living with HIV infection at the end of 2005. Significant underreporting of cases occurs because of the country's limited voluntary testing and counselling capacity and social stigma, which leads to the fear of being identified and detected as HIV positive. Risk factors include a large commercial sex industry and low consistent condom use, which also increase the already significant prevalence of sexually transmitted diseases (STDs) among sex workers in central Bangladesh, where about 43 per cent of female sex workers and 18.2 per cent of male sex workers have syphilis. The incidence of STDs and HIV/AIDS are closely associated with the level of poverty and the overall situation of the health status shows how and why health should be addressed as a human security issue in Bangladesh.

Poverty is also often associated with a lack of education and illiteracy. This indicates that the knowledge of the risks as well as the prevention of HIV/AIDS is inaccessible for the poor people. The Bangladesh Demographic and Health Survey (2001) shows that only 31 per cent of women and half of the men heard of HIV/AIDS. Among currently married men only 23.3 per cent with an education ever heard of HIV/AIDS, whereas 85.1 per cent having secondary education heard of HIV/AIDS. 76.7 per cent of respondents without education do not know how to avoid HIV/AIDS. For those with secondary education the percentage is 14.9 per cent. Poverty related lack of education reduces health and increase human insecurity. One could say that poverty often forces people to engage in 'high risk behaviour'. Poverty driven labour migration and commercial sex work are activities that increase and spread the HIV infections (Collins/Rau 2000).

5.3.3 Lessons Learned

In recent years the governments of Vietnam and Bangladesh attained several notable achievements, including good economic performance, income growth, improved nutrition, health and education levels as well as reduction of population growth and poverty (Table 5.1). However, with about half of their population living below the national poverty line, poverty rates are remaining high and the access to basic human capital assets, e.g. education and health care facilities remains insufficient.

Table 5.1: Country Facts Vietnam, Bangladesh and Japan.

Indicators	Vietnam	Bangladesh	Japan
Total population (millions), 2005	85.0	153.3	127.9
Annual population growth rate (%) 1975-2005	1.9	2.2	0.5
Human Development Rank, 2007	105	140	8
Human Development Index (HDI) value, 2005	0.733	0.547	0.953
GDP per capita (PPP US\$) (HDI), 2005	3,071	2,053	31,267
Life expectancy at birth (years) (HDI), 2005	73.7	63.1	82.3
Population living below nat. poverty line (%), 1990-2004	28.9	49.8	..
Adult illiteracy rate (% ages 15 and above), 1995-2005	9.7	52.5	1.0
Public expenditure on health (% of GDP), 2004	1.5	0.9	6.3
Private expenditure on health (% of GDP), 2004	4.0	2.2	1.5
Health expenditure per capita (PPP US\$), 2004	184	64	2,293
Physicians (per 100,000 people), 2000-2004	53	26	198
Birth attended by skilled health personnel (%), 1995-2003	85	14	100
- bottom quintile	58*	3**	..
- top quintile	100*	40**	..
Infant mortality rate (per 1,000 live birth), (1970) 2003	(55) 19	(145) 46	(14) 3
- bottom quintile	39*	90**	..
- top quintile	14*	65**	..
Under-five mortality rate (per 1,000 live birth), (1970) 2003	(87) 23	(239) 69	(21) 4
- bottom quintile	53*	121**	..
- top quintile	16*	72**	..
Maternal mortality ratio adjusted (per 100,000 live birth),2000	150	570	6
Malaria cases (per 100,000 people), 2000	95	40	..
Tuberculosis cases (per 100,000 people), 2005	235	406	38
One-year-olds fully immunized (%)			
- bottom quintile	44*	57**	..
- top quintile	92*	87**	..
One-year-olds fully immunized against tuberculosis (%), 2005	95	99	..
- measles (%), 2005	95	81	99
Children underweight for age (% under age 5), 1996-2005	27	48	..

Note: * survey year 2002, ** survey year 2004; The figures from Japan are included to facilitate a regional comparison.

Source: UNDP's HDR 2007/2008, selected Indicators for Vietnam, Bangladesh and Japan; at: <http://hdrstats.undp.org/indicators/>.

Concerning maternal-, infant- and under-five mortality rates, the situation in Vietnam is less severe than in Bangladesh, where it is about three times as high (Table 5.1).

This confirms statements of the HDR 2004⁶⁷ that stressed Vietnam's ability to translate income growth into human development. Nevertheless, both countries still face deficiencies in the quality of social services and the case studies stressed that despite existing improvements, there are still many constraints vulnerable persons have to overcome.

People's livelihoods and hence their human security are affected by various constraints related to poverty and health, e.g. lack of nutritious food, safe water and sanitation facilities, poor or overcrowded housing, lack of accessible public health care facilities and skilled personnel. Imperfect/non-existent insurance markets, gender inequality, political will and stigma worsen the situation. The 'freedom from preventable diseases', equitable access to health care services and prevention of STDs and HIV/AIDS combined with suitable poverty reduction strategies can help to ensure the freedom to survive.

Strategies and interim success stories of achieving the MDGs still vary in developing countries, including Bangladesh and Vietnam. Specific targets were developed for each country and preliminary results are published in various reports⁶⁸. The government's efforts to reach the MDGs mainly aim at supporting the country's sustainable development⁶⁹ and thus bear the potential to improve human security. However, no literature could be found that discuss the application of a specific 'human security concept' for Vietnam or Bangladesh.

5.4 Conclusion and Recommendations

Two case studies on Vietnam and Bangladesh were selected to review the linkages of poverty, health and human security in developing countries. Based on current debates of the concept of human security, particularly in Asia, the country's achievements in terms of poverty alleviation and improvements in the health sector were analyzed.

Empirical results, especially from Vietnam, showed that government's efforts to reach the MDGs can be considered as a first step to improve the country's overall development and thus the 'human security' of its people. Nevertheless, vulnerable groups are still considerably

⁶⁷ UNDP, 2004: Human Development Report (HDR) 2004: Cultural Liberty in Today's Diverse World (New York: UNDP – Oxford University Press); at: <<http://www.undp.org.vn/undp/unews/mr/2004/eng/0726a-e.htm>>.

⁶⁸ UNDP, 2006: MDG Reports (New York: UNDP); at: <<http://www.undg.org/content.cfm?id=79>>.

⁶⁹ UNDP Vietnam, 2005: MDGs and Viet Nam's Socio-Economic Development Plan (SEDP) 2006-2010 (New York: UNDP); at: <<http://www.un.org.vn/undocs/sedp/mdgsedpe.pdf>>.

affected by poverty and health constraints. The situation in Bangladesh, one of the most hazard prone countries in the world, is even worse.

Poverty related lack of education reduces health and increase human insecurity. Spread of knowledge on basic health care and reproductive health, STD and HIV/AIDS, particularly among the vulnerable groups, is as important as the political will to change cultural bias which so-far avoids efficient prevention programmes. In general, it is crucial to ensure good governance in the whole public sector, not only in the health care sector. New projects should be developed for areas that are left behind. For example, (micro-) insurance schemes in combination with improved extension services and knowledge transfer for all people, especially women, could support a sustainable future development of poor households and therefore, in the long-run, lead to poverty alleviation.

The concept of human security is a reliable tool for facilitating academic and political discussions as well as research and development activities - particularly in combination with the MDGs. Nevertheless, a common definition is still not available for this holistic approach and governments seem not yet to integrate a specific concepts of 'human security' in their policies, as it can be found e.g. for concepts of 'sustainable development'.

6 Risk Management Networks of Ethnic Minorities in Vietnam⁷⁰

The utilization of informal social networks is a most prominent risk management strategy of vulnerable households in Southeast Asia. A Social Network Analysis (SNA) was implemented to assess risk management networks of ethnic minority farm households in the northern Uplands of Vietnam. The findings of this study are applicable to other upland areas of Southeast Asia.

6.1 Introduction

Life in the world's poorest countries is plagued by many risks that can result in consumption and income shocks. In addition, households must sometimes incur major expenditures – for instance for funeral arrangements, the timing of which is not always foreseeable. With low livelihood resilience at the best of times, unmitigated income and consumption shocks can have devastating consequences (Fafchamps and Lund, 2003). Since access to formal insurance services is hardly available in developing countries, rural farm households have developed alternative risk management strategies. While better-off households often have access to so-called (ex-ante) adaptive risk management strategies (e.g. accumulation of savings in cash or kind) that keep the level of vulnerability lower, poorer households have to rely primarily on (ex-post) coping strategies (e.g. sale of livestock), which negatively affect their long-term level of vulnerability (Carney et al., 1999).

Little is known, however, about the use of social networks as a means of risk management in the Uplands of Southeast Asia, which cover around 50 million hectares with over 100 million people directly dependent upon them (Pandey 2000). The region comprises most of the Philippines, Indonesia, Thailand, Myanmar, Cambodia, Lao People's Democratic Republic as well as Vietnam, and is inhabited by many different ethnic groups. With few exceptions, the Uplands are economically disadvantaged and are often politically and institutionally marginalized (Heidhues and Rerkasem 2006, Coxhead 2002, Zeller et al. 2010).

Over the past 20 years, the Vietnamese Government has achieved some remarkable results in poverty reduction, which were mainly accomplished by the launching of the '*doi moi*' reform process in 1986.⁷¹ Nevertheless, Vietnam is still one of the poorest countries in the world,

⁷⁰ This section is based on the following article: "Risk-management Networks of Ethnic Minorities in Viet Nam", written by Isabel Fischer, Tina Beuchelt, Thomas Dufhues and Gertrud Buchenrieder. It was submitted to the *Asia-Pacific Development Journal* in May 2010.

⁷¹ The poverty rate, measured as those below the national poverty line, was reduced from 58 per cent in 1993 to 14.7 per cent in 2007.

with 28.9 per cent of the total population (85 million in 2007) living below the national poverty line (UNDP, 2007). The rural mountainous areas of northern Vietnam, which are mainly populated by ethnic minorities, are particularly underdeveloped. According to the General Statistics Office of Vietnam, in 2006 the poverty rate in this region was still 49 per cent, by far the highest rate in Vietnam. Poverty and vulnerability are closely interlinked. While poverty is usually defined as economic deprivation (lack of income), vulnerability entails 'the relationship between poverty, risk and efforts to manage risk' (Alwang et al., 2001: 1). The vulnerability of rural households in northern Vietnam is intensified by the lack of a formal agricultural or more general rural insurance market (Vandever, 2000) and by a non-functioning social welfare system. Hence, in the event of idiosyncratic income shocks, upland households have to rely on informal mutual aid schemes within their social networks to cope with shocks and reduce their risk.

In Vietnam, literature on social networks is sparse. While Hoang et al. (2006) have researched social networks of farmers as regards their access to information, and Appold (2001) has investigated interorganizational networks in the restructuring process of Vietnam, only a few publications focus on social networks and risk management (e.g. Beuchelt, 2008; Beuchelt and Fischer, 2006; Fischer and Beuchelt, 2005).

Social networks or social relations have been recognized as an important component of social capital (Stolle and Rochon, 2006), and literature on the subject of social capital in Vietnam is less sparse (e.g. Chen, 2005; Dalton et al., 2002; Dalton and Ong, 2005; De Silva et al., 2006; Ha et al., 2004; Ha et al., 2006; Mutz and Schmidt, 2002; Van Staveren and Knorringa, 2007). As certain aspects of social capital (e.g. the fact that it gets stronger with use, it needs to be maintained, and that it does not exist as an attribute of individuals but in the relationship between individuals) are important features for the analysis of risk management networks, the concept of social capital is included in our analysis. The amount of social capital and the underlying social networks of a single person or household are seen as an important factor for poor households' resilience to income shocks.

This paper studies how social networks are utilized by poor, ethnic minority farm households in the event of a severe income shock based on an idiosyncratic risk in the Uplands of an Southeast Asian country, namely Vietnam. The traditional Vietnamese agrarian society is founded on family relations. Family ties are thus central to social networks. Recent modernization has placed more emphasis on friendship or job-based social networks (Dalton et al., 2002; Ha et al., 2004). However, as modernization has not yet reached the northern Uplands, we hypothesize that risk-sharing networks consist mainly of family members. As

most family ties are concentrated within the village, we further hypothesize that risk-sharing networks are mainly village-based. This may change in the future, with family-based social networks increasingly being supplemented by job and friendship-based networks. In addition, migration may disperse networks geographically, as can be seen in Thailand (Clausen, 2002; Korff, 2003). Total network size also affects access to help. For instance, households with more members (especially wealthier members) have a greater ability to use informal insurance (Morduch, 1999b). We therefore also hypothesize that richer households have a bigger risk-sharing network.

This paper is organized as follows: the theoretical link between social capital, social networks and risk management in northern Vietnam is summarized in the following section. Next, an overview of the data and methodology of this SNA is provided. Afterwards, the results of the case studies are presented and summarized in ‘lessons learned’. Finally, conclusions are drawn and policy recommendations are given.

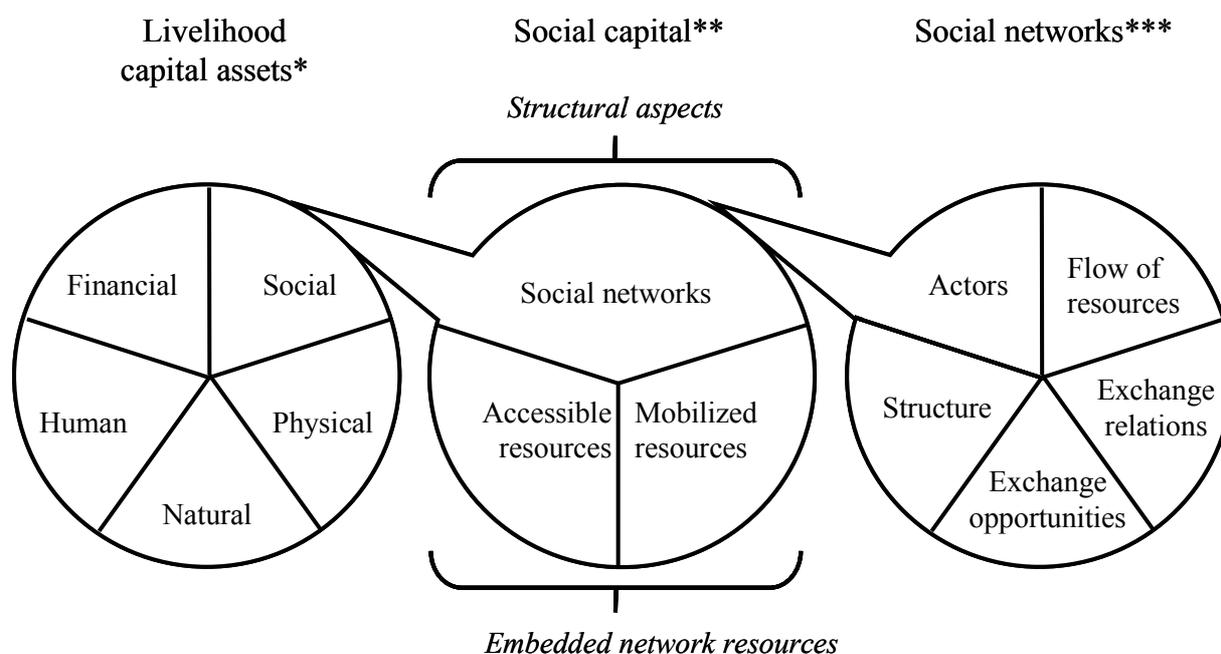
6.2 Social Capital, Social Networks and Risk Management

Definitions of social capital vary widely, depending – among other things – on the scope of observation, which ranges from the micro level (among individuals) to the meso level (among associations) and the macro level (rule of law, the court system, etc.). The micro-level definitions, which are relevant for this study, focus on the importance and the role of social networks and social ties for individuals and communities (e.g. Bourdieu, 1986; Putnam, 2000; Stone, 2001). Following Putnam (2000: 19), social capital refers to ‘connections among individuals – social networks and the norms and reciprocity and trustworthiness that arise from them’. Similarly, Stone (2001: 4) sees social capital ‘as networks of social relations, which are characterized by norms of trust and reciprocity’. According to Bourdieu (1986: 249) social capital ‘is the sum of resources, actual and potential, that accrue to an individual or a group by virtue of possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition’.

Informal safety nets are one manifestation of social capital. They involve drawing on social networks for assistance in times of need, with or without expectations of reciprocity. Hence, informal safety nets are considered an important means of risk management (DFID, 1999; Devereux, 2001; Dercon, 2002). Focusing on social networks, the most basic definition is delivered by Borgatti (1998), who says that a network is a set of dyadic ties, all of the same type, among a set of actors who may be persons or organizations for instance. Wassermann and Faust (1994: 18) indicate that the ‘defining feature of a tie is that it establishes a linkage

between a pair of actors'. According to Stahr (2001), social networks consist of individuals who exchange on a reciprocal and voluntary basis resources such as goods, services or other resources with the aim of maximizing their personal utility. Figure 6.1 illustrates how the household's capital asset portfolio, social capital and networks are interlinked.

Figure 6.1 Household's Capital Assets, Social Capital, and Social Networks



Source: Dufhues et al. (2006: 11)

Note: *based on Scoones (1998); ** based on Foley and Edwards (1999) and Lin (1999); *** based on Cook et al. (1983)

Even though social networks in developing countries are crucial for many poor and vulnerable households, a number of scholars (for instance Dercon, 2002; Fafchamps, 1998; Morduch, 1999a; Platteau, 1991; Goldstein et al., 2002) concluded that these networks are usually neither able to insure against all kinds of risks nor are the risks shared completely. Only partial risk sharing exists. The reason is that informal risk-sharing arrangements are based on voluntary participation, which limits the extent of mutual insurance. A better understanding of vulnerability, risk management and social networks is needed to design appropriate policy interventions (Dercon, 2002).

The types of risks that the poor have to deal with have not changed much over the past decades. Empirical research by Fischer and Buchenrieder (2010) revealed that death of livestock and sickness of (working and non-working) household members are the top two livelihood risks. In order to deal with livelihood emergencies, rural ethnic minority households in the Uplands of northern Vietnam mainly apply coping strategies such as sale of

assets or dis-saving. Another common coping strategy is the acquisition of informal credits, either from relatives, friends or moneylenders. The short-run effect of these strategies is to ensure minimal levels of essential consumption but their (future) livelihood status deteriorates with each event in which a coping strategy (contrary to adaptive risk management strategies) is applied. The strategies and effects are certainly similar in other Uplands of Southeast Asia.

6.3 Data and Social Network Analysis (SNA)

The research area comprised seven villages in Yen Chau district, Son La Province, and Ba Be and Pac Nam districts in Bac Kan Province. Both districts are located in the Uplands of northern Vietnam. Five different ethnic minority groups (Black Thai, Hmong, Kho-Mu, Nung and Tay) were surveyed. From an initial sample of over 200 randomly selected households, those were identified that had experienced a severe idiosyncratic income shock during the last year. Finally, seven households were chosen, based on their affiliation to certain ethnic minority groups, their wealth status, and the shock experienced. The heads of these households were interviewed, as well as persons connected to the household head.⁷² All in all, quantitative network data were obtained in 33 interviews using a semi-structured questionnaire.

The SNA was supplemented by qualitative research (with 80 female and male respondents) that relied on different participatory rural appraisal (PRA) tools. Gender-sensitive group discussions were conducted on issues of livelihood strategies, risk management and social networks, including issues of labor division, power structures, possession of assets and decision-making processes. In addition, key informant interviews with officials of so-called mass organizations (e.g. the women's union) and political cadres at the commune and district level provided general information on the research region and gave the researchers clues as to common risks that rural households face. Special emphasis was placed on difficulties concerning livestock, information on access to public services (e.g. finances, extension, education, health care etc.) and on differences concerning the wealth strata of rural households.

Social networks can be classified into various types. We use the definition of an ego-centered network, which 'consists of a focal person or respondent (ego), a set of alters who have ties to [the] ego, and measurements on the ties from ego to alters and on the ties between alters'

⁷² However, in some cases, interviewing of all social ties was not possible. Especially when the other households dwelt in a different hamlet, they could not be interviewed because research permits in Vietnam are location-specific. A complete network analysis was therefore not feasible.

(Wassermann and Faust, 1994: 53). Accordingly, the ego-centered analysis includes all persons mentioned by the interviewees (not only the ego household), even if they could not be interviewed due to logistical problems.

The network data was analyzed using the software UCINET,⁷³ which facilitates the statistical evaluation of specific structures of networks. The quantitative UCINET results served as a basis to analyze them descriptively as well as to visualize the networks as sociograms.⁷⁴

Wassermann and Faust (1994: 12) point out that visual displays including sociograms are widely used in network research. Figures 6.2 to 6.8 below represent the sociograms of all seven case households. The sociograms are based on the analysis of different network parameters, including kinship, income classification, size and density of the network, the network ties and their reciprocity, as well as the degree centrality of the different actors. These figures determine the position of network members in the sociograms and their relationships to each other.

The size of a network is determined by the number of all possible relationships between all network members. It is considered an important measurement as it ‘is critical for the structure of social relations because of the limited resources and capacities that each actor has for building and maintaining ties’ (Hannemann, 2001: 41). The degree centrality of the ego-centered network presents the out-degree and in-degree, which indicate how many people received help from and provided help to the ego household respectively. Following Scott (1991), relational data can be either undirected or directed, and either binary or valued. Undirected data indicate the mere existence of a relationship between two actors. As experienced in the interviews and discussions, support is traditionally based on reciprocity. We were interested in the question of whether this reciprocity would also be present in households, which had experienced an income shock. Directed data were therefore collected that identified whether an actor was giving or receiving help. Valued data was gathered about the actors helping most within the personal networks in order to identify the ‘backbones’ of the networks. Table 6.1 below summarizes some key data of the analyzed social networks.

According to our hypotheses, the network members display three different attributes: wealth, place of residence, and kinship. Wealth: In Vietnam, the Government classifies households

⁷³ Borgatti, S.P., Everett, M.G., and L.C. Freeman (2000): *Ucinet for Windows: Software for Social Network Analysis*. (1. Version 1999) Harvard, MA: Analytic Technologies.

⁷⁴ A sociogram is a graphic representation of social links that a person has at a specific point in time. It shows the structure and patterns of group interactions and can be drawn on the basis of many different criteria: social relations, channels of influence, lines of communication etc.

once a year according to their living standard into one of five classes: ‘hungry’, ‘poor’, ‘average’, ‘better off’, or ‘rich’. The ranking is based on the household’s monthly cash income. In the present paper, this classification is used as an indicator for the wealth of the household. Place of residence: The places of residence of the network members are classified into two groups: (1) Living in the same village as the ego household and (2) Living in another village. Kinship: A wide spectrum of kinship relations exists. As their exact representation in the sociograms would lead to an unidentifiable chaos, they were also grouped. The arrangement followed the authors’ own research findings that immediate kin are the most important network actors. The grouping follows three classes: (1) Immediate kin – comprising the siblings of the family head and his wife, their parents and the in-laws. The latter are also included as the emphasis is on the household and not on the household head or its spouse. (2) Extended kin – listing nieces and nephews, cousins, aunts and uncles. (3) Friends and neighbors – representing all non-kinship relations. Furthermore, institutions like unions, bank, moneylender, etc. are named directly.

6.4 Risk Management via Social Networks – Results of the SNA

Before turning to the detailed discussion of the case studies, a few general findings are presented that are relevant for interpreting the results of the SNA.

Empirical research revealed that a household’s level of wealth is an important and influential factor as regards the formation and size of its network. Poorer households are usually disadvantaged when it comes to utilization of social networks. They purposely refrain from asking for help from their sparse networks because they fear being unable to reciprocate later in the event of their (often well-off) alters being in a crisis.

In order to gain further insights, the PRAs addressed issues related to the households’ wealth strata, including reasons why a household might rise/fall from one stratum to another. Idiosyncratic shocks, like illness or death of a working family member, loss of livestock, or loss of the farm due to fire, are considered a major risk for all households, and one that could knock a household into a lower wealth stratum.

Reading agricultural manuals and gathering know-how (on crop production and animal husbandry) from richer farmers were mentioned as basic preconditions for improve one’s situation, alongside access to financial capital (to buy land and livestock). Everybody agreed with one participant’s statement that ‘it is very hard work to become richer, but very easy to become poor’.

Table 6.1 Key Data of Farm Households in the Social Network Analysis

Case Study	Figure No.	Ethnic Group*	Wealth Ranking*	Livelihood Crisis*	Who helped the most*?	Kind of support*	Network size	No of network members / (linked to ego household)	Degree centrality*	
									Out-degree	In-degree
A	6.2	Black Thai/ Kho-Mu	poor	- Illness/death of family member	Immediate kin Moneylender	Rice, clothing Credit	132	12 (4)	1	4
B	6.3	Tay	poor	- Illness of family member - Livestock loss	Immediate kin	Credit, accommodation of sick person	90	10 (5)	2	5
C	6.4	Black Thai	poor	- Illness/death of family member - Lack of labor - Livestock loss	Immediate kin	Credit, support on the farm (manpower + buffalo)	992	32 (6)	2	6
D	6.5	Tay	average	- Livestock loss	Wife's Immediate kin	Credit	380	20 (9)	2	8
E	6.6	Nung	average	- Illness of family member - Livestock loss	Extended kin	Farm work	272	17 (7)	7	2
F	6.7	Hmong	average	- Illness of family member	Immediate kin	Money to buy medicine	420	21 (9)	5	8
G	6.8	Black Thai	average	- Illness of family member	Immediate kin	Farm work	812	29 (9)	3	7

Source: own data

Note: * concerning ego household

When discussing financial capital, it was found that informal credit and transfers are crucial within social networks for managing shocks. There are several explanations. Barslund and Tarp (2008) state that formal loans in Vietnam are almost entirely for production and asset accumulation. A complex administrative system and language difficulties are further constraints faced particularly by members of ethnic minority groups – especially their women. Moneylenders play only a small role in the informal financial sector and most loans are given by relatives or friends and are interest-free. The main reasons why formal finance is rarely used to ease shocks, however, is that it takes time to apply for a loan and households are locally screened; any income or consumption shocks may be reported to the relevant credit officer and the credit is consequently denied.

Furthermore, it was found that transfer programs previously initiated by the Vietnamese Government,⁷⁵ e.g. health insurance,⁷⁶ are limited to a few groups (ILO, 2004). All other households have to rely on sub-optimal coping strategies in the event of a crisis, dependent on their endowment with and access to resources and capital assets (often provided by members of their social network). Usually, immediate and extended kin provide material and financial help and/or inexpensive farm labor. This is in line with the findings of Dalton et al. (2002), who show that the family plays a vital role within the social networks as well as in daily social life.

Finally, the most surprising finding is that in all five ethnic minorities women are fully integrated into the husband's network once they marry. The wife's kin are liberated from mutual family obligations. Hence, risk management strategies hardly vary between men and women. In case of a livelihood emergency, the couple refers to the husband's immediate kin. If the husband dies, neither kin feels a strong social responsibility to support the widow (see case study A). Irrespective of affiliation with a particular ethnic minority group, kinship relations are a major factor in the composition of networks.

The following case studies exemplify common livelihood shocks and coping strategies applied by different households. The network structure and flows of help are displayed in the

⁷⁵ The Government of Vietnam has a series of programs which transfer resources to specific population groups. Households can benefit under the Hunger Eradication and Poverty Reduction (HEPR) program, while commune-level investments are made under the so-called Program 135.

⁷⁶ Own research revealed that even if people possess health insurance cards, they usually face additional expenses including costs for transport, special treatment and medication. People staying in a hospital must cover the expenses for a second family member accompanying the sick to provide for the basic needs of the sick and themselves. For more detailed information concerning health and access to social security in Vietnam, please refer to Fischer and Salehin (2009) and Tran (2004).

stated that she received most help from her husband's 'rich' brother (displayed as ' † B' in Figure 6.2). She also received a little bit of help on the farm from her husband's other brother (displayed as ' † C' in Figure 6.2).

It is clearly visible that the social network of He Thi G is very thin. She is only directly linked to four other people; three of them immediate kin. Interestingly, the fourth link is to a moneylender, because her husband's family (especially the rich brother) refused to give her a loan, fearing repayment failure. This shows that the family of the husband does not assume full responsibility for taking care of the widow in the event of an emergency. Loans from moneylenders are usually much more costly than family credit. He Thi G is therefore likely to be worse off after repaying the moneylender's loan than if she had obtained credit from family members. This example pinpoints the vulnerability of poor women and highlights the limitations of informal social networks for risk management.

6.4.2 Case Study B: A poor, male-headed Tay Household

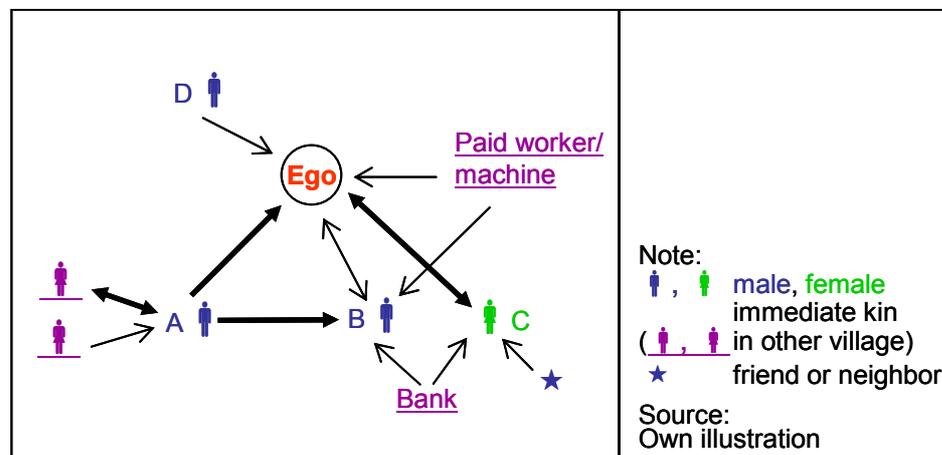
The second example of a poor household is the network of Quang Van Q, a poor Tay farmer in Bac Kan Province. Quang Van Q's livelihood has been under constant severe pressure, as his first wife suffers from mental illness. The sick woman now lives in the house next door, in the household of their married daughter, Quang Thi S (displayed as ' † C' in Figure 6.3; also classified as a poor household).

Quang Van Q's family has been short of food for many years and, additionally, three cows died in a road accident last year. The total costs of this shock (VND 5 million) were almost five times the family's annual income (VND < 1 million). Quang Van Q is directly linked to five other people (see Figure 6.3); four of them are immediate kin. The fifth link is a hired laborer with a plough, who helped with the farm work. Quang Van Q stated that he received most help from his brother (the village headman,⁷⁹ displayed as ' † A' in Figure 6.3; classified as an average household), who gave him an informal loan. The second person providing considerable support to Quang Van Q is his daughter Quang Thi S, mentioned above, who

⁷⁹ In the SNA interview, the village headmen stated that he had not had any difficulties in the past year. Hence, he did not require any help – which explains his rudimentary network. An additional expert interview with the village headmen revealed that he is in charge of compiling a list of those (vulnerable) villagers who are eligible to receive a loan from the Social Policy Bank. The village headman is also responsible for the proper repayment of the credit to the bank. Consequently, he selects villagers that are able to repay in time. However, the hungry and the poor (who are excluded from formal credit) may be able to get an informal loan from relatives who are on the list.

takes care of his sick ex-wife. In return, Quang Van Q helps her with farm work. He also worked on his other brother's farm (displayed as '♂ B' in Figure 6.3) in return for rice.

Figure 6.3 Social Network of a poor, male-headed Tay Household



This case study is a good example of the finding that only immediate kin provides assistance (besides the hired laborer, who is paid by Quang Van Q's brother). Through his family ties, and especially his well-off brother, Quang Van Q is better 'insured' via his social network than poor widow He Thi G of case study A. Nevertheless, Quang Van Q's shock could not be completely offset, which highlights once again that needy households that lack access to assets and resources will not request all the support they need in order to cope with a crisis. The fear of over-straining relationships is a common feature in social networks, so a household carefully considers whether it will be able to return the help provided when payback day comes.

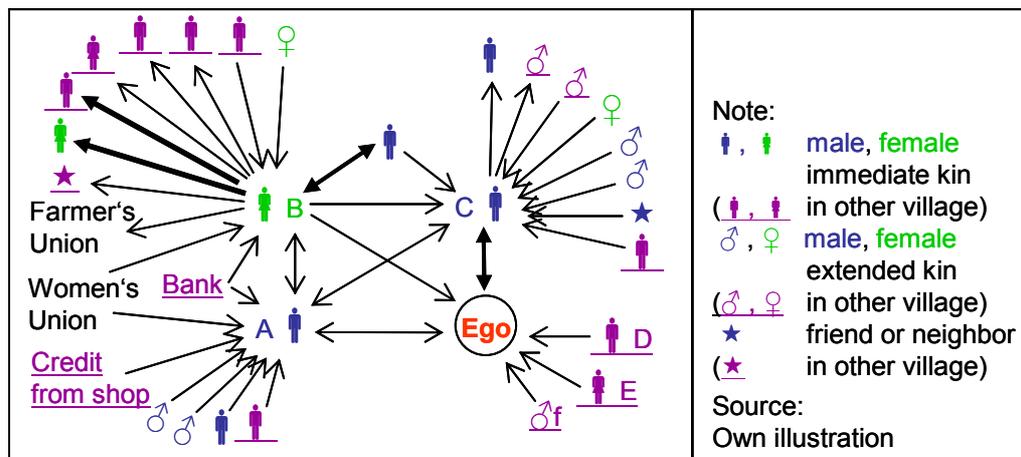
6.4.3 Case Study C: A poor, male-headed Black Thai Household

A poor Black Thai family (annual income VND < 1 million), lacking money, labor and food, was selected as the third network analysis.⁸⁰ In the twelve months prior to the interview, all of Ha Van C's animals had perished (representing a loss of VND 5 million). In addition, the father of the family head had died (cost: VND 1 million) and Ha Van C had had to stay in hospital for a while, entailing considerable expenditure. Moreover, the family had to finance the wedding (cost of VND 6 million) of one of their sons. At the time of the interview, one of

⁸⁰ The family mentioned three people from the same village and three more people from another village who provided help. Only those living in the same village were interviewed, as in Vietnam research permits are location-specific and cannot easily be extended to cover other areas.

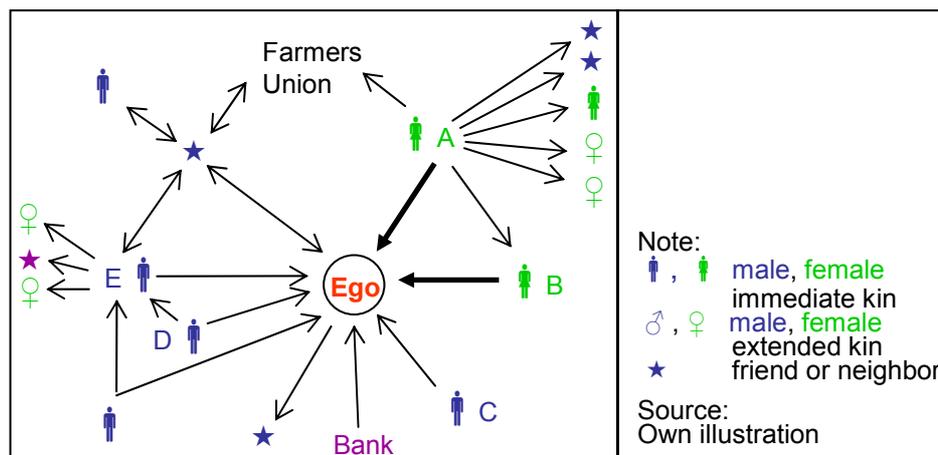
Ha Van C’s sons had been living at his wife’s place for more than one year. The other son served in the military, so no children were living at home. This created a severe lack of labor. In order to cope with the crisis, the family had previously sold livestock and received an informal loan and help with the farm and housework from their immediate kin. Additionally, the household was able to borrow a draft animal for the farm work from one of his brothers. The sociogram of Ha Van C’s household is displayed in Figure 6.4. The three other network members interviewed are ranked in different wealth strata. His brother ‘ † A’ is also poor, his sister ‘ † B’ is average, and his other brother ‘ † C’, who is also the village head, is classified as better-off. As in case study B, it is remarkable that Ha Van C’s social network consists mainly of actors with very strong family ties, his immediate kin. However, Ha Van C explained that the help received was not sufficient to cope with the situation, especially with regard to the farm work. Those people who did help were very busy with their own farm work. As the family is poor, they did not dare to ask for more help as they were afraid of being unable to return it at a later stage. This again indicates the importance of mutuality.

Figure 6.4 Social Network of a poor, male-headed Black Thai Household



6.4.4 Case Study D: An average Tay Household

The network of Ca Van C, an average farmer of the Tay ethnic minority group is displayed in Figure 6.5. Ca Van C’s family (annual income of VND 4 million) had to endure livestock loss (VND 4.7 million); one cow was stolen, and two young buffalos and one pig died recently. The household is directly linked with eight other households including six immediate kin and two neighbors, and with the bank.

Figure 6.5 Social Network of an average-income Tay Household

In contrast to all other networks presented here, the wife's immediate kin provided most of the support, including informal credit. It is noteworthy that the two households that had provided most help are both classified as 'better-off' households. As regards degree centrality, Ca Van C received help from eight alters, but only provided help to two, which is a ratio that is more common for poor households.

Although Ca Van C received substantial help and was even able to obtain a loan (VND 5 million) from the Vietnam Bank for Agricultural and Rural Development (VBARD), he stated that the help was not sufficient, as the household was not able to replace all lost livestock. When compared to the other case studies, however, this statement may also be interpreted as 'complaining from a position of relative comfort'.

6.4.5 Case Study E: An average Nung Household

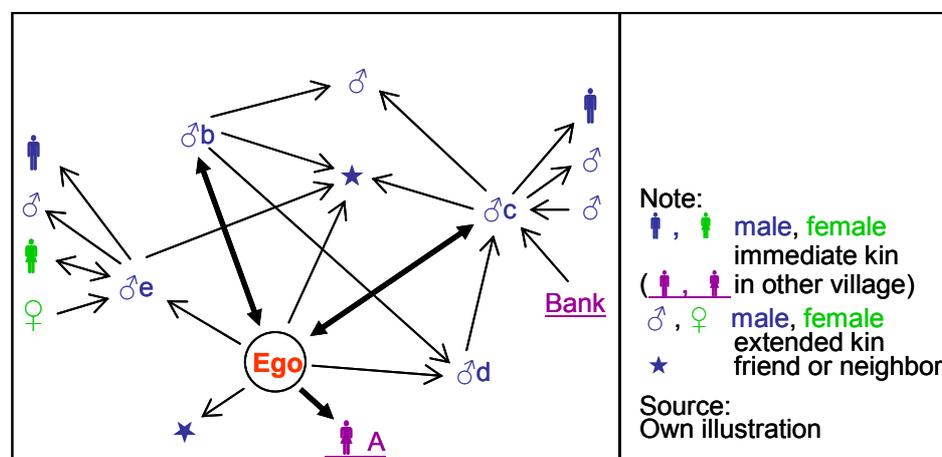
Case study E focuses on the network of an average household belonging to the Nung ethnic minority group. During the previous twelve months, Vuong Van V's household (annual income of VND 5 million) had to overcome several difficulties. First of all, the son had eye surgery (cost: VND 9 million). Second, 14 goats died (loss of VND 5.6 million) and finally, the family was short of labor and lacked money to hire labor. Besides farming, Vuong Van V used to work for a road construction company, but during that time the family was short of labor for the agricultural tasks. When the construction site moved too far away from the village, he had to quit the job (and now the family is lacking the additional income).

Vuong Van V was not able to replace the goats. In order to cover his son's medical expenses, Vuong Van V had even to sell more livestock. He still has some savings, which are mainly kept as an emergency reserve. The household has not so far taken up any formal/informal

credit, but as the household plans to invest in a brick building machine, he may borrow from his relatives in future.

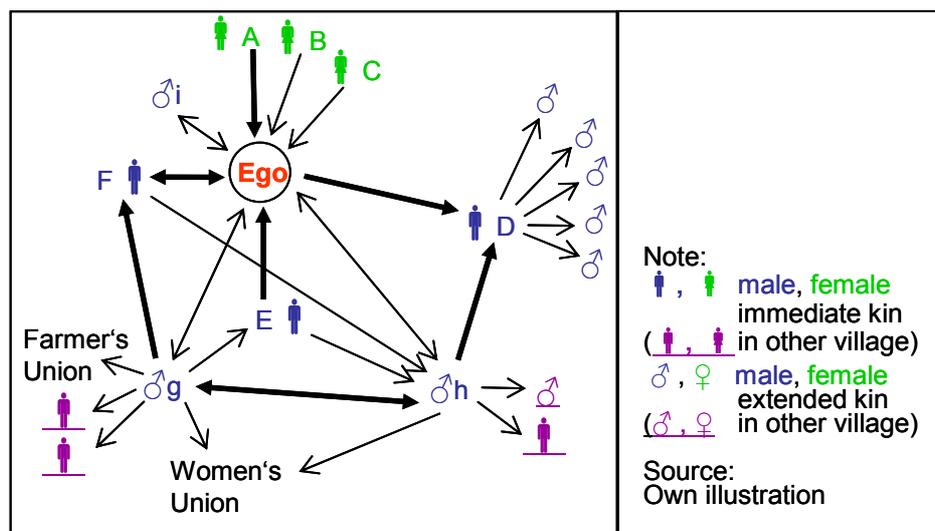
In contrast to the other case studies, Vuong Van V gave more help than he received and most of his help flows are to extended kin and neighbors. He mainly supported other people by helping with farm work, lending a draft animal or lending some rice. In addition, he gave a loan to his sister, who lives in another village. Vuong Van V's household was also mainly supported by extended kin (his nephews, his brothers' sons), who helped with the farm work. Vuong Van V (a former village headman) stated that the villagers usually provide considerable help to each other in order to improve everybody's living conditions. The risk-sharing network is displayed in Figure 6.6, and the degree centrality in Table 6.1 shows that this household is the only one that gave more help than it received. This might be due to the fact that Vuong Van V extensively used ex-ante adaptive risk management strategies such as asset accumulation, savings and dis-savings, relying much less his social network to deal with livelihood emergencies. Obviously, Vuong Van V was able to benefit from the income diversification he engaged in.

Figure 6.6 Social Network of an average-income Nung Household



6.4.6 Case Study F: An average Hmong Household

Vang Lao X, head of an average Hmong household (annual income of VND 4 million), has been sick for the past ten years. The household has therefore had to cover average annual costs for medicine of VND 2 million. During the previous year, he lost a pig (VND 600,000), experienced partial harvest failure (cost: VND 1 million) and his daughter got married (VND 2.5 million). Vang Lao X's risk-sharing network is displayed in Figure 6.7.

Figure 6.7 Social Network of an average-income Hmong Household

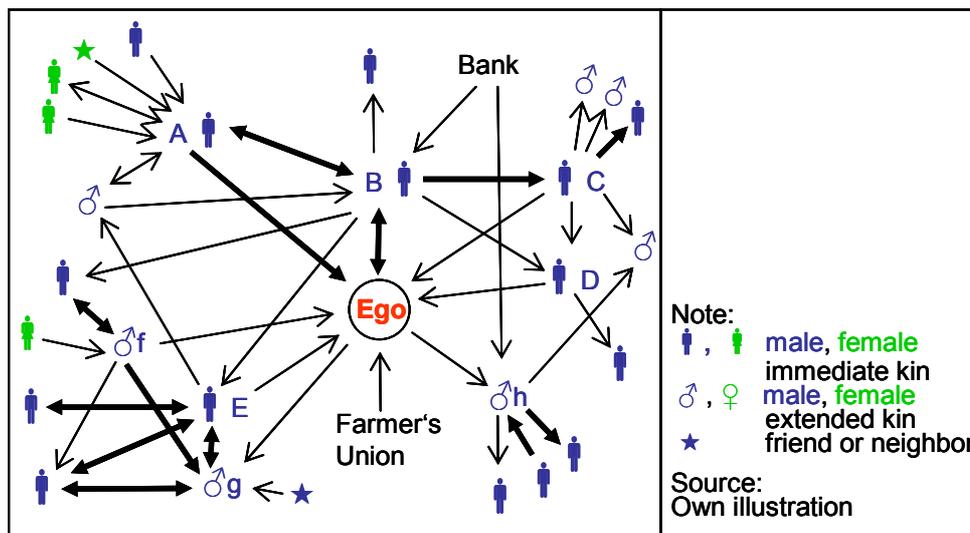
While Vang Lao X sold some livestock to pay for the wedding of his daughter, he was not able to offset the lost pig and the harvest failure. The household did not take up any formal or informal credit (like the majority of Hmong households interviewed in this village). In order to be able to buy the necessary medicine, Vang Lao X usually receives VND 60,000 per year from each of his five daughters. Like the majority of all ethnic minority households in Vietnam, the family does not have health insurance and has to pay for all medication itself.

This case study reflects the findings from the general interviews and the PRAs, namely that ‘average’ households are usually able to build up some savings for predictable ceremonies like weddings, or small emergency reserves, but are not able to cover major expenses that occur as a result of an unpredictable income shock.

6.4.7 Case Study G: A prosperous average income Black Thai Household

Hu Van H (Figure 6.8) is the male head of a Black Thai household officially ranked as ‘average’. The household earns income (VND 6 million) from farm work and a waged job, as Hu Van H is the village headman. However, taking into consideration his wife’s salary as a teacher (VND 800,000 per month), the household could also be classified as ‘better-off’. Recently, Hu Van H had to finance medical expenses (cost: VND 6 million) and a funeral (cost: VND 3 million). Hu Van H’s father had been sick for many years and had undergone surgery several times within the twelve months before he died. The mother of Hu Van H was also sick and hospitalized (cost: VND 1 million) during the past year. The family had no health insurance.

Figure 6.8 Social Network of a prosperous average-income Black Thai Household



Hu Van H received help from seven persons or households: five immediate kin and two extended kin. In addition, he received help from the Farmers' Union, a public association of farmers. It is noticeable that there are hardly any actors from other villages in this entire network. Additionally, most actors are immediate kin of each other. These two facts are quite interesting as they differ considerably from most of the other networks presented. This case study thus highlights once again the importance of kinship relations and mutuality of help.

6.4.8 Lessons Learned

It is often assumed that households who are members of a certain group such as a village or an extended family will form a single network. De Weerd (2002) considers this unlikely to be true as there are many factors influencing the formation of insurance networks, such as smooth information flows, norms, trust, the ability to punish, group size and potential gains from cooperation. Field research in northern Vietnam confirmed that informal risk-sharing networks neither include all village inhabitants, even if the villages are small, nor do they include all members of the extended family. The networks are usually comparatively small and predominately based within the village boundaries. Poor families have difficulties forming ties with other households, tend to be excluded from internally cohesive subgroups, belong to relatively more isolated subgroups and subgroups with lower wealth and thus less insurance potential. As a consequence, poor households will remain vulnerable to adverse shocks, despite the presence of the informal insurance system (Van de Gaer and De Weerd,

2003). This is not only true in Vietnam but seems also to apply to other Uplands of Southeast Asia.

The investigated case studies confirmed the hypotheses that poorer households have smaller networks than richer households, and that help is usually only exchanged between immediate kin. In contrast, richer households also extend aid to extended kin and occasionally also to neighbors. Households with more friends (especially wealthier friends) have a greater ability to use informal insurance. The limited network size of poor people in the Uplands of Southeast Asia can be explained by their possible inability to guarantee mutual help. In the case of Vietnam, mutuality is of utmost significance and when not guaranteed or anticipated, support is very limited, even within a person's own family. Nevertheless, the wealth-related limitation may be eased if the social networks include people in higher income groups or someone of high repute, e.g. the village headman (cf. case study B). This is usually beneficial for the poor, as wealthier network members are in a better position to offer support. The development of bureaucratic centralism in the 1960s and 1970s was paralleled by the growth of patron-client relationships that would help participants gain special favors (see e.g. Appold, 2001). Nevertheless, many of the risk-sharing networks of the poorer households lack these powerful allies (Cleaver, 2005; Hickson, 2001). Another striking feature was that the relatively richer households (cf. case studies D-G) had more formal actors such as banks and mass organizations in their social risk-sharing network. This again supports the hypothesis that the poorest households are often excluded from formal institutions even if these claim to exactly serve this population.

Another interesting result from the comparison of the different sociograms is that almost all households (not only the ego households but also the alter households) who experienced a shock were not only receiving help but also giving it. The need for conscious reciprocity is rather astonishing, as one would anticipate that those households would be exempted from it for the time being. However, in terms of the social capital metaphor, risk-sharing networks not only impose maintenance costs for the household, e.g. in the form of long-term reciprocity, but clearly also impose current costs in the form of reciprocity even in the event of a crisis. Social capital needs maintenance, and maintenance is costly. It requires the investment of time at least. Poorer households often simply do not have the means to invest in social capital. Hence they are often structurally excluded from social capital, as attending to social networks may also imply certain costs (Cleaver 2005). Destitution leaves little space for networking (Thorp et al. 2005). The ultra-poor face constrained access to gift exchanges,

informal credit and assets sales to mitigate risks, because they have weak social networks and lack tradable assets (including labor).

Nevertheless, in times of crisis, the networks usually grant minimum access to the resources that are lacking, be it food, labor or an informal loan. Support is usually sufficient to fulfil the most basic food requirements. As Fafchamps (1992) states, utility drops dramatically below survival income, and hence the largest welfare gains from insurance are achieved from the reduction in the risk of starvation. Additional requirements may only be partly fulfilled, especially when the households are poor. These statements are in line with Boshier et al. (2007), who state that in-built community-level survival strategies, such as neighborly assistance, can provide a level of resilience, but without support from civil society the plight of the rural poor may never improve.

Finally, concerning the place of residence, the case studies suggest that the majority of help flows remain within the village. Occasionally, help flows can also be found to the women's village of origin (e.g. '† B' in Figure 6.5; in this case, the helping household is usually better off than those who receive help).

6.5 Conclusion and Policy Recommendations

In Southeast Asia, poor and near-poor households endure considerable livelihood vulnerability due to income and consumption shocks. To buffer these shocks, households apply various risk management strategies, based on their available capital assets. As formal safety nets are non-existent, the formation, maintenance, and use of social networks is one of the most important risk management strategies of ethnic minority farm households.

6.5.1 Conclusion

As almost no analysis of risk management networks has so far been carried out in the Uplands of Southeast Asia, our Vietnam country case study provides fundamental insights. By triangulation of different qualitative and quantitative research methods, it has been possible to validate our empirical results. The sociograms depict the composition and utilization of informal risk-sharing networks of vulnerable farm households. By way of summary, our research provides evidence that risk management strategies hardly vary between men and women or between different ethnic groups. In the event of a crisis, it is the household as a whole that makes use of the available resources and the existing social network, not individual household members. Since the couple traditionally has to rely on the husband's network,

women are usually worse off than men when the spouse dies. Kinship and wealth are the major influential factors concerning the formation and size of social networks.

Social networks as one part of the household's social capital assets, are able to provide basic support, but do not suffice to buffer a major crisis completely. The networks of poor households are, on average, smaller than those of richer households, and it is considered beneficial if people in higher income groups or someone of high reputation is included in the poor's social network. Mutuality of help is crucial, and therefore needy households with a limited resource endowment reach their network threshold earlier than wealthier households. Hence, poor households will remain vulnerable to shocks despite the presence of an informal insurance system. These households are still forced to sell assets, primarily livestock, in the event of a livelihood emergency. The situation becomes even more acute where a household loses a credit-financed animal, which immediately increases the household vulnerability, substantially limits its long-term livelihood strategies and very often directly consolidates poverty or makes them slip into poverty.

6.5.2 Policy Recommendations

From the social capital point of view, the networks are small because poor farmers do not have the means to invest in social capital, as they are usually unable to cover all current and future costs of reciprocity. This point offers some leverage for policies. If one can reduce the costs of investing in social capital for poor farmers, then they will be able to extend their networks. One means of doing this, for instance, might be to reduce transport costs (e.g. issuing a transport card for poor farmers, giving them free access to public transport), or to reduce communication costs by extending mobile telephone networks into rural areas.⁸¹ The latter surely points in the direction of general infrastructure improvements, which are always a top priority in a remote area like the northern Uplands of Vietnam.

Another shortcoming, particular to poorer households, is that their networks are rather isolated. One way to improve this could be through voluntary mentoring by important and skilled members of the community. This would generate links to powerful allies. However, such schemes would have to be carefully designed to avoid inequalities at the lowest end of the wealth ladder, making those not assigned a 'godparent' through bad luck or having the 'wrong' ethnicity, etc., even more vulnerable.

⁸¹ Examples can be found in the Uplands of northern Thailand and Bangladesh (http://www.grameen-info.org/index.php?option=com_content&task=view&id=9&Itemid=199)

Furthermore, the combination of credit and insurance, especially loans that are taken up to purchase livestock, might help rural farm households to decrease their vulnerability and save them from slipping into poverty, now or in their old age. Such a policy measure would nevertheless only help those households that were able to get the credit in the first place, thus excluding the poorest of the poor. These households can only be reached by means of a general social security scheme.

To date, however, no functioning comprehensive social security system exists in the Uplands of Southeast Asia for most of the poor, ethnic minority households. According to Hu and Stewart (2009), various old-age social assistance programs have previously been initiated in developing countries, but the gained amount is often not felt sufficient to meet all basic needs. Hence, the majority of the poor are still relying on family support. Consequently, it has been considered wise introducing a so-called ‘zero pillar’ pension, which aims to guarantee an appropriate retirement income to all of the older population (i.e. over 60 years). Following Willmore (2006, cited in Hu and Stewart 2009: 4) such a scheme would not be prohibitively expensive for developing countries – with ILO estimating the cost at a few percent of GDP (e.g. 0.005% for Thailand and 0.5% for Vietnam). In addition, an efficient and accessible health care system could be an important aspect for securing livelihoods, as the majority of the interviewed households had problems with high cost of illness treatment. Sricharoen et al. (2008) illustrated, based on a study from Thailand, which traits of health insurance for the poor are particularly desirable.

7 Final Conclusion and Policy Recommendations

This final chapter provides a summary of the overall dissertation. It is based on the results and conclusions of Chapters 2-6, which are linking own empirical findings, knowledge derived from interdisciplinary research and publications on related issues as well as extensive literature review. The chapter starts by reviewing the households' access to (or lack of) specific capital assets, the risk involved as well as applied risk management strategies. Finally, policy recommendations for poverty reduction and sustainable development of vulnerable rural households in the Uplands of Southeast Asia will be given.

7.1 Summary and Conclusion

Despite the well-known achievements of the '*doi moi*' reform process and the (partially) successful implementation of the MDGs, Vietnam's Northern Uplands are still severely underdeveloped. As elsewhere in the Uplands of Southeast Asia, poor and near-poor ethnic minority farm households endure considerable livelihood vulnerability due to various idiosyncratic shocks. As formal safety nets are not accessible or simply non-existent, alternative strategies must be adopted to buffer these shocks. Based on their asset endowment, affected households apply different (ex-ante) adaptive risk management strategies and/or (ex-post) risk coping strategies.

In this study, the SLF -as an analytical tool to identify and assess the risk management strategies of vulnerable ethnic minority farm households- has demonstrated its usefulness for local situation assessment. As mentioned earlier, the central hypotheses of this research are that livelihood strategies in general and adaptive strategies (such as insurance) in particular (1) have the potential to reduce livelihood vulnerability and that (2) the differentiated knowledge of livelihood strategies is crucial for a better understanding of the reasoning behind the exploitation of livelihood assets.

Living in remote mountainous regions with scarce natural resources and limited access to other assets, the preconditions are rather difficult for ethnic minority people, even more for women. Elaborating the households' utilization of specific capital assets, this study leads to the following conclusions:

Natural resources (capital assets). Most of the Uplands of Southeast Asia are characterized by mounting environmental problems such as soil and forest degradation as well as loss of biodiversity. According to Dauvergne (1999, cited in ADB 2000: 3), it is evident that environmental degradation tends to mainly affect the poor (particularly ethnic minorities) who

live in remote areas. They suffer from polluted and unsafe water, inadequate sanitation, erosion and flooding, toxic waste and indoor air pollution. Thus, for policy prescriptions, the poor, while also potential contributors, are most appropriately seen as victims of the mounting environmental degradation.

According to Hager and Fischer (2005), population growth, intensified agricultural production, the strict implementation of forestry policies and individualized land use rights are main reasons for a dramatic reduction of grazing land in Northern Vietnam. Diminishing natural resources have a negative impact on poor rural households' risk management as it limits their livestock raising potentials. In the absence of cash savings, livestock is commonly used as in-kind savings to be divested when cash is needed (see next paragraph).

Physical capital assets. In the Uplands of Northern Vietnam, livestock is an important source of household income and has additional non-economic functions (e.g. keeping social networks alive by lending draught animals to network members). Livestock loss due to accident or disease is considered one of the major risks of ethnic minority households. The situation becomes even more acute when a household loses a credit-financed animal, which immediately increases the household vulnerability, substantially limits its long-term livelihood strategies and very often directly consolidates poverty or makes them slip into poverty. The conducted ACA revealed that respondents of all wealth strata emphasized their demand for products, e.g. livestock insurance, which helps them to reduce their vulnerability and enables them to cope more easily with livelihood emergencies.

In addition to the above mentioned problems, the lack of skilled veterinary staff (at the village and commune level), combined with high expenses for (often unsuitable) medical treatment increases the expenses of affected households, leads to higher losses and thus also harms insurance companies. Furthermore, the lack of skilled extension workers in the research area is currently only partly covered through mass-organizations like 'Women Union' or 'Farmers Union', which are quite successful in some villages, but are not yet able to reach all households. Finally, it has to be mentioned once again that poor farmers often do not possess large ruminants. In addition, they are usually not able to pay insurance premiums that would cover the costs of private insurance providers. Besides, the moral hazard issue remains.

Financial capital assets. Own research revealed that formal loans from banks and informal credits from relatives and friends are common coping strategies. The latter are crucial for poor households that have no/sufficient access to formal loans. Own research confirms findings from Barslund and Tarp (2008) that formal loans in Vietnam are almost entirely for production and asset accumulation. Although the issue of the fungibility of money might be

raised, and the validity of some of the data might be questioned (farmers are usually requested to sign a statement to the effect that the loan will be used for productive purposes only), a good share of formally borrowed money is used for productive purposes compared to other countries.

Up to date, there are no formal loans available for healthcare or hospital visits. A complex administrative system and language difficulties are further constraints faced particularly by members of ethnic minority groups – especially women. In addition, savings and insurance services, when available are not adapted to the needs. Furthermore, emerging expenditures for livelihood risks usually go beyond the scope of the dis-saving (in cash and in kind) ability of rural households. Mneylenders play only a small role in the informal financial sector of rural Vietnam as most loans are given by relatives or friends and are interest-free. The main reasons why formal finance is rarely used to ease shocks, however, is that it takes time to apply for a loan and households are locally screened; any income or consumption shocks may be reported to the relevant credit officer and the credit is consequently denied.

Social capital assets. As formal safety nets are not accessible or simply non-existent, alternative strategies must be adopted. In general, risk management strategies hardly vary between men and women or between different ethnic groups. However, since the couple traditionally has to rely on the husband's network, women are usually worse off than men when the spouse dies. Besides 'dissaving', the formation and maintenance of social networks is currently one of the most important adaptive risk management strategies. Social networks as one part of the household's social capital assets, are able to provide basic support, but do not suffice to buffer a major crisis completely.

Empirical research (SNA) revealed that networks of poor households are, on average, smaller than those of richer households, and it is considered beneficial if people in higher income groups or someone of high reputation is included in the poor's social network. Mutuality of help is crucial, and therefore needy households with a limited resource endowment reach their network threshold earlier than wealthier households. Hence, poor households will remain vulnerable to shocks despite the presence of an informal insurance system.

Human capital assets. Empirical research revealed that decision-making is linked to the ownership of capital assets, which is mostly in the hands of men. They possess all livestock as well as the land right certificates. The latter is especially important as formal credit is given to those who possess land, thus it is difficult for a woman to obtain a credit from a bank. The above addressed consequences of diminishing or disappearing natural resources directly affect poor rural household's health management. Furthermore, research showed that credit and

financial transfers from informal sources are crucial, as no credit lines are available for health care so far. Even if people possess health insurance cards, they usually face additional expenses including costs for transport, special treatment and medication. People staying in hospital must further cover the expenses for food or a second family member has to provide food for the hospitalized person. A complex administration system and language difficulties are further constraints that are particularly faced by members of ethnic minority groups – especially women.

Risk management strategies. Research results suggest that limited endowment with and access to capital assets and service institutions, as well as human and economic risks are the main components affecting rural livelihoods. In the research area, the most common coping strategy is the sale of livestock. While wealthier households are usually capable of covering high expenditures by selling big ruminants, poor households only possess some pigs or chicken, which can be sold in the case of a livelihood emergency. Empirical research revealed that revenues from selling cash crops, which are also mentioned as one of the main coping strategies, are often significantly reduced by debt-service payments (e.g. for inputs, rice for consumption) to traders and shops. The remaining money is mainly spent on school fees or on consumer goods. Once again, poor households are worse off, as they normally have less cropping area and higher debts (especially from buying rice to compensate the household's lack of food).

In summary, results derived from the application of the SLF, the ACA and the SNA suggest that the central hypotheses of this research were appropriate. The differentiated knowledge of livelihood strategies is crucial for a better understanding of the reasoning behind the exploitation of livelihood assets. Vulnerable ethnic minority farmers in the Uplands of Northern Vietnam possess only a few assets. Concerning the access to financial services, people still face several constraints, as credits are often not available for certain activities or at a certain point in time. In addition, savings and insurance services, when available are not adapted to the needs. Furthermore, emerging expenditures for livelihood risks usually go beyond the scope of the dis-saving (in cash and in kind) ability of rural households. Taking into consideration the above stated situation of changing agricultural activities, including higher input use, and the resulting decline in the number of large ruminants, one should be very careful not to destroy the so far still functioning traditional social networks. Even though these networks are not able to fully buffer all shocks and crises, they are at least one asset (social capital asset) that is initially accessible by everybody and quite often a means to compensate to some degree the lack of other capital assets as depicted in the SLF.

7.2 Policy Recommendations

Based on the extremely diverse cultural, socio-economic and agro-ecological conditions in the Uplands of Southeast Asia, there will not be a blue-print recipe for successful rural development policy that adequately takes into account the relationships between social justice, economic growth and environmental sustainability. In general, it is crucial to ensure good governance in the whole public sector. Weak governance affects all areas, ranging from the health care sector to providing possibilities for illegal logging and land acquisition at the expense of the environment, poor smallholders and ethnic minorities.

In order to stop the gradual downward spiral trend of many smallholders in Northern Vietnam and to guarantee sustainable development for vulnerable households, a bundle of strategies have to be initiated, based on the respective access to different capital assets.

First of all, poverty reduction strategies and programs need to consider a broader target group, not only the currently poor but also the vulnerable (those at risk of being poor in the future) households. Research suggests that there is scope for assisting the poor in protecting themselves, either by promoting more self-insurance via savings, by supporting micro-credit as well as by offering innovative financial products, such as a combination of credit and insurance, especially for loans that are taken up to purchase livestock. Such a scheme would nevertheless only help those households that were able to get the credit in the first place, thus excluding the poorest of the poor. These households can only be reached by means of a general social welfare scheme.

To date, however, no functioning rural social security schemes exist in Northern Vietnam. As poverty related lack of education reduces health and increase human insecurity, it is assumed that an efficient and accessible health care system would be an important alternative for securing livelihoods. In addition, improved extension services and knowledge transfer for all people (especially women) as well as the implementation of a ‘farm hand’⁸² system as a formalized version of currently existing informal help flows, could support a sustainable future development of ethnic minority households and therefore, in the long-run, lead to poverty alleviation.

⁸² ‘Farm hand’ systems are common in Germany and Austria. Agricultural social welfare schemes organize and pay for skilled manpower on farms, whenever working family members are temporary not available due to accident or severe illness.

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Executive Summary

Despite the achievements of the ‘*doi moi*’ reform process, which was launched in 1986, Vietnam is still one of the poorest countries in the world, with 28.9 per cent of the total population (85 million in 2007) living below the national poverty line (UNDP 2007). Especially the mountainous, rural areas of Northern Vietnam are underdeveloped. Poor and near-poor farm households endure manifold risks and income shocks, which threaten their existence.

Normally, insurance systems would step in to assist. In developing countries however, where access to formal insurance services is hardly available, rural farm households have developed alternative risk management strategies. Better-off households might have access to so-called (ex-ante) adaptive risk management strategies. The accumulation of savings in cash or kind counts as such an adaptive risk management strategy. Poorer households have to rely primarily on (ex-post) risk coping strategies (e.g. the sale of livestock), which enhance their long-term level of vulnerability.

The *Sustainable Livelihood Framework* (SLF) of the Department for International Development (DFID 1999), was applied as an analytical tool to identify and assess risks and risk management strategies (cf. Chapter 3) of vulnerable rural livelihoods in the Uplands of Northern Vietnam. The role of informal social networks was analyzed with the help of *Social Network Analysis* (SNA) (cf. Chapter 6). An *Adaptative Conjoint Analysis* (ACA) (cf. Chapter 4) was implemented to examine the potential demand for a formal or semi-formal microinsurance scheme in the area of livestock insurance. Furthermore, additional insights were gained from interdisciplinary research on issues of human, health and livelihood security (cf. Chapter 5), as well as from case studies on natural resource use in Southeast Asia (cf. Chapter 2).

The central hypotheses of this research on livelihood strategies in general and adaptive strategies such as insurance in particular are that they (1) have the potential to reduce livelihood vulnerability and that (2) the differentiated knowledge of livelihood strategies is crucial for a better understanding of the reasoning behind the exploitation of livelihood assets, such as natural resources or physical assets in the form of livestock, despite the negative medium and long-term effects.

This study was carried out within the framework of Subproject F2.2 of the German-Thai-Vietnamese Collaborative Research Program ‘Sustainable Land Use and Rural Development in Mountainous Regions of Southeast Asia’ (SFB 564), also known as *The Uplands Program*. Research results lead to the following conclusions:

- (1) First of all, only a very elaborate use of existing capital assets can improve the livelihood situation of vulnerable households in Northern Vietnam. Living in remote mountainous regions with scarce natural resources and limited access to other assets, the preconditions are rather difficult for ethnic minority people, even more for women.
- (2) Secondly, in order to improve the situation, all stakeholders have to be aware of the existing risk management strategies (e.g. raising livestock and selling it in case of a livelihood emergency is one of the most popular risk coping strategies in the mountainous regions of Northern Vietnam) and learn from both, advantages and disadvantages of currently applied strategies to translate them into effective policies.
- (3) Concerning the access to financial services, people still face several constraints, as credits are often not available for certain activities or at a certain point in time. In addition, savings and insurance services, when available are not adapted to the needs. Furthermore, emerging expenditures for livelihood risks usually go beyond the scope of the dis-saving (in cash and in kind) ability of rural households.
- (4) Taking into consideration the above stated situation of changing agricultural activities, including higher input use, and the resulting decline in the number of large ruminants, one should be very careful not to destroy the so far still functioning traditional social networks. Even though these networks are not able to fully buffer all shocks and crises, they are at least one asset (social capital asset) that is initially accessible by everybody and quite often a means to compensate to some degree the lack of other capital assets as depicted in the SLF.

Research results point to a number of policy issues that need to be addressed if household's vulnerability to poverty is to be significantly reduced among ethnic minority households in Northern Vietnam. First of all, poverty reduction strategies and programs need to consider a broader target group, not only the currently poor but also the vulnerable households. The promotion of innovative financial products, such as a combination of credit and insurance, especially for loans that are taken up to purchase livestock, is considered a successful approach to support vulnerable households. Finally, it is assumed that an efficient and accessible health care system would be an important alternative for securing livelihoods. In addition, improved extension services and knowledge transfer for all people, especially women, could support a sustainable future development of ethnic minority households and therefore, in the long-run, lead to poverty alleviation.

Zusammenfassung

Trotz bereits erzielter Fortschritte aufgrund des ‚*doi moi*‘ Erneuerungsprozesses, der 1986 begonnen wurde, ist Vietnam immer noch eines der ärmsten Länder der Erde. 28,9 Prozent der Gesamtbevölkerung (85 Millionen Menschen im Jahr 2007) leben unter der nationalen Armutsgrenze. Vor allem die ländlichen Bergregionen im Norden Vietnams sind unterentwickelt. Arme und bedürftige landwirtschaftliche Haushalte sind einer Vielzahl von Existenzbedrohenden Risiken und Einkommensschocks ausgesetzt.

Üblicherweise würden hier Versicherungen unterstützend eingreifen. Nachdem der Zugang zu formalen Versicherungen in Entwicklungsländern meist nicht vorhanden ist, haben die landwirtschaftlichen Haushalte alternative Risikostrategien entwickelt. Wohlhabende Haushalte haben größtenteils Zugang zu so genannten Anpassungsstrategien (*Adaptive Strategies*), beispielsweise durch sparen (in bar oder in Sachwerten). Ärmere Haushalte sind dagegen auf Strategien zur Bewältigung (*Coping Strategies*) von Konsumeinbrüchen (z.B. den Verkauf von Tieren) angewiesen, dabei leidet häufig die spätere Lebensgrundlage.

Mit Hilfe von DFID’s *Sustainable Livelihood Framework* (SLF; siehe Kapitel 1) (DFID 1999), wurden die Risiken und das Risikomanagement (siehe Kapitel 3) von verletzlichen (*vulnerable*) Haushalten in den Bergregionen Nordvietnams untersucht. Die Bedeutung von informellen Sozialen Netzwerken wurde mit Hilfe einer *Social Network Analysis* (SNA) analysiert (siehe Kapitel 6). Eine so genannte *Adaptive Conjoint Analysis* (ACA) wurde eingesetzt, um die Nachfrage nach semi-formellen Mikroversicherungen für die Tierhaltung zu ermitteln (siehe Kapitel 4). Durch interdisziplinäre Forschung im Bereich der Sicherung der Menschenrechte, der Gesundheit und der Lebensgrundlagen (siehe Kapitel 5), sowie durch die Untersuchung von Fallstudien zur Ressourcennutzung in Südostasien (siehe Kapitel 2) konnten zusätzliche Einblicke gewonnen werden.

Die zentralen Hypothesen dieses Teilprojekts, das sich mit der Erforschung von Strategien zur Sicherung der nachhaltigen Lebensgrundlage beschäftigt sind, dass (1) so genannte Anpassungsstrategien (etwa die Inanspruchnahme von Mikroversicherungen) das Potential bergen, die Gefährdung der Lebensgrundlage zu reduzieren und dass (2) das differenzierte Wissen über die verfügbaren Risikomanagementstrategien von hervorragender Bedeutung für ein besseres Verständnis der Entscheidungsprozesse ist, die hinter der Ausbeutung von Ressourcen wie z.B. den natürlichen Ressourcen, Humankapital oder der Zurückhaltung bei der Adaption von Innovationen stehen, trotz der daraus resultierenden negativen mittel- und langfristigen Effekte.

Die vorliegende Arbeit wurde im Rahmen des Teilprojektes F2.2 des interdisziplinären Sonderforschungsbereichs (SFB 564) ‚Nachhaltige Landnutzung und ländliche Entwicklung in Bergregionen Südostasiens‘ durchgeführt. Die Forschungsergebnisse führen zu den folgenden Schlussfolgerungen:

- (1) Nur eine sehr ausgeklügelte Nutzung der vorhandenen Ressourcen kann die Lebensbedingungen von verletzlichen Haushalten in Nordvietnam verbessern. Die

Voraussetzungen der Bewohner (Mitglieder verschiedener ethnischer Gruppen) der abgelegenen Bergregionen sind durch die begrenzten natürlichen Ressourcen, sowie den eingeschränkten Zugang zu anderen Gütern sehr schwierig. Besonders schwierig ist es für Frauen.

- (2) Um die gegenwärtige Situation zu verbessern, müssen alle Beteiligten die bestehenden Risikostrategien kennen (z.B. die Aufzucht und der Verkauf von Tieren ist eine der häufigsten Risikobewältigungsstrategien der ländlichen ethnischen Haushalte in Nordvietnam). Aus den erforschten Vor- und Nachteilen der durchgeführten Strategien können wirksame Politikempfehlungen entwickelt werden.
- (3) Bezüglich des Zugangs zu Finanzdienstleistungen gibt es für die Menschen in den Bergregionen auch weiterhin viele Einschränkungen. Nach wie vor sind Kredite für bestimmte Ausgaben (z.B. Krankenhauskosten) oder zu bestimmten Zeitpunkten nicht verfügbar. Oft sind Spar- und Versicherungsangebote, falls überhaupt verfügbar, nicht den Bedürfnissen angepasst. Des Weiteren überschreiten die anfallenden Ausgaben zur Risikobewältigung oft die vorhandenen Ersparnisse der ländlichen Haushalte.
- (4) Ausgehend von der in dieser Arbeit beschriebenen veränderten Situation in der Landwirtschaft, einschließlich dem höherem Einsatz von Inputs, und dem Rückgang der Nutzviehbestände, sollte darauf geachtet werden, die noch funktionierenden traditionellen sozialen Netzwerken nicht zu zerstören. Obwohl diese Netzwerke nicht in der Lage sind alle Schocks vollständig abzupuffern, zählen sie (in Form von Sozialkapital) dennoch zu den wenigen Gütern welche grundsätzlich jedem zugänglich sind. Somit besteht bis zu einem gewissen Grade die Möglichkeit einen Mangel an anderen Gütern (wie sie im SLF dargestellt wurden) zu kompensieren.

Die vorliegenden Forschungsergebnisse machen auf eine Reihe von Sachverhalten aufmerksam, die beachtet werden sollten, wenn man die Armut der Haushalte der ethnischen Minderheiten in Nordvietnam signifikant reduzieren möchte. Erstens müssen Strategien und Programme zur Armutsbekämpfung eine größere Zielgruppe erreichen und somit nicht nur die bereits Armen, sondern auch die in ihrer Lebensgrundlage gefährdeten Haushalte ansprechen. Die Förderung innovativer Finanzdienstleistungen, beispielsweise eine Kombination von Kredit und Versicherung, vor allem für Tierkredite, wird als ein erfolgreicher Ansatz gesehen um gefährdete Haushalte zu unterstützen. Letztendlich wird davon ausgegangen, dass ein effizientes und allen zugängliches Gesundheitssystem eine wichtige Voraussetzung darstellt um die Lebensgrundlage zu sichern. Zusätzlich könnte ein verbesserter Beratungsservice und Wissenstransfer für alle, insbesondere die Frauen, zu einer nachhaltigen zukünftigen Entwicklung der Haushalte der ethnischen Minderheiten beitragen und somit im Laufe der Zeit die Armut verringern.

Curriculum Vitae

PERSONAL DATA

Name Isabel Maria Fischer (née Schädle)
 Date of birth December 12th 1974
 Place of birth Kempten (Allgäu), Germany
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EDUCATION

Since 07/2003 PhD-candidate at the Institute of Agricultural Economics and Social Sciences in the Tropics and Subtropics (Dept. of Agricultural Development Policy and Theory with Prof. Dr. Dr.h.c. F. Heidhues), University of Hohenheim, Germany
 Topic: *“Vulnerability and Risk Management of Rural Farm Households in Northern Vietnam”*

10/2002-06/2003 Doctorial studies at the Institute of Social Sciences and Agricultural Economics in the Tropics and Subtropics (Joseph G. Knoll Visiting Professorship for Development Research with Prof. Dr. H.-R. Korff Special Field: Development Sociology), University of Hohenheim, Germany
 Preparation of Research Project on *“Gender Relations and Knowledge Transfer within Urban-Rural Relations among Ethnic Groups in Northern Thailand”*
 Research focus: Ethnic Minorities, Gender Relations, Social Networks as well as Knowledge Transfer and Information Flow

1995 – 2002 Study of Agricultural Science at the University of Hohenheim, Germany. Specialization in Agricultural Economics and Social Sciences in the Tropics and Subtropics
 Diplomarbeit (equivalent to Master Thesis) on *“Media Supported Communication in Agricultural Extension and Participatory Rural Development in Northern Thailand”*;

- Degree: Dipl.-Ing. sc. agr. (equivalent to M. Sc.)
- 1985 – 1995 Gymnasium Hohenschwangau (secondary school), degree: A-levels
- 1981 – 1985 Volksschule Pfronten (primary school)

PROFESSIONAL EXPERIENCE

- 10/2009-01/2010 Research associate of the Collaborative Research Program (SFB 564) “Sustainable Land Use and Rural Development in Mountainous Regions of Southeast Asia“, the so-called *The Uplands Program*, of the University of Hohenheim, Germany
- 02/2007-12/2007 Work as research associate at the Leibniz Institute of Agricultural Development in Central and Eastern Europe (IAMO)
- 07/2003-12/2006 Research associate in Subproject F2.2 of the Collaborative Research Program (SFB 564) “Sustainable Land Use and Rural Development in Mountainous Regions of Southeast Asia“, the so-called *The Uplands Program*, of the University of Hohenheim, Germany
- 04/2003-06/2003 Work as research associate at the Dept. of Development Sociology (Inst. 490e) at the University of Hohenheim
- 01/2003-03/2003 Work as research associate in the Collaborative Research Program (SFB 564) “Sustainable Land Use and Rural Development in Mountainous Regions of Southeast Asia“ *The Uplands Program* of the University of Hohenheim
- 06/2002-08/2002 Internship at *Bread for the World*, Dept. Asia I; Stuttgart, Germany
Management and evaluation (including budgeting) of new project proposals, current and terminating projects in Hong Kong and the South-pacific Islands
- 11/2001-02/2002 Work as teaching and research assistant at the Dept. of Agricultural Development Policy and Theory at the University of Hohenheim
- 06/2001-10/2001 Work as research assistant in the Collaborative Research Program (SFB 564) “Sustainable Land Use and Rural Development in Mountainous Regions of Southeast Asia“ *The Uplands Program* of the University of Hohenheim
- 10/1999-03/2000 Work as teaching and research assistant at the Dept. of Agricultural Development Policy and Theory at the University of Hohenheim
- 11/1997-10/1998 Several practical trainings on different farms

STUDY ACCOMPANYING ACTIVITIES & FURTHER TRAINING

- 05/2006 Participation in the *5th EUDN Workshop* “Development Research for Doctorial Students” at the Center for Development Research (ZEF) in Bonn, Germany
- 11/2003 Participation in the interdisciplinary workshop “Social Network Analysis” of Subproject F3 of *The Uplands Program* (SFB 564/ University of Hohenheim, Germany) in Chiang Mai, Thailand
- 10/2003 Participation in a seminar on “Regional studies und intercultural communication in Vietnam” and a Vietnamese Language Course. Organized by *The Uplands Program* (SFB 564/ University of Hohenheim, Germany) in Hanoi, Vietnam
- 09/2003 Participation in the interdisciplinary workshop “Participation, Methodology and Fieldwork in *The Uplands Program*” of Subproject A1 of *The Uplands Program* (SFB 564/ University of Hohenheim, Germany) with participants from Vietnam, Thailand and Germany in Chiang Mai, Thailand
- 02/2003 Participation in the interdisciplinary workshop “Current Development Theories: Social Networks and Social Change” of Subproject F3 of *The Uplands Program* (SFB 564/ University of Hohenheim, Germany) in Chiang Mai, Thailand
- 06/2002 Participation in the workshop “Impact Assessment and Indicator Development“ at *Bread for the World* with Asian extension specialists
- 06/2002 Participation in the training course “Gender and Planning, Monitoring and Evaluation“ of *Bread for the World*
- 03/2000 Participation in the training courses: “Group Moderation“ and “Communication in Extension“ at the University of Hohenheim
- 01/1997 Participation in a seminar on rhetoric skills organized by VDL
- 05/1996-08/1997 Coordinator of the VDL-student group at the University of Hohenheim and member of the federal student association of the VDL (VDL: Professional Association for Agriculture, Nutrition and Environment)

EXPERIENCE IN FOREIGN COUNTRIES

- 01/2004-12/2004 Vietnam; Research and data collection for Subproject F2.2 of the
03/2005-05/2005 Collaborative Research Program (SFB 564) of the University of Hohenheim, the so-called *The Uplands Program*, Germany. (Topic: *Risk Management of Farm Households in Northern Vietnam*)

- 11/2000-04/2001 Thailand; Research and data collection for the Master-Thesis
(Topic: *Media Supported Communication in Agricultural Extension and Participatory Rural Development in Northern Thailand*)
- 08/1999-09/1999 Philippines; International seminar and workshop
(Topic: *Tropical Ecology*)
- 12/1997-03/1998 South Africa; Practical training in farming

ADDITIONAL QUALIFICATIONS

- 06/1998 Pedagogical skills in professional context
- Computer skills Microsoft Office
- Languages German: mother tongue
English: very good
French: well
Spanish, Vietnamese, Mandarin : basic skills

PUBLICATIONS

Please refer to publication list (Annex 2)

Pfronten, 1st August 2010

Erklärung

Hiermit erkläre ich, dass ich die vorliegende Dissertation selbständig angefertigt habe in Übereinstimmung mit den Vorgaben der Promotionsordnung. Alle verwendeten Quellen und Hilfsmittel sowie wörtlich oder inhaltlich übernommene Stellen sind als solche gekennzeichnet.

Die Dissertation ist im Rahmen des SFB (564) entstanden. Die Darlegung des Betreuers zum Anteil der eigenen wissenschaftlichen Leistung (siehe Annex 3) wurde beigefügt.

Stuttgart, den

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Isabel Fischer

Annex 1: Theoretical Approaches to Vulnerability

Table A1 Theoretical Approaches to Vulnerability

Vulnerability Perspective:	Examples of Authors/ Studies	Epistemological Position	Main Areas of Application
<i>Entitlement Perspective (1980s)</i>	SEN 1981	Predominantly structuralist	Analysis of poverty and famines
<i>Assets Perspective (1980s/1990s)</i>	SWIFT 1989 DE WAAL 1989 MOSER 1998 BEBBINGTON 1999	Predominantly actor-oriented (but acknowledging production/exchange conditions as structural frame)	Analysis of poverty and famines
<i>Livelihoods Perspective (1990s-present)</i>	CHAMBERS/ CONWAY 1991 SCOONES 1998 DFID 1999	Predominantly actor-oriented	Poverty and situation assessments
<i>Hazard Perspective (1990s-present)</i>	BLAIKIE ET AL. 1994 HEWITT 1997 WISNER ET AL. 2004	Structuralist, realist to “weak constructionist”	Disaster risk assessments
<i>Risk Perspective (since 2000)</i>	BECK 1986, 2007 HEIJMANS 2001 KRÜGER/MACAMO 2003	Actor-oriented, realist to constructionist	Poverty and disaster risk assessments
<i>Resilience Perspective (since 2000)</i>	ADGER 2000 BERKES ET AL. 2003 TURNER ET AL. 2003 HOLLING 2004	Structuralist, systemic	Natural resource management, disaster risk assessments
<i>Security Perspective (since 2000)</i>	CHS 2003 BRAUCH 2005 BOHLE/O’BRIEN 2006	Aims at integrating the dichotomy between structure and agency	Disaster risk assessments, social protection, social risk management

Table A1 Theoretical Approaches to Vulnerability (continued from previous page)

Definition of Vulnerability	Reference to Risk Exposure	Reference to Sensitivity/ Capacity	Postulated Outcomes of Vulnerability
Risk of entitlement decline/failure	Deteriorating conditions of production and exchange, combined with trigger events (e.g. drought)	Utilization of endowments	Poverty, food insecurity
Risk of entitlement failure and exhaustion of assets	Exhaustion of assets, combined with trigger events (e.g. drought)	Utilization, preservation and investment in assets	Poverty, food insecurity
A context that frames people's external environment, and that is outside their control	Critical trends, shocks and seasonality	Combination of assets to livelihood strategies, coping strategies	Livelihood stress, poverty
The degree to which someone's life, livelihood, property and other assets are put at risk by a discrete and identifiable event in nature and in society	Hazards	Combination of assets, prevention, mitigation and coping strategies	Disasters, poverty
Possibility/probability of harmful events; insufficient capacity to assess risk; risk of undesirable outcomes	Hazards	Risk perception and risk assessment, leading to risk management and coping strategies	Disasters, poverty
Exposure of individuals or groups to stress as a result of environmental change.	Environmental change, hazards	Capacity to adapt to and cope with stress and external shocks	Loss of systemic integrity, destruction of natural resources, institutions, etc.
(Draws on vulnerability definitions from various perspectives/discourses; defining it in close connection with insecurity)	Global change, climate change, hazards, conflict	Capacity to end, mitigate or adapt to threats	Insecurity, poverty

Source: cited from Shakya (2009: 40-41)

Annex 2: List of Publications

2010

- Fischer, I., Beuchelt, T., Dufhues, T. and G. Buchenrieder. 2010 (submitted). Risk management Networks of Ethnic Minorities in Vietnam. Submitted to *Asia-Pacific Development Journal*.
- Fischer, I. and G. Buchenrieder. 2010. 'Risk Management of Vulnerable Rural Households in Southeast Asia'. Proceedings of the 9th European IFSA Symposium, 4-7 July 2010, Vienna (Austria), pp 1279-1288.
- Zeller, M., T. Beuchelt, I. Fischer and F. Heidhues. 2010. Linkages between poverty and sustainable agricultural and rural development in the uplands of Southeast Asia, in T. Tscharnatke et al. (Eds.): *Tropical Rainforests and Agroforests under Global Change*, Environmental Science and Engineering, pp 511-527, Springer Verlag, Berlin, Heidelberg 2010.

2009

- Fischer, I. and G. Buchenrieder. 2009. Laptop, livestock drawings and rice wine: A demand analysis for livestock insurance in Northern Vietnam. *Savings and Development* 33 (1): 41-60.
- Fischer, I. and M.M. Salehin. 2009. Health and Poverty as Challenges for Human, Health and Livelihood Security: Two Case Studies on Northern Vietnam and Bangladesh, in H.G. Brauch et al. (Eds.) *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts*, pp. 563-572. Hexagon Series on Human and Environmental Security and Peace, vol. 4 (Berlin – Heidelberg – New York: Springer-Verlag, 2009).

2008

- Fischer, I. and G. Buchenrieder. 2008. Insurance preferences of smallholders: Results from an Adaptive Conjoint Analysis in Northern Vietnam. Research in Development Economics and – Policy Discussion Paper Series No 5/2008. Department of Agricultural Economics and Social Sciences in the Tropics and Subtropics (490a), Universität Hohenheim, Germany (submitted).
- Zeller, M., Beuchelt, T., Fischer, I. and F. Heidhues. 2008. Linkages between poverty and sustainable agricultural and rural development in the uplands of Southeast Asia. Research in Development Economics and – Policy Discussion Paper Series No 6/2008. Department of Agricultural Economics and Social Sciences in the Tropics and Subtropics (490a), Universität Hohenheim, Germany (submitted).
- Zeller, M., Beuchelt, T., Fischer, I., and F. Heidhues. Linkages between poverty and sustainable agricultural and rural development in the uplands of Southeast Asia. Keynote paper presented at the International Conference 'Tropical Rainforests and Agroforests under Global Change', October 05 – 09, 2008, Bali, Indonesia (accepted for conference proceedings 2009).

2006

- Fischer, I. 2006. A Demand Analysis for Livestock Microinsurance in Northern Vietnam. Paper presented at International Symposium on "Towards Sustainable Livelihoods and

- Ecosystems in Mountainous Regions” from March 7-9, 2006; Chiang Mai, Thailand: Chiang Mai University, University of Hohenheim, and World Agroforestry Centre.
- Beuchelt, T. and I. Fischer. 2006. What do Vietnamese Farmers do when a Crisis Occurs? Covering Lack of Resources through Social Networks. In: Buchenrieder, G. and T. Dufhues (Eds.). 2006. Making rural households’ livelihoods more resilient – The importance of social capital and the underlying social networks. Studies on the Agricultural and Food Sector in Central and Eastern Europe, Vol. 34. Halle (Saale), Germany: Leibniz-Institut für Agrarentwicklung in Mittel- und Osteuropa (IAMO), pp. 45-57.
- Beuchelt, T. and I. Fischer. 2006. What do Vietnamese Farmers do when a Crisis Occurs? Covering Lack of Resources through Social Networks. Paper presented at IAAE Symposium at the 26th International Conference of the International Association of Agricultural Economists (IAAE) Brisbane, Australia, August 12-18, 2006 on “Contributions of Agricultural Economics to Critical Policy Issues”.
- Beuchelt, T., Fischer, I. Korff, R. and G. Buchenrieder. 2006. Within Society and Informal Risk Sharing Networks: Which Role do Women Play? Experiences from Northern Vietnam. Paper presented at International Symposium on “Towards Sustainable Livelihoods and Ecosystems in Mountainous Regions” from March 7-9, 2006; Chiang Mai, Thailand: Chiang Mai University, University of Hohenheim, and World Agroforestry Centre.
- Beuchelt, T., Dufhues, T., Fischer, I. and Gertrud Buchenrieder. 2006. Individual social capital – A structural approach. In: Asch, F. and M.Becker (Eds.). “Prosperity & Poverty in a Globalized World: Challenges for Agricultural Research”. Book of Abstracts. Tropentag 2006. Bonner Agrikulturchemische Reihe. Bonn, Germany: University of Bonn. (Poster)
- Dufhues, T., G. Buchenrieder, and I. Fischer. 2006. Social capital and rural development: Literature review and current state of the art. Discussion Paper 96/2006. Halle, Germany: Institute of Agricultural Development in Central and Eastern Europe (IAMO).
- Trung, T.Q., Fischer, I., Dung, P.T.M., and G. Buchenrieder. 2006. Health Insurance for the Poor as one Element of the Social Security Network in the Mountainous Regions of Northern Vietnam. Poster. International Symposium on “Towards Sustainable Livelihoods and Ecosystems in Mountainous Regions” from March 7-9, 2006. Chiang Mai, Thailand: Chiang Mai University, University of Hohenheim, and World Agroforestry Centre.

2005

- Fischer, I. and T. Beuchelt. 2005. Make Natural Resources Last by Changing Women’s Access to Assets - Experiences from Northern Vietnam. Paper presented at Tropentag 2005 “The Global Food & Product Chain – Dynamics, Innovations, Conflicts, Strategies”, October 11-13, 2005; University of Hohenheim, Stuttgart, Germany: Center for Agriculture in the Tropics and Subtropics & ATSAF.
- Fischer, I. and J. Hager. 2005. Livelihood Strategies of Vulnerable Households under Resource Scarcity - Insights from Northern Vietnam. Poster. Deutscher Tropentag 2005 “The Global Food & Product Chain – Dynamics, Innovations, Conflicts, Strategies” October 11-13, 2005 at University of Hohenheim, Stuttgart, Germany: Center for Agriculture in the Tropics and Subtropics & ATSAF.

- Fischer, I. and T. Beuchelt. 2005. Women, Poverty and Risk Management in Northern Vietnam. Paper presented at 11th European Association of Development Research and Training Institutes (EADI) Global Conference “Insecurity and Development - Regional Issues and Policies for an Interdependent World”, September 21-24, 2005; Bonn, Germany.
- Fischer, I. 2005. The Correlation of Risks, Poverty and Health Problems in Northern Vietnam. Paper presented at 11th European Association of Development Research and Training Institutes (EADI) Global Conference “Insecurity and Development - Regional Issues and Policies for an Interdependent World”, September 21-24, 2005; Bonn, Germany.
- Fischer, I. and T. Beuchelt. 2005. Does a Changed Composition of Capital Assets Transform Gender Roles? Experiences from Northern Vietnam. Paper presented at IV. Mainland Montane South-East Asia (MMSEA) Conference: “Sustainable Use of Natural Resources and Poverty Dialogue in Mainland Montane South-East Asia”, May 16-19, 2005; Sapa, Vietnam.
- Fischer, I., Hager J., P.V. Dinh and P.T.M. Dung. 2005. The impact of limited common grazing land on livelihood strategies of vulnerable households in Northern Vietnam. Poster. International Conference “Multifunctionality of Landscapes - Analysis, Evaluation, and Decision Support”, May 18 - 19, 2005; Justus-Liebig-University Giessen, Germany.
- Beuchelt, T., Fischer, I., Korff, R. and G. Buchenrieder. 2005. Social Networks as Means of Information Exchange and Risk management - A Case Study from Northern Vietnam. Paper presented at Tropentag 2005 “The Global Food & Product Chain – Dynamics, Innovations, Conflicts, Strategies”, October 11-13, 2005; University of Hohenheim, Stuttgart, Germany: Center for Agriculture in the Tropics and Subtropics & ATSAF.
- Hager J. and I. Fischer. 2005. The impact of limited grazing land on livelihood strategies of vulnerable households in Northern Vietnam. Paper presented at IV. Mainland Montane South-East Asia (MMSEA) Conference: “Sustainable Use of Natural Resources and Poverty Dialogue in Mainland Montane South-East Asia”, May 16-19, 2005; Sapa, Vietnam.

2004

- Fischer, I. 2004. Media Supported Communication in Agricultural Extension and Participatory Rural Development in Northern Thailand. Research in Development Economics and Policy Discussion Paper No 4/2004. Stuttgart, Germany: Grauer Verlag.
- Dufhues, T., Lemke, U., and I. Fischer. 2004. New ways for rural finance– Livestock insurance schemes in Vietnam. Research in Development Economics and Policy Discussion Paper No 5/2004. Stuttgart, Germany: Grauer Verlag.
- Dufhues, T., Lemke, U., and I. Fischer. 2004. New ways for rural finance? Livestock insurance schemes in Vietnam. Deutscher Tropentag 2004 “Rural Poverty Reduction through Research for Development and Transformation” from October 5-7, 2004 in Berlin: Humboldt University Berlin and ATSAF.

Annex 3: Anteil der wissenschaftlichen Leistung der Bewerberin in den Vorabveröffentlichungen

Paper published in (*submitted to)	Titel	Autors	Own contribution
published 2010 in T. Tschardt et al. (Eds.): <i>Tropical Rainforests and Agroforests under Global Change, Environmental Science and Engineering</i> , pp 511-527, Springer Verlag, Berlin, Heidelberg.	Linkages between Poverty and Sustainable Agricultural and Rural Development in the Uplands of Southeast Asia	Manfred Zeller, Tina Beuchelt, Isabel Fischer and Franz Heidhues.	20% 30% 30% 20%
published 2010 in the on-line proceedings of the 9th European IFSA Symposium, 4-7 July 2010, Vienna (Austria), pp 1279-1288	Risk Management of Vulnerable Rural Households in Southeast Asia	Isabel Fischer and Gertrud Buchenrieder	80% 20%
subsequently accepted for publication in the <i>Journal of Agricultural Science and Technology</i> Vol. 5, No. 9, 2011	Risk Management Strategies of Vulnerable Rural Households in Southeast Asia: A Case Study from Vietnam	Isabel Fischer and Gertrud Buchenrieder	80% 20%
published 2009 in the journal <i>Savings and Development</i> 33 (1): 41-60	Laptop, Livestock Drawings and Ricewine: A Demand Analysis for Livestock Insurance in Northern Vietnam	Isabel Fischer and Gertrud Buchenrieder	80% 20%
published 2009 in H.G. Brauch et al. (Eds.): <i>Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts</i> , pp. 563-572. Hexagon Series on Human and Environ- mental Security and Peace, vol. 4 (Berlin – Heidelberg – New York: Springer-Verlag).	Health and Poverty as Challenges for Human, Health and Livelihood Security: Two Case Studies on Northern Viet Nam and Bangladesh	Isabel Fischer and M.M. Salehin	70% 30%
Submitted to the <i>Asia-Pacific Development Journal</i> (May 2010)	Risk-management Networks of Ethnic Minorities in Vietnam	Isabel Fischer , Tina Beuchelt, Thomas Dufhues and Gertrud Buchenrieder	40% 15% 30% 15%

