Resilient Society, Vulnerable People

A Study of Disaster Response and Recovery from Floods in Central Vietnam

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Cover photographs by Malin Beckman:
1. River through Hong Ha commune; widened after the floods.
2. Transport of rice on the flooded fields of Hai Thanh commune.

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Abstract

The study addresses resilience and vulnerability in relation to natural disaster. It is mainly an empirical study which draws on experience from the process of coping and recovery from the 1999 flood disaster in central Vietnam. As the conditions for coping and recovery varies between geographical and socio-economic contexts, the study looks at five villages in two districts, covering low land, hill land and mountain areas. Interviews and discussions with households and representatives of local organisations and local government have been conducted in the two districts of Hai Lang and A Luoi from 2000 to 2004. The study is multidisciplinary drawing on several disciplines from the social sciences.

The Vietnamese context provides an example of a high level of social resilience. The concept is used to signify the capacity of households and communities to 'bounce back' after a shock, and also the capacity to adapt in order to be more resilient in anticipation of future shocks. The study looks at the roles of local government, local organisations and households in disaster response and finds that the strong relationships between these actors provides conditions for collective action to address the acute needs of the population. Although the level of resilience in general is high, there are several ways in which people are vulnerable. Constraints to recovery included production difficulties due to continued heavy rains, disease of livestock, limited access to land, reduced labour capacity due to health problems as well as the limitations of the social security system. Differences in capacity to recover became apparent over time, which emphasises the importance of the time perspective when looking at resilience and vulnerability. Vietnamese society is changing from a situation where the state had a high degree of responsibility for production and livelihoods, to a market economy in which risk is increasingly borne by the household rather than the collective. This gives rise to new types of vulnerability, which require new types of mechanisms for social protection.

Key words: Resilience, vulnerability, local organisations, floods, disaster, rural development, Vietnam, institutions, coping, recovery, livelihoods, risk, poverty.

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For
Magda, Lydia, Melker
and Trung Hiếu

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Fieldwork sites

Hải Lăng district in Quảng Trị province:
Phước Điền village in Hải Thành commune,
Văn Trị village in Hải Tân commune,
Xuân Lộc village in Hải Chánh commune.

A Lưới district in Thưa Thiên Huế province:
Pa Rinh village and Cơn Tôm village in Hồng Hạ commune.

Abbreviations

CPC	Commune People's Committee
CPRGS	Comprehensive Poverty Reduction and Growth Strategy (Government of Vietnam)
DPC	District People's Committee
HUAF	Hue University of Agriculture and Forestry
MOLISA	Ministry of Labour, Invalids and Social Affairs
SAREC	Sida's Department for Research Cooperation
SEI	Stockholm Environment Institute
SL	Sustainable Livelihoods
Sida	Swedish International Development Cooperation Agency
UBND	Ủy Ban Nhân Dân = People's Committee
UNISDR	United Nations International Strategy for Disaster Reduction
VND	Vietnam Dong. National currency. 1 USD was approximately 15 000 VND in 1999, and approx. 16 000 VND in 2006.

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1. Introduction

The water rose very fast. At midnight our house collapsed. We managed to hold on to the stack of rice straw by the fence until morning when my brother rescued us. The water was very cold, and there was wind and high waves. We lost our 4 pigs, 50 chickens and our buffalo. 3.5 tons of rice got wet and cannot be used. 2 beds broke and other things floated away. Mr. Bau, Van Tri village, Hai Lang district.

November 2nd 1999 a tropical storm came in over central Vietnam and unleashed 2300 mm of rain in 4 days (Duong 2000). Most of the rain fell at the head of watersheds in the mountain chain bordering with Laos, causing the rivers to rise with enormous force. At the same time the storm raised the sea level and stopped the rivers from draining into the sea. In the mountains, the river pulled away large chunks of the riverbanks, bridges and houses close to the river and uprooting trees. When the water reached the low land the force was still sufficient to pull away houses and bridges. During the evening and night the water rose to the roofs of many houses. As the water rose quickly and it was dark, people could not evacuate themselves and their belongings to higher areas.

The 1999 floods in central Vietnam were a shock to the people in the seven provinces affected. The people I spoke to had not experienced anything like it before. It has been called the 'flood of the century' and was given great attention in Vietnam. Massive support was mobilised for relief and recovery and large investments have been made as part of attention to disaster mitigation.

1.1 Purpose

The purpose of this thesis is to study how the Vietnamese society and households responded to and coped with the disastrous floods of 1999. I am interested in the different socio-economic conditions that influence recovery and its impact for different groups of people.

Southeast Asia is an area prone to natural disasters. Every year Vietnam is hit by a number of tropical storms, which cause more or less severe damage. Central Vietnam is an area that is especially exposed. Every year there is loss of lives due to storms. Historically, this has always been the case. The Vietnamese society has always given high priority to protection against floods (Luttrell 2001). Storms are perceived by people in Vietnam to have become more frequent and serious during the past decades, and increasing policy attention is being given to disaster mitigation. This study draws on the experience from the disaster response to the 1999 floods and the discussion around disaster mitigation and reduction of vulnerability to future floods.

The research presented here has been conducted in two districts; Hải Lăng district in Quảng Trị province, which is primarily a low land, coastal district, but which also stretches into hill land area; and A Lưới district in Thưa Thiên Huế province, which is a mountainous district. The experience of households in four communes in these two districts is examined during the time period 2000-2004. Households and staff of local organisations and local government were interviewed on their experiences in relation to the floods and the recovery process. The research looks at household access to resources for coping and recovery, community measures of relief and rehabilitation, government support and the institutional conditions that influence distribution of resources. Vulnerability and resilience of different groups under different socio-economic and geographical conditions are discussed, as well as the development issues that arise from the experience of coping with the flood crisis.

The anthropologist Eric Wolf alerts us to how "the arrangements of a society become most visible when challenged by a crisis" (cited in Miller 2003). By studying how people and society cope with and handle a disaster, we get insights in the organisation, strengths and weaknesses of Vietnamese society. The study of vulnerability and resilience in the context of natural disaster sheds light on social cohesion, the balance between household and collective responsibility for managing hardship and how the household capacity to cope with difficulties relates to and depends on both geographical context and institutional conditions.

The title of the thesis: 'Resilient society – vulnerable people' indicates that the Vietnamese society is organisationally relatively well equipped to handle crises situations. Local governments and local organisations responded quickly by supporting people in need with food and necessities and by rehabilitating damaged property. The capacity and response of society however differs in relation to different groups of people. It will be argued that, while the response of the government and communities work well for the majority, there are groups of households who due to various reasons fall outside of the institutional structures for recovery. Many poor households are particularly vulnerable to floods because the conditions that make people poor are similar to those that constrain recovery. Such issues include health, access to land, access to markets as well as an insufficient social security system. This would require the combination of poverty reduction and disaster response.

Vietnam is in a process of transition from an economy where the state at all levels had a high degree of responsibility for production and livelihoods of people, to a market economy in which risk is increasingly borne by the individual rather than the collective. This gives rise to new types of vulnerability, which require new types of social protection mechanisms (Adger 2001). Collective organisation of access to resources exists to a higher degree in my fieldwork area, compared to the rest of Vietnam. I am interested in the role of the collective for resilience and capacity to cope with disasters and in how this role is changing.

It is proposed that resilience to disaster is highly related to the 'normal' livelihood conditions of the people affected. Coping and recovery from the 1999 floods cannot be seen in isolation from the frequent seasonal production risks that are ever present

in people's livelihoods in the study area. Floods and drought frequently lead to crop losses and the degree of animal husbandry disease is high, which were important constraining factors for disaster recovery. The mountain population have particular difficulties as they are remote from markets and services and are going through a struggle with the process of adapting from their traditional shifting cultivation practices to 'fixed cultivation', which is more input intensive and exposed to new types of risks.

The wider significance of the Vietnamese case concerns learning from a context of a high level of organisation and coordination in disaster response. It is a positive example of resilience, where there is high capacity in society to cope with and recover from disaster. Yet, vulnerability to floods is still a matter of serious concern. A large majority of households in the studied area are vulnerable in the sense that disaster floods, as well as the more frequent floods reducing the crop harvest, are serious impediments in the development of their livelihoods. For some households the vulnerability to floods interacts with other vulnerabilities, resulting in the risk of getting stuck in a poverty cycle. In order to reduce such vulnerabilities, we can learn from the process of coping and recovery in the studied area, which indicates conditions and mechanisms that lead to differences in capacity to recover.

Policies and institutions may address vulnerability and resilience at community level, but have different consequences for different groups within the community. The organisations and authorities at commune- and village level have an important role in mediating resources within the village, which may have either differentiating consequences or result in broad access.

The Vietnamese context provides an interesting environment for the study of the relation between individual and collective conditions for vulnerability and resilience. The collective organisation of production was reformed during the early 1990s and land allocation is now based on household tenure. There are, however, still many elements of collective influence and decision-making in Hai Lang and A Luoi districts, where this study is conducted. Collective action was strong in the immediate disaster response, while the networks of the individual household become more important in long-term recovery.

My research question is concerned with how vulnerability can be understood in the context of a resilient society, with a high level of organisation and active disaster response. How do we understand the vulnerability and resilience that is determined by conditions that are common for a village, as compared to conditions that have a differentiating effect between households?

1.2 Research process and method

Empirically driven – theoretically informed

This research is primarily a local level empirical study of the process of coping and recovering from the disaster floods in central Vietnam in 1999. The research process has been structured in order to follow the chronology of the developments after the

floods. The time perspective has been an important element in the study, whereby differences in the capacity of households and communities have become apparent. The theoretical perspectives have been used to structure the empirical findings, to pose questions to the empirical data and to facilitate looking at the findings from different perspectives. The theoretical context of the study is presented in chapter 2.

My background is in agriculture economy, but the thesis also draws on other disciplines including, human geography, sociology and political science. My interest is in the livelihood conditions of households and how these were affected by the floods. Such conditions are influenced by a wide range of factors. My entry point from agriculture economy means that the study has a major focus on the context of agricultural production and natural resources. Geography contributes to my interest in time and place, and political science to the relation between the state and other actors in society.
The interest in how relations in the communities and in society influence household access to resources collects inspiration from sociology. I do none of these disciplines justice in terms of theoretical framework. My approach should be seen as an effort to bring together concepts and perspectives that I see as important in understanding vulnerability and resilience for households in different socio-economic and institutional contexts.

Delimitations of the study

There are naturally several dimensions, which are important for vulnerability and resilience that have not been included in the study.
For example, socio-cultural institutions strongly impact on resilience, but has not been included. Neither have the environmental and ecological perspectives, although they are of obvious importance. A deeper understanding of the historical background to present day policies and practice would contribute significantly. The delimitations of the study are a consequence of my capacities as an agriculture economist as well as what was feasible to cover within the time frame.

All scales in society are not covered in the research. The study is limited to household, village, commune and district level. National and provincial policies are referred to as part of the local conditions in Hai Lang and A Luoi districts. The policy frameworks for disaster mitigation etc at national level are not addressed as this would have led much further and remains to be discussed in future studies. Neither was the discussions taken up to province level, as the staff at this level do not primarily work directly with the villagers.

The research focuses on the situation of the household and does not go into the differences within households, like gender and generational differences. It is possible that having the household as a unit of analysis may obscure intra-household differences in access to resources and vulnerability. It is likely that there are gender differences in coping and recovery, which have not been revealed in this research. The assessment was, however, that a gender analysis would require a much deeper and comprehensive level of interviews, for which there was no scope during this study. The reason for focus on the household level is also linked to the purpose of

the study, which focuses on the livelihood, i.e. ways of making a living. The household in this context is seen as an economic unit, rather than as a group of family members.

A gender analysis of disaster impact and vulnerability to floods is underway in A Luoi district, conducted by researchers at Stockholm Environment Institute (SEI) together with staff of Hue University of Agriculture and Forestry.

A qualitative study

The study has been done as a qualitative analysis. The purpose has been to get subjective accounts from households in different situations about their process of coping and recovery from the floods.
The discussions and interviews with households, village leaders, representatives of local organisations and authorities at commune and district level have provided insights into the institutional context, the rationale behind the implementation of disaster response and the relations between households, organisations and local government in the recovery process.

The interviews were semi-structured, i.e. the respondents were asked to give their story based on fairly open questions, followed up with more detailed questions to clarify and elaborate.

The experience gained is that interviews and discussions provide much more information than a questionnaire survey. This is especially so regarding sensitive information e.g. informal loans, which people would be reluctant to document. The purpose was to understand how households, local leaders and staff look at the problems and opportunities that arose in the coping and recovery process, not just to collect information about the existence of such problems and opportunities. A formal survey could have provided additional weight to the research findings, but the limited number of interviews was compensated for by the iterative process of the research, in which the results and conclusions were discussed repeatedly at household, village, commune and district level.

The interviews were supplemented with group discussions. In some of these discussions PRA[1] tools were used, such as ranking, mapping and organisational (Venn) diagrams. These were good starting off the discussions, but most of the information came from individuals commenting on their own (household) situation, or leaders commenting on the situation in the village.

Selection of the villages studied

The fieldwork covers three villages in three communes in Hai Lang district and two villages in one commune in A Luoi district. They were selected to represent different geographical and socio-economic conditions and had all been severely affected by

[1] Participatory Rural Assessment, as initiated by Robert Chambers and elaborated by many researchers and practitioners.

the floods. All the villages are situated on the banks of major rivers[2]. They are slightly poorer than average in the district. (Section 3.3 situates the villages within the broader district context.) The selection was done in agreement with the district and commune People's Committees. It can be expected that the study was directed to villages with more hardship than others in order to draw attention to the need for support.

By highlighting the differences in impact of the floods and means of coping and recovery between the villages the study attempts to contribute to an increased understanding of how vulnerability and resilience differs depending on the context. Policies for disaster mitigation and risk reduction in Vietnam have previously tended to focus on low land conditions, but have recently started to pay attention to regional differences (Govt of Vietnam 2001).

General and context specific

The interviews with households presented pictures of the situations in their villages. The discussions with village leaders, local organisations and district staff served to understand whether the situation for the households interviewed were general for the village and sometimes even for a wider area. All villages have their own specific conditions, and generalisations within a broader area must be treated with caution. In the analysis, differences between the low land, hill land, and mountain areas are pointed out, as many of the outcomes are interesting from this perspective. This does not mean that all low land, hill land, mountain areas necessarily have these characteristics. Sometimes the reference to low land, hill land or mountain is mainly to clarify which of the studied villages are being referred to. In other cases the interview results with district staff suggest that the findings are more broadly relevant for all the low land, hill land, or mountain area of the district. In the latter cases such assessments are referred to. The experiences regarding for example the importance of different types of assets and local level organisation may be more broadly relevant.

The frame of the fieldwork

The study included interviews and group discussions conducted in five villages, as well as discussions with authorities and organisations at commune and district level in the two districts where the villages are situated. Interviews were held with 9-16 households in each village. Hai Lang is more densely populated and each of the villages there has about 200 households, while the villages in A Luoi have about 40. For details on number of interviews and discussions held, see Appendix.

Fieldwork was conducted in May 2000, October-November 2000, February-March 2001, December 2001, November 2002 and May 2004. The study was conducted as team-work with staff from the district organisations and researchers from the Hue University of Agriculture. In 2000 and the spring of 2001 the interviews were done

[2] Xuan Loc village lies by the O Lau river; Van Tri village by the O Giang river, Phuoc Dien village by the Nhung river and Hong Ha commune by the Bo river.

with a larger team of staff. In the fieldwork of 2002-2004 the interviews were held by the author together with one other person from the team. The fieldwork data thus consists of two types of interviews. Interviews by the author were followed up for a longer time period; and consequently from these households there is a better understanding of their story and most of the quotes are from them. Together with the interviews done by the rest of the team, a somewhat broader sample was provided as a basis for discussion with village, commune and district leaders.

The interviews and discussions were not taped and transcribed, which means that the quotes should be taken as the interviewers' notes of what has been said, rather than as direct word-by-word quotes.

The study contains more data regarding Hai Lang district compared to A Luoi district. Overall conditions in Hai Lang district are more frequently referred to, whereas conditions in Hong Ha commune are mostly particularly written about, rather than A Luoi district as a whole.

Selection of households to interview

The selection of households did not follow statistical sampling. It was done based on village categories of households representing differences in severity of flood damage. When selecting households, attention was given to getting a spread of poor, middle-income and better-off households. Interviews were held with households who had experienced significant losses, although not loss of life. The selection was done partly as a random sample from village lists of households, in combination with selection through discussion with the village leaders. These leaders did not appear to steer the sample of households or avoid any particular households. The aim was to get a broad spread of households as a basis for discussion of conditions in the village.

Fieldwork sequence

The first round of interviews, in May 2000, focused on the families' experience of the floods, the losses, the support received, the role of local organisations and the types of resources they could access for coping. The interviews focused partly on the issues that the respondents raised as important for their coping and recovery. This meant that the content of the interviews to some extent differed between the households. Some talked a lot about health, others about loans, others about migration etc. Some basic information was collected from all households, for example: data on losses, food deliveries, credit and loans.

Discussions were also held with groups of villagers, where issues of the disaster impact, reasons for differences in coping and recovery and the role of different organisations and the authorities were commented upon. After the completion of interviews and discussions in a village, the results were presented at a follow-up meeting with representatives of village- and commune leaders and organisations. These meetings provided comments on village results, additional information on commune level actions and comments on differences in vulnerability within the

commune. Finally, meetings were held with district level organisations and authorities, to get further comments and to put village results in a district perspective. District actions for disaster response and mitigation were also discussed at the meetings. The results from the household interviews were mostly verified at commune and district level. Only a few issues, like the prevalence of taking informal loans, were said to be outside the scope of the authorities' knowledge, but that it would be 'looked into'.

The second round of fieldwork in October 2000 followed a similar pattern. The focus was then on the process of recovery. Two rice crops had been harvested and the immediate crisis had subsided. A lot of the discussion concerned the role of bank credit and private loans in recovery. The fieldwork in March 2001 was mainly oriented towards the district level organisations and authorities and their assessment of priorities in order to improve resilience. The third and forth round of household interviews in December 2001 and November 2002 followed-up on the recovery process. Group discussions were also organised at village level in order to get household opinions on adaptation and production strategies from a vulnerability perspective. The work in 2004 included only a few household interviews and focused mainly on interviews with organisations and filling gaps from previous fieldwork. (See appendix for a list over interviews and meetings.)

In the interviews in 2000-2001, a picture of the village as a whole was aimed for. In the interviews 2002-2004 there was more focus on the vulnerable households, i.e. households who had more difficulties to recover than average in that village.

The household as the lowest level of analysis

A household in this area normally contains three generations; husband, wife, two-four children and the husband's parents. In most cases both the husband and wife took part in the interview. In Hai Lang district it was mostly the husband who took the lead and talked more. In Hong Ha commune many of the households were represented by the woman. This may have been an effect of the circumstance that an NGO project working with the commune on 'Community Based Natural Resource Management'[3] has during many years focused on cooperation with the women. The respondents answered on behalf of the household. The answers may have been influenced by whether it was the husband or the wife who answered, but no systematic differences were noted in the material.

The experience of the study is that the well-being of family members to a large extent depends on the access to resources of the household as a whole, rather than being differentiated for family members. Division of labour in agriculture is relatively equal between men and women, although women work more in total, as

[3] This project is managed by a multidisciplinary group of researchers at Hue University of Agriculture and Forestry, with support from IDRC (Canada) and Ford Foundation.

they often bear most of the responsibility for household work and the children as well[4].

Conditions for research in the study area

The possibilities for me to do research in the area were much improved by the fact that I had lived and worked in the area prior to the study. I worked as district coordinator in the Quang Tri Rural Development Program[5] based in Hai Lang district 1996-1999.

The research draws on the understanding that I developed during this period. It gave insights into livelihood conditions of different groups of people as well as the relations between authorities, local organisations and villagers. My understanding of Vietnam also derives from three years of working in Tuyen Quang and Yen Bai provinces in the Vietnam-Sweden Forestry Cooperation Program 1992-1995.

The previous work in the area meant that the authorities had a level of trust in me, which provided conditions for me to access people. It was important for me that the leaders at different levels were involved and felt comfortable with the research. I find that openness and trust in this respect is a prerequisite for doing research in Vietnam.

The feed back meetings at village, commune and district level provided the opportunity for me to 'test' conclusions drawn, at different levels. I do not perceive the research results to be politically sensitive, as they are part of an open discussion at district level. In a few cases I have avoided using the names of people interviewed, in case households might feel exposed. The staff are mainly quoted with the positions they held, sometimes with names, when they were known in the local area anyway.

Possible biases

The interviews were often conducted in the presence of someone from the village- or cooperative leadership. This is a prerequisite for acquiring research permission from the authorities. There was therefore some risk that the respondents would 'modify' their story according to what they thought was expected of them. Although it was difficult to know if that was the case, there was a heterogeneity in the answers that suggests that households responded independently. Many households seemed to take the opportunity of the presence of village leaders to raise issues that they were concerned about. People would confront the village leaders with issues of access to credit and irrigation etc., and with their opinions on how it was organised. The

[4] The Women's Union in Hai Lang district has made time studies on gendered use of time on different types of work.

[5] A bilateral cooperation between Finland and Vietnam with development projects in a wide range of areas, including, credit, extension, capacity building and infrastructure. There was close cooperation with the district and commune People's Committees, the mass organisations, the cooperatives and the villagers.

experience from my previous work in the area is that people are fairly open about voicing criticism.

The village leaders tend to know the household conditions well and their presence at the household interviews made it easier to get supplementary information and clarifications from them afterwards, when discussing the implications of the interview data. An example of such supplementary information could be if a household for instance failed to mention access to overseas remittances, or other sources of income. Either the interviewees thought it not relevant, or maybe they thought it would disqualify them from potential support.

The issue of expectations that the research would lead to some kind of support was a general problem. It was reinforced by the fact that I had been working previously as a project coordinator in the area, and was thus connected with a project environment in many people's eyes. This was mainly a problem in the discussions with commune authorities, where it was difficult to stick to a discussion of conditions in the village, rather than their interest in arguing for investments. Household members however, were keener to tell the story of their own situation and household answers regarding received support were given with a level of detail that indicated accuracy. However, there is a risk that households, who for some reason had not received support, were excluded from the list of interviewees.

In Hai Lang my co-interviewers were people from the district Agricultural section. In Hong Ha commune they were university staff active in the Community-based Natural Resource Management Project, mentioned above. They are people that I know well and whom I trust. I had worked with them in the villages before and had a good impression of how they worked with the villagers. They impressed me as genuinely interested in the farmers' stories, situation and opinions.

The information that they got from their interviews corresponded with the information that I got from my interviews. The type of biases in the answers that could have occurred would therefore relate to 'outsiders' in general, not only me, as a foreigner. There is always the risk that the respondents feel that they should present modified stories to coincide with what they think is being expected of them. The findings were discussed with many people at different levels in order to triangulate the results. Biases or distortions that may have occurred could involve interviewees not voicing criticism against local authorities or organisations. I was careful to get details, in order to avoid positive but vague answers.

Interviews were conducted in Vietnamese language, which I speak and understand. Misunderstandings due to translation difficulties could thus mostly be avoided. On the other hand there was the possibility that I thought I had understood something which I had not. In order to grasp nuances in the language and to avoid misunderstandings, the interview team discussed the results after completed interviews in order to make sure that we had the same perception of what had been said. In group discussions in Hong Ha commune the participants would sometimes switch to their own language, Ca tu or Ta oi. I was then dependent on one of them translating to Vietnamese, which never captured the whole complexity of what was

said. The cooperation with staff who worked closely with the villages provided me with valuable background and the contextual knowledge necessary to be able to understand the interviews. I am infinitely grateful to them for all the time and effort they have spent in discussions. Naturally, whatever biases they had, were also present in their explanations of what was going on. I tried to discuss with people representing many different roles, and to keep an awareness of what each person stood for. The level of trust between us probably influenced the research in different ways. On the one hand, it will have entailed the risk that I would too easily 'buy' the version of the district staff in understanding the situation. On the other hand, the staff were prepared to share with me their personal views and experience with me, and not only the 'official' version.

1.3 Structure of the thesis

Chapter one introduces the thesis. Chapter two formulates the theoretical and conceptual framework for the thesis, and places it in relation to relevant theoretical contexts. Chapter three gives a background to the policy environment in Vietnam and introduces the fieldwork area and the livelihood conditions there.

Chapter four to six are mainly descriptive presentations of the fieldwork results, structured roughly according to chronology and geographical area. Some references are made to empirical and theoretical experiences by other authors relevant to the presentation. Chapter four gives the account of the disaster and the impact for different groups of people. Chapters 5 and 6 have a similar structure. They present the fieldwork data on humanitarian assistance, coping and recovery, separately for Hai Lang district in chapter five and for Hong Ha commune, A Luoi district, in chapter six.

Chapter seven is analytical and ties together the different factors influencing coping and recovery and their impact on the livelihood situation of different groups of people in the various geographical and socio-economic contexts. The institutional context of relations between local government, local organisations and households is discussed.

Before chapter eight the thesis focuses on the response to the 1999 floods. Chapter eight broadens the perspective to discuss actions and policies for disaster mitigation, risk reduction and adaptation and the implications for vulnerability and resilience. Chapter nine is a summary and concluding discussion of the research results.

2. Theoretical and conceptual framework

2.1 The framework and approach of the study

The thesis centres on a number of issues in relation to the disastrous floods of 1999. They include:

- How did the Vietnamese society and households respond to and cope with the floods?
- Which factors influenced household capacity to cope with and recover from the floods?
- Which were the different institutional and socio-economic conditions that influence the impact of the floods and the recovery process for different groups of people?
- Which were the characteristics of the livelihoods and the production system in the different geographical contexts and how did this influence flood impact and capacity to cope and recover?

In order to explore these questions the thesis engages with several concepts and discourses, which are discussed in the sections below in this chapter. The main concepts are vulnerability and resilience.

The concept of vulnerability is vital in order to understand why a hazard becomes a disaster, and for whom. The study refers to Hewitt (1997) in terms of the focus on the conditions that influence people's protection, ability to withstand, mitigate, cope with and recover from damage, rather than the severity of the damaging agent itself. The study looks at the vulnerability of both the community and of the households. The following definition of vulnerability by Wisner et al. (2004) is adopted: '*the characteristics of a person or group and their situation that negatively influence their capacity to anticipate, cope with, resist and recover from the impacts of a hazard'*. This definition recognises that vulnerability is a characteristic both of people and their situation. For example: A characteristic like 'health problems' may cause a person, and the whole household, to be vulnerable in one context, but not in another.

The concept of resilience is used as the opposite of vulnerability. In the definition by Walker et al. (2002) resilience is: '*Maintaining the functionality of a system, when it is disturbed'. 'Maintaining the elements needed to renew or reorganise the system, to maintain its main functions'*. The approach in this study is similar in that resilience is used to signify the capacity of households and communities to 'bounce back' and recover from disaster, and their capacity to reorganise in order to maintain crucial functions of their livelihoods. The concept includes the ability to adapt and build capacity to cope with future shocks. Resilience is seen as a product of household characteristics, their assets, their means of making a living, as well as the characteristics of the community and the society to which they belong.

Resilience is a central concept in the 'Sustainable Livelihoods Framework' as discussed below in 2.2. Capacity to recover from shocks is a core part of 'sustainability' as argued by Chambers and Conway (1992). The Sustainable Livelihoods framework centres on household assets and livelihood activities in a context of 'policies, institutions and transforming processes', and discusses which livelihood outcomes are the result of this interaction. In this thesis household vulnerability and/or resilience is at the centre of the analysis. Livelihood activities and outcomes are discussed in the context of capacity to cope and recover from the 1999 disaster. Wisner et al. (2004) argue that a vulnerable livelihood is the opposite of a sustainable livelihood. The aim of the thesis is to further the understanding of what constitutes a vulnerable and/or resilient (sustainable) livelihood.

The differences in resilience between the villages depend on a range of factors. The study focuses on the following:

- Geographical location of settlements and production
- Production conditions
- Access to resources like land, labour, financial assets etc
- Access to support from the government, NGO's and the public
- Mutual support networks
- Institutional capacity of local government and local organisations in disaster response
- Relations of trust between actors in society
- Institutional context of tenure rights, labour markets, common property
- Government policies on disaster mitigation, natural resource management, social protection and poverty reduction.

When seeking to understand the conditions, which determine access to resources for coping and recovery for different socio-economic groups, the study builds on Bebbington (1999) who distinguishes between collective and individual aspects of access. The former is when the organisation of access to resources is institutionalised for the community or a larger group of households, while the latter depends on factors specific to the individual household. This is an important aspect in the study area, Hai Lang and A Luoi, where there is a high degree of collective organisation of access to resources. The study looks especially at the role of the cooperatives and their role in mediating access to resources in Hai Lang, in particular for the poorer households.

The resilience of the communities is explored and its relation to collective action in disaster response, as well as the strong role of the state in providing and coordinating resources. The study refers to Peter Evans'(1996) discussion of state-society synergy, which he argues is based on equitable distribution of resources and a strong state. The third factor in his theory, which is strong state-private relations, is complicated in the Vietnamese context. Such relations are more explicit in terms of state-household relations. There are however few private companies who are active locally in the area.

For the discussion of state-society relations I also draw on theory and experience from Elinor Ostrom (1993), Michael Lipsky (1980) and Judith Tendler (1997) who

highlight the relation between individual staff and the villagers as important in understanding the outcome of development actions. Tendler mentions trust and responsiveness as key factors. In her example from Ceará in Brazil the local staff enjoyed strong recognition of their actions. Tendler concludes that the extent to which government programs are able to combine social capital formation with the delivery of services is a strong factor behind the success of development efforts. The close interactions between staff and clients resulted in integration between state and civil society by making officials almost part of the communities. This echoes my experience of state-society relations in Hai Lang and A Luoi, where I argue that a high level of trust is prevalent, which influences collective action and enables effective disaster response. The above authors' contributions are further introduced in 2.9 below, and discussed in chapter 7.5.

The concept of 'communities' is sometimes used when referring to the villages in Hai Lang district and Hong Ha commune. The concept of community is problematic as it can give an impression of homogeneity of interests, conditions and relations. The analysis in the study acknowledges that there are such differences within the community, which can cause tension. The concept is still useful, for example when discussing the differences in vulnerability within a community. Here the emphasis is on the group of households rather than the village as a place.

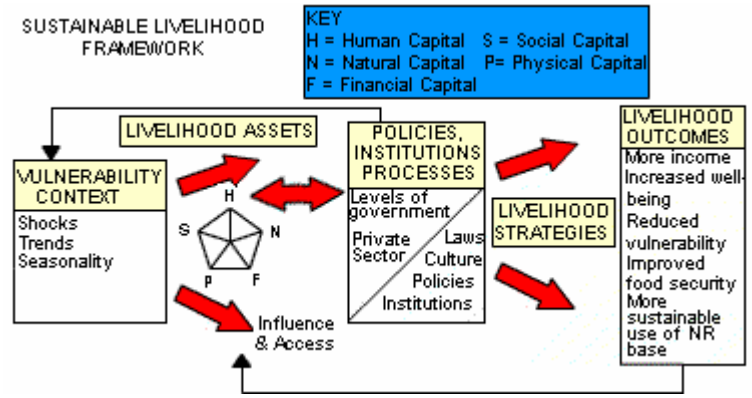
The particular vulnerability of the poor is prevalent through the whole thesis. Poverty and vulnerability are seen as strongly related. Hulme et al. (2001) discuss in terms of the 'transient poor', as distinct from the 'chronically poor'. The former is when people fluctuate above and beneath the poverty line and occasionally dip into poverty due to an extreme decline in income. This distinction is important when looking at vulnerability to disaster. It is argued that government policies and local action in disaster response focused on the needs of the majority of the population who faced major losses and experienced hardship of the duration of one to three years. They can be said to be transient poor. The chronically poor were not given specific attention. The material suggests that the support systems were insufficient for the needs of the chronically poor households as they suffer from additional difficulties, not only the floods disaster. The prevalence of such 'additional difficulties' makes it necessary to discuss recovery from disaster in a broader context of poverty alleviation.

2.2 The sustainable livelihoods framework

The Sustainable Livelihoods framework was introduced by Chambers and Conway (1992). The perspective in this thesis lies close to Chambers' definition of livelihood sustainability, which is '*household capacity to recover from crises and shocks and to generate new activities in response to needs and opportunities. This capacity depends on the level of risk, household assets, the institutional structures and processes that provide the context for people's livelihood'*.

Chambers definition of sustainability thus emphasises resilience, i.e. the possibilities of households to 'bounce back'. This agrees with the focus in this study on coping and recovery after disaster as a determinant of livelihood resilience. The assumption is that there is not a correlation between the level of damage and capacity to recover. People may be hard hit by the floods, but still have the capacity and institutional support to recover. On the other hand, smaller impacts may also have severe consequences for some people. The Sustainable Livelihoods framework does not suggest that recovery means continuing with the same livelihood activities as before the disaster. Scoones (1998) argues that the context, as well as people's access to resources continuously changes, which requires capacity, as well as access to resources to adapt. The concept of adaptation is crucial also in the concept of resilience, which is discussed further in section 2.5.

Scoones describes the SL framework as a tool for analysing the livelihood resources, institutional processes and livelihood strategies, which are important in enabling and constraining the achievement of sustainable livelihoods for different groups of people.



Source: www.livelihoods.org Institute of Development Studies.

The thesis also emphasises the relation between household resources and institutional and organisational conditions. Scoones (and others) however tend to focus on household strategies to a higher degree than is done here. Instead of seeing household strategies as separate decisions based on the institutional environment, this study emphasises the integrated nature of household actions and the institutional environment. It is a characteristic of the study area that government policies and institutions have a major influence on household behaviour, which in many cases makes it difficult to distinguish the households' own strategies from the context of community level strategies and state policies. This does however not mean that household responses are homogeneous. They differ between households depending on differences in institutional relations, access to resources and household capacities.

The Sustainable Livelihoods approach has made a significant contribution to asset analysis (Scoones 1998), which is also used in this study to analyse the importance of different assets for coping and recovery, as well as the consequences of such asset use for building resilient livelihoods. The SL analysis divides household assets into 5 types of 'capital', namely physical, financial, human, natural and social capital. Sometimes institutional and/or political capital are added as separate types of capital, at other times they are included in social capital. The three latter types of capital are related and can be difficult to separate conceptually.

Twigg (2001) sees the potential for using the Sustainable Livelihoods approach for disaster risk reduction by paying attention to household livelihood assets and vulnerabilities in order to identify entry points for protecting those assets that are most at risk, or that could be most valuable in a crisis. Chapter 7 ties together the outcomes of the fieldwork to analyse the importance of different types of assets for coping and recovery.

2.3 Disaster and Risk

A hazard turns into a disaster if people are vulnerable.

Hewitt (1997) distinguishes between disaster and hazard. In his definition it is the consequences of the hazard, which determines whether it becomes a disaster or not and for whom. The same magnitude of a hazard (floods, in this case) may have very different consequences depending on mitigation, preparedness and socio-economic factors influencing the losses and the capacity to recover. People have different capacities and possibilities to mobilise alternative resources to cope with the losses. To have a low level of such capacities make people vulnerable. A disaster is thus the combination of a hazard and vulnerable conditions of a population. A hazard does not in itself necessarily produce a disaster. (Hewitt, Twigg, Wisner and others).

The research focuses mainly on the societal factors that influence vulnerability and resilience to flood-hazards. The focus on societal factors, as opposed to the extreme forces of nature is sometimes referred to as the 'structuralist paradigm', as opposed to the 'hazards paradigm' (Hewitt 1997). Hewitt's point is that there is not necessarily a relation between vulnerability and living in an exposed place. The biophysical exposure explains only a smaller part of how severely damaged people are by a hazard. Hazards are spread all over the world, but most deaths from disaster are in the developing world. A UNDP study (2004) found that 11 per cent of all people exposed to natural hazards live in countries with low human development index. They account for 53 per cent of disaster deaths.

There are many definitions of disaster as discussed by Quarantelli (ed. 1998). Some imply damage to the society, loss of control and social breakdown. This did not apply to my study area. The Vietnamese society has the capacity to cope with crises. The flood damage was a disaster to many individuals and caused a lot of suffering, but as will be shown in chapter 5 and 6, it was not compounded by social breakdown.

The UN/ISDR (United Nations International Strategy for Disaster Reduction) definition of disaster is "*A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope, using its own resources.*"

The focus of this definition is on the community and society and its capacity to cope 'using its own resources'. If 'society' refers to the area affected by the hazard, it is clear that there was a need for 'outside resources' to cope with the 1999 floods. 'Coping with its own resources' is vague, as most communities even under 'normal' conditions have an interactive relation with the wider society, which includes dependency on resources from 'outside'. Compared to the capacity of the Vietnamese society as a whole, the disaster was relatively local in character and did not have disastrous consequences at a national level, which has been the case in other countries.[6] Vietnam received international aid in response to the 1999 disaster, but it was limited in comparison to the Vietnamese state funds for this purpose.

There is no commonly accepted definition of what size of losses, injury or damage that constitutes a disaster. What people perceive as a disaster is mainly a subjective matter.

As central Vietnam is a flood prone area, people live with the risk of crop losses as a constant threat. Disaster lies at the one end of a continuum of an ever present threat of bigger or smaller losses. Hewitt (1997) discusses the distinction between routine risk and extreme events. The former are integral, accepted, although feared, parts of everyday life. The latter are threats and levels of damage that can overwhelm whole communities. Consequences vary, however, for different people. A flood may be a disaster for some, but not for others.

Risk

Slovic and Weber (2002) distinguish between risk assessment and risk management, where the former involves identification, quantification and characterisation of risk. Risk management centres around processes of communication, mitigation and decision-making.
Vatsa (2004) finds that in social science, the concept of risk is primarily concerned with the distribution of risky outcomes and its impact on the people who experience them. This study focuses on risk management issues rather than the discussion of frequency and probability of risky events.

[6] IMF studies of disaster in Cambodia, Honduras and Zimbabwe found that disaster impacts included deterioration of fiscal accounts, along with the worsening of external trade balance, with loss of export earnings and higher imports of food and reconstruction material. Fiscal impacts also involved cuts in social spending, and post-disaster inflation on food prices. (White et al. 2004)

The ISDR definition of risk focuses on 'probability' i.e. *'The probability of harmful consequences, or expected losses, resulting from interactions between natural or human-induced hazards and vulnerable conditions'.* On the other hand the definition emphasises the relation to vulnerability, i.e. that risk is defined as a product of hazard and vulnerability (R=H x V). 'Probability' in this context has less to do with statistical analysis, and more to do with an understanding of vulnerability.

Risk can be understood as subjective and socially differentiated (Miller 2003). Miller emphasises that it is crucial to recognize that risks may be either inherent to and exist within social systems, or can be created. It is important to consider the social contexts in which risks occur and that people therefore do not necessarily share the same perceptions of risk and their underlying causes.

I subscribe to the view of risk as socially differentiated, and the need to analyse it in terms of communities at risk, while at the same time recognising the differences in risk within the community.

People or their livelihoods may be at risk due to location of settlements and production, type of production and seasonality.
Hewitt (1997) discusses the displacement of risk, where he identifies how actions at one scale can transfer the risk spatially to other scales or other segments of society. Transfer of risk is important when discussing water-related hazards like floods, since water moves, and efforts to protect one area is likely to move the water to other areas.

Vatsa refers to Siegel (2000) regarding the discussion of household specific risks versus risks, which affect many households in a community or region simultaneously. The former are called idiosyncratic risks and the latter covariate risks. The covariation of risk depends on the size of the risk pool that the group of households can draw upon for assistance in management of the impacts of risk. The capacity to insure also depends on the size of the risk pool. The distinction between idiosyncratic and covariate risk is therefore largely contextual.

2.4 Vulnerability

Community or individual vulnerability?

The ISDR definition of vulnerability focuses on the 'community'. *'The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards'.*

Discussing the vulnerability of *communities,* however, obscures the fact that the impact of the hazard is not evenly distributed. Even though the floods affected the whole population in certain areas, the impact differs depending on variation in vulnerability, also within communities.

I look at the vulnerability of both the community and of the households. The definition of vulnerability by Wisner et al. (2004) includes both the individual and

communities, where vulnerability is '*the characteristics of a person or group and their situation that negatively influence their capacity to anticipate, cope with, resist and recover from the impacts of a hazard'*. It involves a combination of factors that determine the degree to which someone's life, livelihood, property or other assets are put at risk by a hazard. They stress that *people* are 'vulnerable', while assets are not. Assets are 'at risk'.
Wisner's definition includes both the components of 'unsafe conditions' and reduced capacity of people to cope and recover from the consequences of the hazard.

Is it people or situations that are vulnerable?

The study follows the definition of vulnerability by Wisner et al. above. I emphasise that it is the situation that makes people vulnerable, rather than the characteristics of the household. As the situation of a household changes, its vulnerability may also change. I argue that the concept of vulnerability should not be used to 'label' people, but to specify what and how their livelihood situation is making them vulnerable.

Hewitt (1997) distinguishes between exposure and susceptibility. The former is the degree to which people and resources are physically exposed, and the latter include the social, economic, political, psychological and environmental variables that intervene by producing different impacts among people with similar levels of exposure. In Hai Lang and A Luoi almost the entire population were exposed to the 1999 floods, but their susceptibility to damage differed within the communities.

The concept of susceptibility is close to the concept of vulnerability, but focuses on the impact, while the latter includes the capacity to cope and recover. Given a certain level of impact, households or communities still show differences in capacity to cope and recover. My material suggests that there is limited correlation between the impact of a hazard and a capacity to cope and recover. Susceptibility and vulnerability is not the same thing.

The importance of distinguishing between exposure and vulnerability or susceptibility is given in Adger's (2001) study of the coastal district of Xuan Thuy, where the poor salt-makers are more vulnerable than the better-off aquaculture people, even though aquaculture is physically more exposed to hazards.

Capacity to cope and recover is dependent on structural conditions, and is not merely a property of the individual household. The focus of this study is on the conditions that influence capacity to cope and recover, and how these 'conditions' become differentiating factors in creating vulnerability for different people.

Structural vulnerability is analysed by Wisner et al. with the help of the 'PAR model', which stands for Pressure and Release. The model can be represented as follows:
Root causes → Dynamic pressures → Unsafe conditions → **Disaster** ← Hazards

'Unsafe conditions' include things like lack of information, risk-prone location of production etc. The PAR model is a way to structure and identify the causes behind

the unsafe conditions that make people vulnerable. They trace the unsafe conditions back to what they call dynamic pressures and root causes. These must be addressed in order for the pressures causing disaster to be 'released', i.e. removed. They do however acknowledge the difficulties in establishing evidence of causal connections in practice. As many factors are involved in giving rise to unsafe conditions, it may be difficult to single out the ones to address. The PAR model focuses on the systemic pressures contributing to vulnerability. It does not provide insights into what constitutes vulnerability at household level. This is instead done in the 'access model'. That model focuses on the level of access to resources as a determinant of vulnerability, and which may turn a hazard into a disaster for some people. The access model is further commented on below.

Vulnerable livelihoods

The Sustainable Livelihoods framework portrays vulnerability as an external factor, which threatens the livelihood conditions of the household. In the terminology used in this study, it is the hazard which is an external factor, while vulnerability is a characteristic of the household in their context. I agree with Pain and Lautze (2002) who argue that the conventional livelihoods framework is inadequate for analysing vulnerability because it treats it as an external factor, rather than linking people's livelihoods (e.g. assets levels) to their vulnerability. Wisner et al. (2004) conclude that most people who are vulnerable are so because they have livelihoods which lack resilience in the face of shocks. A vulnerable livelihood becomes the opposite of a sustainable livelihood. It lacks resilience to shocks because it may not provide enough to live on, may lead people into hazardous places, or be embedded in exploitative social relations (ibid). Like this study also concludes, Wisner et al. observe that health and resilience are closely related.

A livelihood comprises the capabilities, assets and activities required for a means of living (Chambers and Conway 1992). A livelihood is specific to a certain household, but is closely related to the context. I see the concept of 'vulnerable livelihoods' as an important supplement to the understanding of people's vulnerability because of its focus on the dynamic (not static) aspects of being vulnerable.

The time dimension is important in vulnerability analysis. The consequences of a hazard may produce an impact on the household livelihood conditions immediately, gradually or after some time. New vulnerabilities may also be born out of the inadequate coping and recovery after a disaster. Davies and Hossain (1997) stress that vulnerability to hazards needs to be understood as a downward spiral of increasing vulnerability rather than one-off events. Repeated stress undermines the resources, which would normally be reserved for any unusual stress/disaster.

Adger (2001) discusses vulnerability as divided into individual and collective vulnerability. Individual vulnerability is determined by access to resources, the diversity of income sources and social status within the community. The collective vulnerability of a social grouping is determined by institutional and market structures, such as formal and informal social security and insurance, infrastructure and income. Adger recognises that individual and collective vulnerability overlap

and can be difficult to separate analytically. Institutional- and market structures, for example, also result in differences in vulnerability *within* the community/collective.

In chapter 7 the relation between individual and collective vulnerability is discussed from the perspective of access to resources, which is seen as crucial in understanding vulnerability. Bebbington (1999) discusses collective and individual aspects of access. The former is when the organisation of access to resources is institutionalised for the community or a larger group of households, while the latter depends on factors specific to the individual household. The relation between individual and institutionalised access and capacity to recover will be explored.

To understand vulnerability it is important to understand the socio-economic and political processes that influence the distribution of resources under normal conditions, not only in the context of the hazard. Vulnerability is in fact created under normal conditions, but becomes explicit during disaster (Hewitt). Chapters four to seven deal with the disaster situation 1999 and the responses to it, while chapter eight discusses disaster mitigation, adaptation and efforts to reduce vulnerability more broadly.

It was difficult to find an adequate translation of 'vulnerability' into Vietnamese. The expression 'dễ bị tổn thương' approximately means 'easily hurt', which is close to 'susceptibility'. This concept was however not commonly used in the Vietnamese discussion. The expression 'khả năng đối phó và khôi phục lại', however, which means capacity to cope and recover was common.

2.5 Resilience and adaptation

The concept of resilience i.e. capacity to cope with and recover from stress and shock can be seen as the opposite of vulnerability. The concept also includes capacity to adapt in order to reduce vulnerability and susceptibility to future hazards. Authors use it in different ways. Chambers and Conway (1992) defines it as '*the access to assets or social support systems that carry you through periods of adversity'*. Smith (1992, in Wisner 2004) defines resilience as *'the rate of recovery from a stressful experience, reflecting the social capacity to absorb and recover from the occurrence of a hazardous event'*. White et al. (2004) elaborate on this definition by reflecting on the distinction between the concept of capacities, as attributes of individuals and households, while resilience also includes a favourable institutional environment. Resilience in that perspective is the coming together of capacities with the social, institutional and informational resources that enable their effective use.

The ISDR definition emphasises resilience as a property of a system, which is able to adapt and reorganise in order to better cope with future hazards. '*Resilience is determined by the degree to which the social system is capable of organizing itself to increase its capacity for learning from past disasters for better future protection and to improve risk reduction measures'*.

This interpretation is very similar to the way the concept is used in the systems-ecology discourse. There is a school of thought about resilience as a property of systems, both ecological and social. The 'school' has a network called 'the resilience alliance'. Brian Walker et al. and Carl Folke et al. (2002) define resilience as: '*Maintaining the functionality of a system, when it is disturbed'. 'Maintaining the elements needed to renew or reorganise the system, to maintain its main functions'.* In this discourse vulnerability is the flip side of resilience. When a system loses resilience it becomes vulnerable to change that previously could be absorbed. (ibid)

When Folke et al. analyse socio-ecological resilience their main focus is on the ecological system. They recognise the interaction with the social system however, which influences the resilience of the ecosystem and its capacity to provide ecosystem services. The interest in 'outcomes' concentrates on the ecosystem rather than the social system. My approach is the other way round. The study focuses on the social context, while recognising that it is dependent on the ecological system.

The resilience of households and communities is discussed in terms of their capacity to 'bounce back', which includes coping, recovery and reorganisation in order to maintain crucial functions of the livelihood and society.

Adger et al. (2000b) uses the concept social-ecological resilience in order to analyse factors determining the resilience of social systems in response to ecologic change. They express ambivalence however, regarding the use of the concept of resilience transferred from the ecological sciences to apply it to social systems, as there are essential differences between socialised institutions and ecosystem behaviour.

The concept of adaptation and learning in social systems, as used by Folke et al. (2002) is valuable to the present discussion. They discuss factors that support the development of management strategies that support resilience. Such factors include characteristics of both the social and ecological system e.g. diversity of species and economic options that maintain and encourage adaptation and learning. Folke et al. see four critical factors required for dealing with natural resource dynamics; learning to live with and take advantage of change; nurturing diversity; combining different types of knowledge and creating opportunity for self-organisation. Diversity is seen not just as an insurance against uncertainty. The mix of experiences helps people cope with change and facilitates innovation following disturbances and crises. Folke et al. refer to others like Sheffer et al. 2000 who have expressed it as fostering 'institutions and networks that create flexibility in problem solving and balance of power among interest groups'.

Adaptation does not always increase resilience however. Folke et al. mention examples where people have invented ways to adapt to the reduced options in the development of the agriculture system, leading to the masking of land degradation and vulnerability.

Adger sees a strong linkage between adaptive capacity and resilience, both at a household level and in society. Low resilience includes the meaning that adaptive

options are limited. Social vulnerability and resilience are seen as determined by a host of complex social processes and economic factors, from access to resources through informal and formal social security, insurance and social capital. In essence these determinants are related to the concept of entitlements and access of individuals and groups to resources for adaptation (ibid).

The institutions that influence access to resources for adaptation are crucial. Adaptation and flexibility requires control over resources. Chapter eight discusses adaptation and the institutions involved in regulating access to natural resources.

Adger and Kelly's (1999) study of vulnerability to climate variability and hazards aims at the identification of adaptive strategies to enhance resilience, recognising that society is continually responding to environmental stress and evolving responses. According to Adger, the responses to long-term environmental change are facilitated and constrained by the same structure of entitlements as adaptation to other, more immediate social and environmental issues. Adger and Kelly focus on short-term climate hazards and extremes (floods and drought etc) as it is these events that people first and foremost experience and react to. Extreme events are particularly important as triggers for adaptation. This agrees with my experience in Hai Lang and A Luoi, where I find that adaptation to disaster, climatic stress and institutional change are integrated and difficult to distinguish between.

Davies (1996) distinguishes between positive and negative adaptation. Positive adaptation she argues is by choice, can be reversed and is concerned with risk reduction. Negative adaptation is of necessity, tends to be irreversible and frequently fails to contribute to a lasting reduction in vulnerability. Negative adaptation is a result of people no longer being able to cope with shocks, which forces them to fundamentally alter the ways in which they subsist. In chapter eight on adaptation, it is discussed to what extent people are 'forced' to adapt by the circumstances and to what extent they take initiatives 'in advance' in order to avoid future stress.

2.6 Capacity to cope and recover

Wisner et al. (2004) draw our attention to the fact that reports of 'recovery' often concern a community or region, yet this may not mean that all households have recovered. The households selected for interviews in Hai Lang and A Luoi had all suffered large losses, either they were better-off, middle-income or poor households. Their possibilities to cope and recover, however, were different.

The ISDR definition of coping capacity is: '*The means by which people or organizations use available resources and abilities to face adverse consequences that could lead to a disaster*." The definition has a close relationship to resilience. "*The strengthening of coping capacities usually builds resilience to withstand the effects of natural and human-induced hazards'.*

I use the term coping for the emergency actions conducted by people and organisations in order to solve the immediate and basic needs after the floods. Capacity to recover concerns the medium-term perspective and involves regaining a similar level of livelihood conditions compared to before the disaster. The livelihood activities are not necessarily the same as before. Actions aimed at coping may in some cases undermine the possibilities of recovery, for instance the sale of productive assets or becoming indebted.

Access to assets

Start and Johnson (2004) stress the importance of assets for coping, especially those that are easily convertible into cash to solve urgent needs. Moser (1998) also sees assets as the primary factor in determining vulnerability and resilience, but she sees assets in the broader perspective of the Sustainable Livelihoods Framework, were assets can be physical, natural, financial, social, institutional or human resources. My material suggests that in the study area the important types of assets are not necessarily those that can be sold, but rather ones that can provide a small daily income during the critical period until regular sources of income and food security are re-established. Such assets may be the access to land and forest for emergency production and collection of minor forest products, as well as access to labour opportunities. The concept of *access* therefore becomes central. As people lose assets in a hazard their recovery is dependent on the renewed *access* to the resources that were lost or other resources which can fill similar livelihood functions. Bebbington (1999) argues that the concept of access is related to having the social and institutional relations and human capital to rebuild assets.

White et al. (2004) stress that both adequate household assets and supportive social and governance relations are necessary for capacity to cope and recover. The study focuses on the institutional structures for access to resources that result in different types of access for different groups of people.

Wisner et al. also see the concept of access as crucial in understanding vulnerability and capacity to recover. They use the 'access model', which helps to analyse the access that people have to capabilities, assets and livelihood opportunities that may enable them to reduce their vulnerability. The 'access model' focuses on the role and agency of people, the impacts of hazard on them and how they cope, develop recovery strategies and interact with other actors. The focus is on the individual, but the model acknowledges that individual decisions are made in a socio-economic environment, which is discussed in the two 'boxes' of 'social relations' and 'structures of domination'. There is also a 'box' called 'social protection', which represents the hazard precautions and preparedness that is provided by the state and local collective action.

The 'access model' provides a useful overview of the factors that are important for coping and recovery. Similar to the livelihoods analysis, the focus is on the agency of the individuals and households. This can be difficult to analyse in the Vietnamese context, where I found the strategies of households, local organisations and local government to be closely interwoven. Many of the initiatives in disaster response lay

at the level of local government. The conditions of the households however differ in terms of livelihood base, wealth, health, social position etc., which result in different capacities to recover.

Coping is influenced by major changes in society

Coping capacity is influenced by the social or economic changes in society. Traditional coping mechanisms may no longer successfully mediate risk. Some 'traditional coping strategies' disappear and new ones emerge. Adger (2001) looks at the institutional structure in Vietnam under change. Areas where previously the family and kinship networks were most important may today be replaced by formal institutions and organisations for coping and recovery. The trends are also the other way around. Whereas the market economy increasingly replaces the village cooperatives and local government as responsible for the well-being of the citizens, the dependency on family and kin networks have increased, according to Adger. This is also the experience in this study.

The transition to market economy implies that government services, which were previously free, are now paid by the user. Health care and education fees are significant costs to the household. Poor households (with 'poverty cards') have a reduction in fees, but costs can still be high. The interview results suggest that health costs can be a significant differentiating factor for household capacity to cope with shocks.

Including risk reduction in the recovery process?

Recent thinking is that the concept of recovery should also include mitigation in anticipation of future hazards. White et al. describe recovery as a spiral of learning from the disaster, leading to adaptation and modification of development, rather than merely a reconstruction of pre-existing conditions, which often were part of the conditions which lead to disaster in the first place. The relation between relief, rehabilitation, recovery and development is further discussed in the following section.

2.7 Disaster response and development

The Vietnamese expression 'Living with the floods' has long been used to signify the ambition to build a society and livelihoods, which are (reasonably) resilient in the context of frequently occurring floods and seasonal crises. The meaning differs in the different parts of the country, as the character of the floods and risk varies.

After the 1999 floods in central Vietnam and the 2000 floods in the Mekong delta, the policy discussions on how to reduce disaster risk increased. The floods cause high costs to society in lives lost and property destroyed, both individual and collective. Apart from the impact on the affected communities themselves, Benson (1997) draws attention to the fact that disasters also have macro-economic development impacts through damage to infrastructure, production and human

capital, and may have long-term effects on productivity and growth through loss of tax revenues, diversion of resources into disaster response and price inflation. The mobilisation of humanitarian assistance and reconstruction take large resources away from development. Recent studies suggest that both governments and donors tend to finance disaster relief and rehabilitation by reallocating resources from development programmes (Benson 1997 and White et al. 2004). In Vietnam there have long been efforts for protection against floods through infrastructure. Such development is not uncomplicated. There are trade-offs to be made, as investments in protective infrastructure may have 'side effects', e.g. the transfer of the water to other areas, and high costs of repair if structures are frequently destroyed. On the other hand, infrastructure can be very cost-effective e.g. in Bangladesh where Oxfam estimated the value of cattle saved by a flood shelter during the 1998 floods at almost twenty times the shelter's construction costs. (White et al. 2004)

Christoplos et al. (2004) stress the need to analyse the extent to which different relief and development activities themselves impact on risk and vulnerability. A common critique against relief and rehabilitation interventions is that they imply the reconstruction of pre-existing systems, thereby risking the rebuilding of a livelihood context which continues to be vulnerable and exposed. Instead the crisis could be seen as an opportunity to introduce policy changes and institutional reforms to sustain recovery and establish rural livelihoods and institutions that are better equipped to deal with risk (ibid). In a later discussion paper however, Christoplos (2006a) cautions us that there are many constraints against actively implementing disaster risk reduction in the immediate recovery phase of a disaster. The urgency of reconstruction may be difficult to combine with the political decision making process about disaster risk reduction, which needs time.

Policies for risk reduction and development that may influence vulnerability are discussed in chapter eight. To what extent was the flood disaster in the case of Vietnam just a temporary break in a development process, which has since then caught up in a similar way? And to what extent have development strategies been altered as a consequence of the disaster? It is clear that the latter has influenced socio-economic and political processes and given rise to new ideas and priorities and has perhaps also shifted relations in control of resources.

'Relief' has been criticised for not addressing the underlying causes of vulnerability (Twigg 2001). This has given rise to debates on the need to link humanitarian relief, rehabilitation, social protection and development in a more coherent way. 'Developmental relief' is a concept articulated by the Red Cross, which received broad attention in the late 1980's. This expresses a broad-based and sustainable approach to post-disaster work with focus on participation, accountability, decentralised control, sustainable livelihoods and the needs and capacities of the survivors and local institutions. The focus is not only on the immediate humanitarian needs but also on restoring livelihood assets and rebuilding livelihoods. (World Disasters Report 1996 cited in Twigg 2001).

Christoplos et al. (2004) cites Macrae (1998) criticising the trend towards 'loading relief with development objectives' on the grounds that it is unrealistic and

ultimately compromises core humanitarian principles. Christoplos et al. conclude that the focus should rather be on working towards a greater integration and coherence in terms of overall objectives, so that relief and development can mutually reinforce each other. In his evaluation of the tsunami response, Christoplos (2006b) finds that most aid actors have demonstrated a limited understanding of what kinds of interventions may eventually prove sustainable with respect to livelihoods, community development and resource management. Buchanan-Smith and Maxwell (1994) argue that: '*Better development can reduce the need for emergency relief and better relief can contribute to development. Better rehabilitation can ease the transition between the two*'.

Lewis (1999) ties together the concepts of vulnerability, recovery and development by arguing that the condition of a person, structure or community before a disaster has significant bearing on the capacity to recover. Disaster mitigation and development thus come closer together conceptually.

The relief and development debate has led to a changing understanding of disasters as more than short-term crises, and has shifted the focus from saving lives to include the need to save livelihoods. The World Food Programme is now emphasising social sustainability, which means that social structures will have to be strengthened allowing people to rebuild their livelihoods with more independence and resilience to future crises (WFP 1998 cited in Christoplos et al. 2004). Christoplos et al. find that the concept of resilience may be useful in finding ways of supporting local efforts for rehabilitation. Long-lasting impacts can be achieved where intervention strategies enhance resilience through strengthening local livelihoods and enhancing assets.

Christoplos et al. (2006a) suggest that an increased attention to the possible synergies between social protection and livelihood promotion is a potential means towards achieving greater convergence of purpose across relief and development. Social protection is concerned with the ways in which individual or household resilience to adverse events can be strengthened. Livelihood promotion involves measures to encourage pro-poor growth and social equity.

The relation between social protection and livelihood promotion is discussed in section 8.7. In the disaster response after the 1999 floods there was a major government effort to ensure that production was not disrupted, at least concerning rice production. This puts focus on the relation between 'saving production' and 'saving livelihoods'.

2.8 Poverty and vulnerability

According to the World Bank, one third of the population in Vietnam were poor in 2002. If the households who are 'near-poor' (within 10 per cent above the poverty line) are included, the figure is 45 per cent (Conway and Turk 2002). In the discussion of vulnerability it is relevant to include the 'near-poor' as they risk falling

below the poverty line as a consequence of shocks to the household economy. Conway and Turk stress the importance of social protection to avoid that people again fall below the poverty line.

The Vietnamese government (MOLISA[7]) specifies vulnerable groups as invalids incapable of work, elderly without relatives, orphans etc. These are groups with clearly reduced labour capacity. According to Conway and Turk (2002) there is a lack of policies designed to address the more general vulnerability of much of the population to experience a fall in their income and consumption. The 'Poverty Task Force[8] led by the World Bank, puts the focus on a broader definition of vulnerability and on the importance of reducing risk for the majority of the population.

When using the term *'the poor'* in this study it refers to the households who are poor according to the local definition in the villages. Roughly this follows the formal government (MOLISA) criteria, which is an income below 155 000 VND/cap/month (10 USD) in Hai Lang district, and 100 000 VND (65 USD) in A Luoi district. This poverty line is lower than the one used by the World Bank, which is based on an expenditure of 1.79 million VND/cap/year. This is because the income based poverty line includes farm production consumed on-farm.

Hulme et al. (2001) discuss in terms of the 'transient poor' as distinct from the 'chronically poor'. The former describes people who fluctuate above and beneath the poverty line and occasionally dip into poverty due to an extreme decline in income. This is a highly relevant distinction in understanding disasters and resilience.

The relation between poverty and vulnerability is an issue of discussion by many authors. Vulnerability may lead to poverty and poverty may be a reason for vulnerability. Poverty and vulnerability tend to reinforce each other. In some respects it is a matter of the definition of vulnerability. If the focus is on exposure to hazard, almost the entire population in the flood-affected area are vulnerable. A high percentage of the population faced major losses and experienced hardship during the first year. In terms of exposure and losses the better-off are sometimes more vulnerable as they have more to lose. If the definition of vulnerability is interpreted as having difficulty in coping and recovering, the poor are more vulnerable, but not all in the same way.

Ruggeri Laderchi, Saith and Stewart (2003) draw attention to factors that influence how poverty and vulnerability is perceived. The time- period over which vulnerability is assessed be it a season, a year or longer, has a major impact on conclusions. Attention is often centred on level of income, which means a focus on private resources and omits social income, goods and services provided publicly like education and health.

[7] Ministry of Labour, Invalids and Social Affairs

[8] The report by Conway and Turk is a compilation of the results of work by the Poverty Task Force, led by the World Bank Vietnam and including the Vietnamese government, several donors and NGOs.

Vulnerability as part of poverty

Okidi and Mugambe (2002) as well as Hulme et al. find it useful to see vulnerability to shocks as an integral part of poverty itself. They suggest that vulnerability is one of the things that should be included when defining poverty levels. Dercon (2005) emphasises that the risk of becoming poor and the uncertainty about the ability to secure decent living conditions in the future are essential parts of the experience of poverty and well-being. He argues that one cannot discuss 'capabilities' and 'achieved outcomes' in people's livelihoods without recognising the risks involved while translating capabilities into outcomes.

The concept of resilience becomes useful in order to understand the component of 'vulnerability' in 'poverty'. All poor households are not vulnerable. It depends on their resilience, i.e. the factors influencing their possibilities to cope with and recover from shocks.
The factors we need to look at include relative risk of production losses; spread of risk; access to income for use in coping after loss of the main income; health status; sanitary conditions i.e. access to clean water and clean environment.

2.9 Institutions and state-society relations

A major focus of this study is to understand institutional conditions for resilience. Institutional conditions, which influence the household possibilities of shaping its livelihood is central in the Sustainable Livelihoods framework. Hobley (2001) discusses the 'Policies, Institutions and Processes' box in the SL framework. She refers to Goldman (2000) who includes organisations, services, incentives, rules of the game, power relations and processes such as decentralisation. Mehta et al. (1999) emphasise that institutions are both enabling and constraining. They discuss institutions as processual and dynamic and the product of social and political practices. Institutions are subject to continuous social interaction, negotiation and contestation comprising heterogeneous actors having diverse goals. Morrison et al. (2000) argue the importance of understanding institutional arrangements for access to key assets as critical for understanding people's vulnerability.

Following these perspectives I emphasise the understanding of institutions in society, focusing on relations in disaster response and development. This includes relations between state and society, the role of local organisations and the informal and formal structures in society that influence people's access to resources.

The formal institutions governing the relations between the state, local organisations and villagers play a large role in disaster response as well as in 'every day' development processes. Informal institutions like the family networks, relations between rich and poor farmers, money-lending and the use of common property resources are however also important. Christoplos et al. (2006a) remind us to maintain an awareness of the importance of the informal institutions during efforts to

strengthen formal institutions. It must also be recognised that some informal institutions may serve to reinforce rather than alleviate structural vulnerability.

A major part of the international discourse concerning humanitarian assistance (relief) and rehabilitation focuses on the role of international organisations and NGOs. Critique against the role of these organisations suggests that support frequently tends to be uncoordinated, partly irrelevant to local needs and may undermine local informal systems of coping (e.g. Christoplos 2006b). In Vietnam the main actors in humanitarian response and rehabilitation, apart from the households themselves are the state and local organisations. The issues discussed here are therefore partly different compared to the international discourse. The organisations involved in the relief and rehabilitation work after the 1999 floods in Vietnam were the same as for the 'normal' work of service provision and coordinated under local government. The issues of disaster response therefore relate also to how 'normal' local development structures function. Christoplos (1996) emphasises that the role of different actors in the context of disaster must be understood as part of the ongoing process of construction of the relation between organisations and villagers in development.

Vietnamese society is undergoing major changes. Since the start of the market-oriented reforms in 1986 the division of responsibility between state, village and houeholds is changing, which also impacts on roles in disaster response. I discuss these changing roles and responsibilities, especially those of the cooperatives and the village level organisations.

Structural changes in Vietnamese society lead to a decreasing role of the state and the collective as responsible for the welfare of the individual, to a society in which family and kinship networks have a larger role in providing social safety nets. The development direction however involves both increasing and decreasing cooperation at the same time. More intensive agriculture production has increased the interdependencies between people, especially in matters of water control and cropping cycles. As the thesis suggests, the responsibility of society for the welfare of all citizens is reinforced in disaster response. Quarantelli (1978) has studied community responses to disaster, such as floods, and found that emergent organisation is much more common than social chaos, and that altruism is more common than selfishness.

The thesis draws on work by Peter Evans (1996) and Elinor Ostrom (1996) and their argument relating to state-society synergy. It also draws on the work of Judith Tendler (1997) about 'good governance'. Lipsky (1980) provides an approach to understanding the role and behaviour of the individual members of staff in government services and their relations to clients. These relations, as Lipsky argues, heavily influence the implementation and outcome of government policy.

The above authors have in common the emphasis put on the relations between government staff and their clients, in the case of this study, the villagers. They all stress the importance of recognition of the actions of the staff, both from below and above, and trustful relations between staff and villagers are regarded as vital in

achieving positive results in development. Both Ostrom (1996) and Morrison et al. (2000) make the point that transaction costs, risks and scope for opportunism are reduced by building up personal relations, knowledge and long-term co-operation between staff and clients.

Evans analysis of state-society synergy emphasises how government and communities can actively enhance each others' developmental efforts. Synergy is most often fostered in societies characterized by egalitarian social structures and robust, coherent state bureaucracies, characteristics which apply to the study area. Evans points to the norms and loyalties that develop in the process of day-to-day public-private (household) interactions. This provides a frame for the understanding of the interactions between government staff, local organisations and villagers in this study.

Evans refers to Lam's (1996) work on Irrigation Associations in Taiwan, in which he concludes that "*the dense network of social relationships which exist among IA staff and IA members is the key to the system's effectiveness at the local level*". The experience of these authors agrees with how I understand relations between staff and villagers in Hai Lang and A Luoi. The high level of integration of government staff in the communities provide conditions for collective action, which became useful especially in the situation of disaster response.

The relations of trust in staff-citizen relations, however, are not unproblematic. Lipsky suggests that such relations may lead to favourisation of some clients over others. The district level staff have to develop ways of coping with the fact that needs are inevitably greater than the time and capacity which has been allocated. Personal relations are important in determining which people actually access government services in practice. The staff get greater job satisfaction from working with people they know and trust, which means that they focus on a few relations and hope that they in turn spread the work. The functioning of the community in terms of spreading information and access to resources is crucial. I discuss the role of the village leaders, the cooperatives and mass organisations from this perspective.

Lipsky however also sees the problem that government staff tend to deal with clients on a mass basis. Ideally staff should respond to individual needs but in practice this is not possible given the time constraints. They therefore tend to categorise people, which has large influence on these people's lives. I discuss the differences in access to resources under emergency conditions and the following phases of rehabilitation and recovery. The material shows that access to resources, especially for the poor, is to a large extent dependent on provision through local government and local organisations, and so is influenced by staff-client relations. This agrees with Bebbington (1999) who accentuates the importance of different types of relationships for access in the institutional context of state, market and civil society. Bebbington's experience from the Andes suggests that the medium-sized farms access resources through the market and kin networks, while small producers depend more on formal and externally supported access to knowledge, credit, irrigation, markets etc.

Ostrom (1993) points out that the experience of cooperatives can be a possible institutional arrangement to avoid adverse selection processes, i.e. that service organisations focus on the better-off. The cooperatives can be an institution, which can even out the costs of involving different groups, and thereby being inclusive of the poor. This agrees with the situation in Hai Lang, where I argue that the cooperatives increase access to resources for the poor. Ostrom et al. stress the positive aspects of an accountability structure in which staff are paid by and responsible to the farmers. Employer and employee thereby have similar stakes in the proper performance of the tasks. Ostrom et al. also argue that adaptability and capacity for coping with changes and crises are greater with local control of resources. I discuss whether the cooperatives and local organisations in Hai Lang and A Luoi contribute to resilience in this respect.

3. Empirical background

This chapter gives a background to the context of floods in Vietnam and the policy environment concerning disaster risk reduction and poverty alleviation. The study villages and districts are introduced along with the livelihood conditions in the area.

3.1 Living with Floods

Vietnam has 'always' been flood prone and has a long history of coping with floods. The 1999 flood disaster attracted a lot of attention in Vietnam. It is called the 'century floods', being considered the biggest during the 20th century.

Every year there are several heavy storms affecting different parts of Vietnam. Only a small percentage of the floods and storms turn into disasters, but many of them still cause damage to infrastructure and hardship for the population affected.

Some rainstorms are mainly a threat to production. All through history the state and communities have struggled to build and reinforce dike systems to protect the fields against flooding. Other rainstorms are a threat to people's homes, villages and cities. Some major cities have dike protection. Hanoi is dependent on a substantial dike system protecting it against the Red River, which runs through the city. For most residential areas, the cost of dike protection would be too high. Towns like Tuyen Quang in the northern mountains have to endure the town being flooded every three or four years, and people having to move up to the second floor of their own, or their neighbour’s house. Hai Lang district town lies on higher land and the houses were only slightly flooded during the 1999 floods when all the land around it was under water.

It is not feasible to build dikes against major floods like the one in 1999. Dike protection in Hai Lang is mainly a concern regarding the reduction of the seasonal flood risk during the cropping season, which people struggle with every year. The large autumn floods overflow the dikes, which is normally not a problem, but combined with storms creating strong waves, the dikes can be damaged, causing costly repairs. During the autumn floods the dikes may constrain the drainage to the sea, which causes the water to rise higher than it otherwise would have done. Dike construction in this area is therefore a balance between mitigating the frequent seasonal risk and the rarer disaster risk.

The history of flood mitigation in Vietnam

A major part of Vietnam is exposed to floods caused by heavy rains and storms. Because of population increase more people have settled in areas which previously may have been considered too prone to flooding to be secure for habitation and production. Development of dikes and drainage facilities has gradually expanded the

areas under settlement and cultivation, first in the Red River delta, in the central coastal zone and then in the Mekong delta.

The state and the community have always had responsibility for protecting society and individuals against floods. Luttrell (2001) refers to authors like Le Thanh Khoi (1955) and Phan Khanh (1984) in her overview of the Vietnamese relation to floods in history. According to these authors the Emperor was ultimately responsible for protecting the people and agriculture from natural hazards and disasters otherwise the people had the full right to rebel. Mid-eighteenth century village regulations on communal works for flood protection were very harsh. According to Khoi and Khanh destruction of dikes was punishable by death and commune authorities held responsible for dike failure suffered corporal punishment.

Flood and storm protection is still an important part of state responsibility. The battle against the cyclones and storms is thoroughly ingrained in the Vietnamese psyche. Institutions for this purpose have widespread support, commitment and legitimacy (Cecilia Luttrell 2001). Today the pressure is more social and political, rather than the harsh punishments for failure in history. A commune leadership which fails in the management of the dikes and in flood protection cannot count on being re-elected, as the pressure in this case would come both from both high and low in the political hierarchy, according to staff in Hai Lang district.

Recent changes along with market reforms

Adger (2001) draws attention to how in some areas of the country, the expansion of the market economy has meant less power of commune leaders in organising community labour efforts, which has given rise to situations where the communal system of dike-repair and maintenance has become problematic. Rambo (1995) has observed cases where individuals use the new possibilities to opt out of the centuries-old obligation to provide labour for communal works, and to pay substitute fee instead. This is often insufficient and undermines the maintenance system. Rambo reports cases where resources for maintenance have been diverted to other use. It would require significant financial resources to upgrade the dikes to make them less dependent on an abundant labour for maintenance. The reform process is in this respect threatening the capacity for disaster response because of erosion of collective action in some areas. The extent to which this is the case varies greatly between different areas. In my study area the practice of communal labour is still intact. The commune People's Committee and cooperatives maintain a strong role in the management and maintenance of the dike system. The changing relations between state and society and their impact for disaster risk reduction are discussed in chapter seven and eight.

Has the number of disastrous floods increased?

There have been a large number of disastrous floods during the history of the area. Duong Phuoc Thu (2000) has compiled a documentation of major floods in Thua Thien Hue province since 1361. All these floods caused damage with collapsed houses and erosion of land. In several cases the force of the water was such that it

opened new river mouths to the sea. Most of the floods were in the autumn and connected with storms. The years marked in bold involved major loss of life.

The floods occurred in the years 1361, 1403, 1467, 1497, 1504, 1627, 1629, 1665, 1670, **1671**, **1676,** 1679, **1680**, 1685, **1691,** 1694, **1698**, 1706, 1710, **1712**, 1713, 1726, 1728, 1730, **1735, 1738,** 1740, 1774, 1796, 1810, 1811, 1820, 1825, 1826, **1828,** 1831, 1832, 1833, 1836, 1839, 1841, **1842, 1844,** 1846, **1847**, **1848,** 1856, 1864, 1867, **1876,** 1878, 1880, 1882, 1887, **1894,** 1897, **1904, 1953,** 1964, 1975, **1983, 1985,** 1989, **1995, 1998, 1999.**

The flood in 1953 killed more than 500 people in Thua Thien Hue. In 1983 it rained 1217 mm in two days, which was the highest rainfall so far during the 20th century in Vietnam. 252 people were killed. In 1985, 840 people died. In 1995, 11 people died and in 1998, 25 people lost their lives. In 1999, the death toll in Thua Thien Hue province was 375. During the four days of storm it rained 2300 mm, which broke the previous record from 1983.

According to Nguyen Ty Nien (2000) of the Central Committee for Flood and Storm Control, the number of deaths caused by natural disaster over the last 20 years in Vietnam has been 9896, of which 5894 have been in central Vietnam.

Floods and the environmental context

There is a widespread perception in Vietnam that storms have become more frequent and more serious with the ENSO phenomenon. ENSO stands for El Nino Southern Oscillation, which causes cycles of exceptionally wet and exceptionally dry weather, associated with periods of warming of surface water in the Pacific. Research suggests that floods and storms related to ENSO are increasing in frequency (Mc Guire et al. quoted in Wisner et al. 2004). There has been increased scientific understanding of ENSO as part of the world's climate system. The relation between ENSO and climate change however, has not yet been revealed in the modelling efforts (Glantz 2002 referred to in Wisner et al.).

I will not go further into the discussion on the contribution of climate change to climate related hazards, except to say that the frequency of storms is taken seriously in the Vietnamese debate, irrespective of the discourse on climate change.

There is a popular perception that the increasing frequency of flood hazards is related to deforestation. According to a recent report by the FAO and CIFOR[9] (2005) there is no scientific evidence that deforestation is causing increased frequency of major floods. The report states that the frequency of major flooding events in Southeast Asia has remained the same over the last 120 years, including times when forests were still abundant. The report argues that forests can only play a role in reducing the impact of limited amounts of rainfall. In major floods after heavy rains the soil has become saturated and the capacity of the vegetation to hold

[9] The UN Food and Agriculture Organisation and The Centre for International Forestry Research based in Indonesia.

back the water is much reduced. Forest cover plays a role in preventing smaller landslides around a meter in depth, but also in this context the report cautions us from expecting trees to be able to hold the soil in major slides.

Since around 1990, watershed protection and reforestation has been an active policy of the Vietnamese government, with the expected outcome of reducing the force of water flows and erosion. In the 1999 floods the force of the water still managed to uproot many hectares of trees and caused many landslides despite comprehensive forest cover.

During the past decade flood hazards have also increased in Europe and North America. The failure of the rich countries to protect themselves against flood hazards, and the high damage costs involved, have partly shifted the policy debate on flood protection away from 'engineered' flood control measures, to modes of adaptation. An increased interest in a 'living with the floods' approach has emerged, with more attention paid to the balance between the costs and benefits of 'natural' floods compared to structural flood control. (Wisner et al. 2004)

In the Vietnamese context of 'living with the floods', infrastructure protection is still an important component. In the Mekong delta the concept includes moving people to 'residential clusters' on higher land, which is a strongly debated way of avoiding flood risk, as it causes social and economic difficulties for people who have to adapt to new conditions (Fforde 2003).

Miller (2003) discusses, in her thesis on the political ecology of risk in the Mekong delta, the problem of increase in other types of risk when aiming to reduce flood risk through increased water control structures. She discusses how people have moved from a mainly adaptive approach to the floods to increased control through dikes and pump stations. There is a tension between flood protection by dike construction, and farmer need for the floods for soil improvement and fishing (ibid). In Hai Lang there is no such tension as the autumn floods are higher here and overflow the dikes. The important sedimentation of nutrients that comes with the floods is therefore maintained. Adaptation to the floods in this area would mean to go back to a cropping pattern of one harvest per year, which is not perceived as an option by people in the area.

Policies and organisation for flood mitigation

At the national level there is a ‘Committee for Floods and Storm Mitigation’ under the Ministry of Agriculture and Rural Development. There are equivalent committees under the People’s Committees at all administrative levels. They are responsible for the planning and co-ordination of flood protection and disaster mitigation efforts. Every year there are several heavy storms affecting different parts of Vietnam. Monitoring and evaluation reports are prepared by all administrative levels after each storm season.

The Vietnam Water Law 1998 is based on Integrated River Basin Management (IRBM) as a guiding concept, which is also a commonly used concept

internationally Miller (2003). She discusses the tension between two principles within IRBM; the principle of planning and management of water on a basin scale, and the principle of management at the scale closest to the direct users of water (and watershed) resources and services. In her study of the Mekong delta she observes that there has been a scalar redistribution of decision- making authority on key aspects of water use, access and control from the household level to greater scales. She concludes that the process of institution creation in the water resources sector in the Mekong delta has directly challenged household decision-making authority.

3.2 Policies for poverty alleviation and vulnerability reduction

The poverty reduction plan in Vietnam is called the Comprehensive Poverty Reduction and Growth Strategy (CPRGS 2002). The relation between poverty and disaster risk is recognised. The document states an ambition to reduce by half the number of poor people falling back into poverty due to disasters and other risks by 2010. The CPRGS suggests an integrated approach that includes employment generation for the vulnerable, support for children of vulnerable families to attend school and the development of an Emergency Relief Fund. The definition of vulnerable groups is however not explicit. The National Strategy and Action Plan for Disaster Mitigation and Management (Govt of Vietnam 2001) explicitly calls for a larger integration between efforts for disaster risk reduction and poverty reduction.

In the CPRGS, the poverty line is defined as an expenditure of 1.16 million VND per annum per person in 1993 and 1.79 million VND (128 USD) in 1998. Based on these poverty lines the poverty in Vietnam was reduced from 58 percent in 1993 to 37 percent in 1998, and further to 29 percent in 2002. In the North Central Coastal region, where Hai Lang and A Luoi districts are situated, the poverty rates are higher and have only decreased from 48 percent in 1998 to 44 percent in 2002, according to the Vietnam Development Report on Poverty (2003). A major reason for this is that this area is especially disaster prone as well as prone to frequent seasonal stress in the form of floods, drought, insect attacks etc. during the cropping season, which reduces the harvest and causes livelihood stress.

The frequent occurrence of seasonal stress causes the CPRGS to put high priority on the development of irrigation and drainage structures in the central region. The CPRGS links policies for improved agriculture extension and the introduction of a wider range of financial services to the objectives of reducing vulnerability.

The poverty reduction policies of the Vietnamese government are to a large extent concentrated in programs like the HEPR (Hunger Eradication Program) and Program '135'[10] (Govt of VN 1998). The latter is a geographically based poverty program focusing on the poorest communes, which to a great extent are in the mountain areas. The purpose is to 'concentrate and focus policies and resources to areas where service capacity is low' and to 'reduce the points of contact for local officials and

[10] named after the Decision no.135/QD-TTg (31/7/1998) of the Prime Minister.

citizens in order to improve the outreach and access to services and other forms of assistance'. Hong Ha commune (one of the study communes) receives major support through this program.

The HEPR targets poor people wherever they are. Poor people receive 'poverty cards', which for example entitles them to reductions in hospital costs and school fees. The distribution of poverty cards is however insufficient according to the Poverty report (World Bank 2003). Not all poor households receive poverty cards, as the allocation is based on pre-set quotas for the district. The process of deciding who will get poverty cards is not quite transparent. According to the villagers and village leaders in Xuan Loc, there were 15 poor households, whereas only seven of them received cards. It was not clear to them why only these had been selected by the responsible district staff.

Social security for people outside public employment and who are not war veterans is limited. MOLISA[11] figures from 1999 show that of the total government funds for social protection, 40 percent is support to the war invalids and the families of war heroes from the war of unification and another 40 percent are civil service pensions and other employment related assistance. The remaining 20 percent is assistance to the poor in various poverty alleviation programs (Conway and Turk 2002). The government has so called Social Guarantee Fund for regular social assistance to the elderly without relatives, orphans and invalids, but funds are limited. While nearly one million individuals qualify for assistance, only 20 per cent of these actually receive it (Conway and Turk 2002). There are also Emergency Relief Funds both at national and province level.

A broader social security system is being discussed. The costs of the commitments to the war veterans are still so high that it is expected to take many years before a broader system can be implemented.

3.3 Livelihood conditions in the study area

Hai Lang district

Hai Lang district lies in the southeast part of Quang Tri province, bordering to Thua Thien Hue province. It has around 100 000 inhabitants, and 16 300 households. The district stretches from the coast to the highland plains. It has 21 communes, of which two are fishing communes[12], five are hill land communes, one district centre, and 13 are low land communes.

The 17th parallel, which divided Vietnam between 1956 and 1975 runs 40 km north of Hai Lang district, which belonged to South Vietnam during the 'American war'. The war was very intense in this area and Quang Tri province was devastated. The

[11] Ministry of Labour, Invalids and Social Affairs

[12] The two fishing communes are not included in this research, as the impact of the 1999 floods was less in this area, compared to the rest of the district.

former capital of Quang Tri was in ruins. Hai Lang district was deforested and large areas reduced to sand. The fields were impossible to cultivate for the first five years after the war. They had to be cleared from explosives in the ground and the bomb craters had to be filled with soil. There are still a few craters of 5-10 metres in diameter in the fields. All through the 1980s people were very poor. The 1990s coincided with the period of market reforms (đổi mới) and living standards gradually rose. In 1993 the paddy fields were formally allocated to individual households, although they had been cultivated individually in an informal way since around 1990. The land tenure contracts are for 25 years, with an expectation of being extended. The contract can be inherited. People consider the land as their own, but the state maintains the formal ownership of the land.

The economic base of most people in the district is paddy (wet rice cultivation). The hill land villages also have some paddy land, and some villages have access to additional paddy in arrangement with the low land villages. The economic base in the hill land villages is more diverse than on the low land and includes more garden crops, dry land crops and animal husbandry compared to the low land.

Since the 1990s the state has invested heavily in the intensification of rice production with infrastructure for irrigation and drainage, new seed varieties and subsidised fertiliser. This has enabled people in Hai Lang to grow two crops of rice per year. Most people have enough own-grown rice for their yearly consumption and also have a surplus to sell. The profitability of rice is unstable. With increasing market liberalisation the output price of rice varies significantly between years, and also between months. Fertiliser subsidies have been removed. The frequent seasonal problems of heavy rains and drought ‘at the wrong time’ in the production cycle frequently cause reduced harvests. Rice production is still considered by most farmers as very important for food security. Many fields are not suitable for other crops than rice because of the wet conditions. As a consequence, the main effort of the local government and farmers in Hai Lang district (as in many low land areas in Vietnam) is to protect rice production with an expanding network of dikes, canals and pumps for drainage and irrigation purposes. As investments continue and production becomes more stable, the living standards are gradually rising.

The differences between the poor and the better-off are growing all the same. The better-off are diversifying away from rice, and are developing e.g. trade, animal husbandry, and cultivation of the sandy areas. The latter can give a good income from e.g. melons and chilli, but requires a lot of investment in fertilisers and irrigation.

'Living with the floods'

In general the standard of living is higher for the low land population than in the hill land villages and the mountains.

The low land of Hai Lang district is highly exposed to inundation during the heavy rains, especially as the rivers do not flow straight to the sea but into the lagoon of the

neighbouring province, Thua Thien Hue. Hai Lang district slopes from the sea inward, and the communes in the central part of the district are actually below sea level. There is a five meter high, man-made, sand dike protecting the fields and residential areas from the sea.

There are normally heavy rains and storms in north central Vietnam during September to November. The low land area becomes inundated for a few days and water rises up into many houses, at times up to half a metre. People are accustomed to this type of floods. They are part of the production cycle on the low land and contribute valuable sediment with high nutrient content. Even so, people get worried if the floodwater drains slowly and the children have to stay away from school for too many days. There is also the worry of emergency health problems occurring during floods when transportation to the hospital is difficult.
The area of Hai Thanh commune is the lowest lying land, the 'basin' of Hai Lang district. It is 0.5 m below sea level and the land slopes down to this area from all directions. According to the villagers, the first inhabitants of this area lived on rafts and boats and had no fixed investments which could be damaged. They grew one crop of rice per year of a low yielding, but flood tolerant variety. During the 15th century people from the northern provinces of Vietnam started settling in Hai Lang district and started the enormous project of draining the area to create more cultivatable land. Dikes were built to protect the crops against flooding. The settlers also cultivated one crop per year, which was harvested well in time before the autumn storms and floods. The area of Hai Thanh, however, was long considered to be too difficult.

Floods during crop season can cause 'small disasters' for vulnerable households

Nowadays all households have two crops of rice per year, but the cultivation schedule is tight. If there are heavy rains in January, the drainage capacity will determine the time of planting. A delay increases the risk of damage to the harvest by the heavy rains in May (*tiểu mãn*). Replanting of the second crop must be done quickly in order for farmers to be able to harvest in early September before the autumn storms. Seasonal risk is thus part of the cropping pattern. Risk is decreased by the continuous investments in dikes and drainage systems, which enable farmers to protect the crop. It works more often than not, but during the period of my study, three out of nine harvests were reduced due to rains during the cropping season. Different households are dependent in various ways on the income from the rice crop. A bad harvest can be perceived by the individual household as a disaster if they have few alternative sources of income.

I never heard the term 'disaster' (thiên tai) being used regarding the seasonal crop losses caused by heavy rains, drought or insect attacks on the growing crop. The word disaster seemed to be 'reserved' for the autumn flood storms, which also cause loss of life, destruction of houses and collective infrastructure. The threat of seasonal crop losses, however, is continuously present in people's minds. The status of the crop and the level of harvest is always a major subject of discussion, because it

influences the everyday life to such a large extent. Many of the development policies and actions are also directed towards increasing the security of the rice crop.

The fieldwork villages

The three villages in Hải Lăng district selected for my fieldwork are Văn Trị village, low land; Phước Điền village, extreme low land; and Xuân Lộc village, hill land.

Van Tri village, Hai Tan commune, has 221 households. Most of the families have paddy production as their main income while 23 households are fishermen (and women). It is a poor village compared to the other areas in the district. The geographical conditions are unfavourable. It is a low-lying area, close to a large river, frequently exposed to rains and flooding. Van Tri village has relatively little paddy area (40ha) compared to other villages on the low land, and little area for dry land crops (6 ha). They have pigs and poultry, and buffalo grazing on the grassland. The road that links them with other villages and markets is low-lying and gets flooded during several weeks every year. This makes the location of the village remote compared to other villages, which affects market access and prices.

Phuoc Dien village, Hai Thanh commune, is the poorest village in the district according to district staff. It lies 0.5 meters below sea level and is therefore physically very exposed. As in Van Tri, the villagers are dependent on rice and animal husbandry. Many households in Phuoc Dien village have difficult living conditions despite having around one hectare of paddy land per household, which is double the average land holding per household in the district. Frequent seasonal stress reduces the harvest and they have little higher land for other types of crops. Having few other sources of income, apart from rice, makes their livelihood vulnerable. Around 40 percent of the families are poor, according to the local classification, as compared to 10-20 percent in the other communes. Many households were indebted even before the floods, some of it caused by incapacity to pay the production costs because of low harvest. Short-term migration occurs when people take part in the coffee harvest in Dak Lak province. Migration patterns are however constrained by the need for households to use all available labour for rice production.

Xuan Loc village, Hai Chanh commune, lies on the gently sloping land along the O Lau river, below the hill plateau, which stretches 30 km to the west, and then rises to mountains. Xuan Loc village has an arrangement with My Chanh village, which gives them access to some paddy land on the low land, but not enough to meet all their consumption needs. They have more diverse sources of income from gardens, dry land crops, forest planting, minor forest products, pigs, buffalo and as day labourers. They are close to the major My Chanh market, which facilitates small trading. Many families in Xuan Loc village have sons and daughters who work in Ho Chi Minh City, as there are better income opportunities for the young in the south than in Hai Lang. They are often able to send back around 1 million VND (65 USD) per year. The average income level is lower than on the low land in general, but higher than in Phuoc Dien village.

A Lưới district and Hồng Hạ commune

A Luoi is a mountain district in Thua Thien Hue province bordering with Laos. The district town lies 75 km from Hue City. Hong Ha commune is on the road between Hue City and A Luoi town around 50 km from Hue. In 2000 Hong Ha commune had 198 households and 1176 inhabitants[13]. They belong to the ethnic minorities of Ca Tu, Ta Oi and Bru-Van Kieu. 60 percent are Ca Tu. A few Kinh (the majority people in Vietnam) people have moved to Hong Ha from the low land and have become residents. The commune was established in 1975 after the war, but many of the households come from this area originally. During the war they had been resettled in the forest close to the Lao border. When the Hong Ha households were resettled within the present commune boundaries, they were also subject to the government sedentarisation policies, which discouraged shifting cultivation and focused on wet-land rice cultivation and permanent social infrastructure. Sedentarisation has been a government policy since 1968 in the northern mountains (resolution no.38/CP) and after 1975 it became a major part of the socio-economic policies also in the central provinces.

A Luoi district was heavily deforested during the American war. Once the forest destruction had started, it continued both through logging by the government and illegal logging. For the last 15 years there have been intensive campaigns to replant and protect the forest, and the area of Hong Ha commune is today mostly covered with forest. There are also vast areas of imperata grassland, which are difficult to cultivate. Imperata is a grass with a tough root system, which tends to take over on deforested hills.

The total area of Hong Ha commune is close to 19 000 hectares. 7800 ha is natural forest, 700 ha is planted forest and 136 ha are used for agricultural crops[14]. People of Hong Ha commune used to practice shifting cultivation but after 1975 they have gradually changed to an emphasis on irrigated paddy production on flat land near the river. The main food crop is still cassava, which is also grown in the river valley. To a limited extent people still cultivate 'old' plots on the hill slopes. These are plots from the times of shifting cultivation, which have not been 'shifted' for many years and therefore have very low productivity.

The head of the Agriculture Section, Mr Bui[15], explains that people do not have the capital or practice to pay for inputs in production. Their production system is dependent on having plenty of land. Now they have to produce in a very limited area with low productivity, which has resulted in hunger. 43 percent of the population in A Luoi are poor. According to Hong Ha commune People's Committee there are 43 chronically poor households in Hong Ha (out of 198 households) and in addition 54 households who are hungry in the months before harvest[16].

[13] Commune People's Committee 18/5/00
[14] Commune People's Committee 18/5/00
[15] Interview 17/5/00
[16] Mr Hua, chairman of the commune PC 1/7/00

Most of the area of Hong Ha commune is under the management of the Bo River Watershed Management Board under the province Department of Agriculture and Rural Development. According to household interviews many households do not invest in the land because the state is in a position to claim it for forest plantation with short notice. The commune Party Secretary confirms that people have little long-term relation to the development of the area because of the lack of household entitlement to the forest land[17].

There have been a number of government campaigns to introduce cash crops, like cinnamon, sugarcane, pepper and pineapple, all of which were said to have failed due to insufficient markets. The latest campaign for planting rubber trees involves 50 percent of the households in the commune.

Hong Ha commune consists of five villages. The interviews focus on two of these, which are Pa Rinh village with 46 households and Con Tom village with 43 households. All villages are situated along the river, and suffered similar problems in the floods. The two irrigation systems in the commune are located in the selected villages, and these were heavily damaged. Con Tom has better access to hill slopes for cultivation than Pa Rinh village, although access is limited in the whole commune.

[17] Mr Nam, commune Party Secretary 18/5/00

4. Disaster

When dealing with the impact of the disastrous floods of 1999 in A Luoi district (mountainous) and Hai Lang district (low land and hill land), the study is based on interviews with households, local organisations, the commune and district People's Committee in May and October 2000. Before the actual fieldwork started, I visited Hai Lang more informally for two weeks in January 2000, which gave provisional impressions from a time when the floods were more recent. The interviews in May and October provided accounts of what had happened and of people's perceptions of the disaster.

The extent of the disaster and the impact on people's livelihood varies between areas and households. In part this variation comes from the differences in housing, production conditions and location, i.e. what Wisner et al. (2004) call 'unsafe conditions'. These are discussed in this chapter. The variation also depends on differences in capacity to cope and recover, which is the subject of analysis in the following chapter.

4.1 The 1999 floods in historical perspective

The 1999 flood hazard was called a 'disaster' (*thiên tai*) both by people in the affected area and nationally. Compared to other floods, the shock effect was enormous because of the unusually high water levels, which rose rapidly during the night, and the combination of strong winds. It was a humanitarian disaster in that so many people lost their lives and an economic disaster in terms of the high level of loss and damage.

In central Vietnam the 1999 floods are called the 'floods of the century' and are regarded as the most severe hazard during the century. When compared with other major floods in history, some people felt that the floods in 1953 or 1983 were worse, even though the losses were smaller, because of the resulting food crises.

An old man in the mountain commune Hong Ha, Mr Dam says: *I am 69 years old. I have been living here all my life. The flood in 1953 was even bigger than last year's flood. But in 1999 there were more landslides. In 1953 there was full forest cover, but the flood still destroyed a lot. Every year the flood takes land along the river. We used to plant bamboo along the river, but the 1983 floods took the bamboo as well. In 1983 we lost all the cassava and tubers. We were very hungry. We dug out roots in the forest to eat.*

People interviewed in Hai Lang also commented that the 1983 floods were worse in terms of hunger and diseases after the floods. The society was very poor and relief was insufficient. Nowadays more people have improved houses, which protect them better, and have more buffers in terms of savings to help them through adversities.

Yet, the level of loss and physical damage has latterly increased as there are more productive resources and infrastructure now than previously.

Adger's (2001) experience is that the perceptions of a flood or storm are different depending on whose property is affected, and whether it is individual or collective property. His study from Xuan Thuy shows a difference between the perceptions of coastal households and commune officials regarding the 1992 storm, which resulted in the loss of shrimp stocks and caused some households to sell their leases. Commune officials did not consider it to be a disaster because it did not impose cost on the collective. From the household perspective it is worse losing private property. A household in Giao Hai commune commented: '*The 1983 storm was significant, but I did not own any assets then. The 1986 storm seemed worse, as it was our own property that was being lost'*.

On the other hand, floods may cause severe damage to collective property in terms of infrastructure, while not affecting the households to the same degree. The floods in Hai Lang during the autumn of 2004 were reported by the district People's Committee to involve almost as high flood levels as in 1999 and infrastructure was badly damaged. When I asked the households a few months later, people did not complain much. The water had risen more slowly, had not been as stormy as 1999 and they had been able to secure their own private property.

4.2 Impact of the 1999 flood disaster

On November 2nd 1999 the water started rising in the rivers in Hai Lang and A Luoi districts. It rained 2300 mm in four days. On the low land the floods caused damage both because of the force of the stormy water, and by the long inundation period with high water levels, reaching up to the roofs of many houses for three days. A large proportion of the animals, like pigs, poultry and cattle drowned, food crops in storage in the houses were lost. In the hill land areas, the growing annual and perennial crops were destroyed or damaged. In the mountains, where the force of the floods was the greatest, there was land erosion, land inundation with sand and stones and destruction of growing crops. Trees were uprooted and swept away. In the whole area there was extensive damage to houses and infrastructure. 592 people died and 24 people were missing, according to the newspaper Lao Dong in November 1999.

In the seven provinces affected, from Quảng Bình to Bình Định, there were 41 866 houses that were pulled down, 48 367 hectares of growing crops were destroyed, 219 000 tons of rice in storage were destroyed. The total value of the damages was 3 300 billion VND (220 million USD)[18].

The most exposed people were those living close to the river. The fishermen in Van Tri live on the banks of the river and most of their houses were destroyed. They

[18] The Vietnamese newspaper Lao Động 17/11/99

moved whatever belongings they could to their boats. Van Tri village only had one two-storey building at the time, belonging to Mr Thai, who was said to be the richest man in the village. 40 people sought refuge there.

Many people sat on the rooftops of their houses for three days before the storm subsided and the water sank to a level where it was possible to move around. There were few boats strong enough to challenge the violent waters so many people were isolated by the water for three days. They were hungry and cold and many got diarrhoea from drinking the water around them. The temperature was only around 15 degrees. In Van Tri village, the staff of the People's Committee and the Red Cross volunteers started going around in boats on the first morning, distributing noodles to people on the roof tops, but it took time before everybody could be reached.

29 people died in Hai Lang district, and 9 people in A Luoi district. It was said that many of the people who died did so whilst trying to move through the cold water with its strong currents, in efforts to rescue people or belongings. According to the head of the Hai Lang Fatherland Front many old and weak people died[19].

Poor people living in simple houses experienced their houses collapsing. Many people had a relatively steady main building, but with an adjacent kitchen and pigsty which were both much weaker and these collapsed. Apart from the areas close to the rivers, the areas that were particularly exposed were the small hamlets surrounded by large areas of paddy, and consequently surrounded by stormy water during the floods.

Most of the pigs, ducks and chickens on the low land died as well as many of the cows and buffalos. In Hai Lang district, 30 000 pigs and close to 400 000 poultry died during the flood, according to district reports[20]. Over 25 000 tons of rice became wet and inedible. The head of the cooperative[21] in Van Tri village (223 households) reports that 64 houses in the village partly collapsed, 38 buffalo and 70 percent of the pigs died.

Floods during September-November are part of the seasonal cycle on the low land, so people here do not have paddy rice in the fields during this time. A major part of the rice stored in the houses was lost however. The interviews showed that most people store the rice they need for consumption at home until the next harvest at the end of May. Some households also had rice at home which was intended for sale but had not yet been sold, awaiting higher prices.

In the hill land communes the autumn floods do not normally affect the growing crops, but this time the inundation period was too long. A lot of both annual crops like sweet potato and beans, and perennial crops like pepper and fruit trees were lost or damaged. Hai Chanh commune lost 60 percent of all pepper and 100 percent of

[19] District meeting 15/5/00
[20] DPC report no 60 17/11/99
[21] Mr Dao 8/5/00

the annual crops according to the commune People's Committee[22]. People often have their houses, gardens and cultivation in basins and close to the river, where the soil is best and there is access to water for irrigation, but therefore also at risk to floods.

Mr Duoc's family in Xuan Loc village (hill land) used to be above the poverty line before the floods. He tells us:
When the floods came, people from the co-operative came by boat to help my family to move to the co-operative building, which is on higher land. I stayed with the house, sitting on the roof for nearly 3 days. I got diarrhoea from drinking the floodwater. We lost 400 kg of rice and 150 kg of dry cassava and sweet potato, which got wet. It was all that we had in storage in the house. We lost 2 pigs and 32 chickens. One pig did not die in the flood, but from disease after the floods. All 22 pepper plants in the garden were destroyed by inundation, 10 of them were bearing fruit. 11 citrus trees were also destroyed. It was our main income before the floods, and gave an income of 2 million VND (120 USD) per year[23]. The house was damaged and part of the roof collapsed.

Damage caused by the floods in Hai Lang district, November 1999.

(Hai Lang District People's Committee report number 60 17/11/99)
People killed: 29
People wounded: 20
Value of material losses: 159 332 million VND (approx. USD11 million)
(1 USD = 15 000 VND)

Table 1:
Selected figures: (the full list is too long to be included here)

Item	Quantity lost	Value in million VND
Erosion on the dikes	203 146 m3 of soil	2 438
Damaged dams and sluices	257	577
Damaged pump stations	24	194
Damaged canals	98 610 m	
Soil erosion	144 477 m3	1 734
Damaged bridges and culverts	366	1 893
Damaged road	44 824 m	
Growing crops destroyed	1 089 ha	4 580
Fruit trees damaged	51 ha	141
Industrial crops damaged	30 ha	789
Dead cattle	472	566
Dead pigs	29 914	10 979
Dead poultry	392 790	6 477
Rice seed lost	466 tons	1 631
Rice lost or damaged	25 291 tons	45 170
Class rooms damaged	150	536
Class rooms collapsed	50	472
School material and equipment		1 205

[22] Meeting Hai Chanh commune 11/5/00
[23] Probably he means income from sale, not the profit after deduction of costs.

Houses seriously damaged	1 867	9 083
Houses destroyed	267	1 299
Houses flooded	16 207	8 104

Source: Hai Lang People's Committee (UBND 1999)

Losses through disease after the floods

Losses not only occurred in the immediate floods but also as a consequence of the polluted environment after the floods. Most households interviewed on the low land had the experience that the new generation of pigs bought after the floods had died of disease. Many people did not realise the risk of disease and took loans to reinvest in pigs and poultry as fast as they could, leading to many failed investments and debts. In the hill land village there were epidemics after the floods among the cattle.

There were however no epidemics among people, although many got stomach disorders from drinking the floodwater. Chlorine was distributed by the clinics to the households to clean the drinking water. The veterinary staff were worried that it was difficult to bury all the dead animals quickly enough. There were so many tasks that needed to be done, and initially people were concentrating on recovering their houses from the mud, basic repairs and drying the rice.

The impact of the floods in A Luoi district and Hong Ha commune

The water level in the Bo River in A Luoi rose 15 meters higher than the normal level according to the vice chairman of the district People's Committee[24]. 150 hectares of a total of 550 hectares of paddy land in the district was inundated with stone. 21 ha of these have not been possible to recover according to the vice chairman[25]. Along the 75 km road from Hue city to A Luoi district town there are many eroded slopes. The district People's Committee reported that there were 64 landslides blocking the road along this stretch, which took more than a month to clear.

In Hong Ha commune the floods had a drastic impact on the land areas close to the river. The force of the river eroded large chunks of the riverbank, making the river up to 20 meters wider than before in some places (my eye-sight estimation). The river carried sand and stone that invaded the cultivated land. The commune People's Committee chairman reports that all 16 hectares of paddy rice land had been covered with up to two meters of gravel. Two hectares were not possible to recover[26]. The rest required several months of digging. 17 ha of forest was uprooted and carried away. The large, relatively stable iron bridge across the Bo River was torn away.

The Pa Rinh village head, Mr Duong said:

[24] Interview 17/5/00
[25] Interview 15/9/00
[26] Commune meeting 18/5/00

My family has 1000 m2 of paddy rice divided in 5 plots. All the land was deeply inundated with sand and stone. We lost our fish and the fishpond filled up with sand and clay. The cassava and maize got wet and were destroyed.

According to the chairman of the commune People's Committee[27], a third of the households in Pa Rinh had fishponds, which were all destroyed by the floods. Eight households in Pa Rinh lost all their paddy land. With the repair and improvement of the Khe Ca Te irrigation system in the commune, six of the households are expected to have paddy again.

Both households and the staff of the People's Committee were concerned about the food security situation after most of the cassava roots had become rotten and inedible due to inundation. Cassava is the most important food crop in the mountains. The roots can be harvested gradually all year round. Most of the cassava was destroyed in the floods and had to be replanted, and it took nine months before the new roots could be harvested[28].

Con Tom village lost three hectares of land, which were pulled away by the river. One hectare was paddy land and the other two were for dry land crops. The village used to have seven hectares of land for dry land crops, but now there are only five hectares left says Mr Thay, the village head.[29] In Pa Rinh village eight hectares of dry land were inundated with sand.

There was massive damage to individual houses near the river. Mr Mau's family, who was better-off, had their two-storey brick house and restaurant on the riverbank, which were both completely destroyed. The poor household of Mrs Kan Bang in Con Tom village had just collected wood[30] to build a house but this was all lost in the floods[31].

Some poor households lost practically everything they had; house, belongings, animals, crops and part of their land. The family of Mr Eo and Mrs Hat live close to the river in Pa Rinh village. Their house was pulled away by the river. They tell us[32]: *We had 300 m2 of paddy, but it is dry land now. We lost 30 of our 46 chickens. We had 2000 plants of cassava, but the roots rotted in the floods and became black and smelly. We lost our 150 banana plants around our house. We had a mother pig, which we had bought on credit from the 'Department of Fixed Settlement'. It died in the floods, but we still have to pay back the loan.*

[27] Commune meeting 27/9/00
[28] Pa Rinh village meeting 19/9/00
[29] Interview 16/9/00
[30] After permission from the district Forest Station and providing a fee, it is permitted to collect wood for house construction.
[31] Interviews 18/9/00
[32] Interview 17/9/00

Mrs Diep's family (middle-income) in Pa Rinh[33] lost two cows and five goats all bought on credit. She now has a bank debt of 5.5 million VND (365 USD) which she does not know how to pay back.

Table 2: Hong Ha commune People's Committee estimation of the damages in their commune[34].

Flood loss and damage	Quantity
Paddy land inundation with sand and stone	16 hectares (all)
Paddy land lost completely	2 ha
Growing cassava destroyed	12 ha (out of 60 ha)
Dry land lost	4 ha (out of 10 ha)
Hill land fields damaged	7 ha
Banana trees damaged and lost	10 ha
Growing pineapple lost	9 ha
Growing sugarcane lost	15 ha (out of 35 ha)
Planted acacia forest lost	7 ha
Bamboo lost	10 ha
Fishponds were damaged and fish escaped.	3000 m2 (out of 7000 m2). 30 000 fish
Dead cattle	19 (out of 360)
Dead pigs	11 (out of 200)
Dead poultry	285
Dead goats	13 (out of 36)
Rice that was swept away	1 156 kg
Rice seed that was lost	420 kg
Fertiliser that was lost	750 kg
Wood for house construction lost	9 m3
Bridge collapsed	1 (out of 1)
Classrooms were damaged	5 (all)
Dams/reservoirs for irrigation have been damaged	2 (all)
Houses collapsed	7
The clean water system was damaged	
Telephone lines were unworkable	

Source: Hong Ha commune People's Committee

In addition many households lost furniture, clothes, household equipment, radios, school books etc. According to the commune People's Committee there were 102 households in the commune who were seriously affected and 52 households who were slightly affected by the floods. The total commune population was 198 households. Only 42 households can be said to had enough to eat, according to the commune People's Committee[35]. The estimated total value of losses in Hong Ha commune were 1.3 billion VND (approx. 0.8 million USD).

[33] Interview 27/9/00
[34] CPC document and meeting 18/5/00
[35] Commune meeting 18/5/00

5. Humanitarian response, coping and recovery, Hai Lang district

This chapter looks at the actions of the government, local organisations and households in the coping and recovery process. The chapter draws on the whole fieldwork material from 2000-2004. The story pays particular attention to the experience of poor households as the focus is on the difficulties that people faced in coping and recovery. The households quoted should thus not be seen as representative of all the households in a particular village.

The story of Mr Thanh and Mrs No's family in Van Tri village[36] (low land) gives a picture of the situation of a poor household during the floods and the following year. Their story brings up many of the issues that will be discussed further on in this chapter e.g. the role of local organisations, the struggle to secure food needs and the difficulties involved in recovering production.

The household of Mr Thanh and Mrs No includes two small children (three, from 2000) and Mr Thanh's mother. Their house is 20 meters from the banks of the O Giang river. Mr Thanh tells us:
The water rose very fast. The house was damaged and the roof over the kitchen and pigsty collapsed. The water was very cold, and there was wind and high waves. The house was filled with mud. Tables, chairs and household utensils were pulled away by the water. We lost all our animals, 2 pigs, 50 ducks and some chickens. One ton of rice got wet and was spread all over the place. My family sought refuge in a neighbour's house further from the river, but I stayed on the roof of our house. On the third day we were reached by emergency deliveries of food from the commune People's Committee, the Co-operative and the Red Cross. We received rice from people in Hai Lang Township, who cooked rice, packed it in bags, while the district People's Committee organised delivery to the low land communes. When the water had receded, the district police and army helped to dig out the mud from the house. The commune Youth Organisation together with the Red Cross helped to repair the house. We received blankets and kitchenware from the commune Buddhist Pagoda. The commune Women's Union and Farmers Association mobilised food support. We received medicine and disinfectants from the health station against diarrhoea and to clean the drinking water. We got 200 000 VND as a grant from the district relief funds to buy 2 new piglets. During December and January we received 200 kg of rice and a big box of noodles as food support through the district relief committee.

We borrowed one ton of rice from private lenders in another commune, with an interest of 400 kg to be paid after harvest. We took loans to repair and strengthen the house, in total 2.5 million VND; 500 000 VND from neighbours, 500 000 VND from the district Women's Union and 1.5 million VND from the state bank 'flood recovery credit'. We got production inputs on credit from the co-operative.

[36] Household interview 8/5/00 and 11/10/00

We have 3500 m2 of paddy land and 250 m2 of garden land. In 1999 we harvested 2.1 tons of rice. After paying back credit for production inputs and loans for food we still had 1 ton of rice. This was mostly lost in the floods. During spring 2000 it rained so much that the planting was delayed, and then we had to replant part of the crop twice. After the autumn crop 2000, we only had 400 kg of rice left after paying production costs and the food loans. This rice was finished by October. After that we borrowed first from relatives, and then later taking new private loans. The spring crop in 2001 was again bad, because of insects and rains before harvest, but the autumn crop was all right. Our rice debt is now two tons.

The garden production of sweet potato and vegetables is barely enough for the pigs and for home consumption. The 2 pigs that we got from the district died through disease and we bought 2 new ones. The pigs grow very slowly, only 40 kg weight after 10 months. We bought new ducks and chickens, but they died.

In 2000 Mrs No made traditional hats from which she could earn 3000 VND per day.

We are worried about the bank loans. We took a loan in 1996 from the 'Bank for the Poor' of two million VND. The repayment was postponed because of the floods, but I think that we have to pay in 2001. There is also the 'flood-recovery-loan' to pay back, but we still do not have any surplus from production. At least we are not in debt to the co-operative. We borrowed from relatives to be able to pay back the input credit to the co-operative in 2000. My health is not good. I have had strong headaches for some years. The treatment in Hue costs about one million VND each year. We borrow from relatives for the medical costs.

The situation of Mr Thanh's household was similar to a majority of low land households[37] in terms of losses. They however have more difficulties to recover compared to the majority in Hai Lang district, because of their limited resources and a poor health situation. They are a newly established household, and have less land than average in the district.

The responsibility taken by the state and the community in the provision of basic needs in the immediate disaster situation was high. The households however depended more on individual resources and social networks for coping and recovery after the first few months. The public support was not sufficient to prevent poor households from resorting to risky coping strategies, such as taking informal loans with high interest. The seasonal stress and production risk that followed after the floods contributed to prolonging the period of recovery.

[37] District People's Committee meeting 15/5/00 and district report on loss and damage (UDND Huyen 17/11/99).

5.1 Humanitarian assistance

Any major relief had to wait until the water level had gone down.

When the flood water rose, and people were sitting on the roof of their houses for three days, waiting for the water to subside, there were some interviewed families who reported to have been reached by the commune- or cooperative staff with food packages, mainly noodles. Most people however, said they had had to wait until the water had receded before they were reached by food relief. The commune staff complained about the lack of boats sturdy enough to be useful in the strong waves and current[38].

The People's Committee, cooperatives and mass organisations in Hai Lang distributed food, clothes and blankets. According to a district People's Committee report[39] 4500 packages of noodles were distributed on the first day of the floods. Between the second and the seventh day 6400 kg of rice was distributed. Households in Hai Lang town were involved in cooking and packing rice for distribution[40]. The interviewed households had all received support and attention. In Hai Tan, the commune Red Cross/Youth Organisation mobilised 120 people into groups for food distribution, sanitation, helping people dig out the mud from the houses and doing basic repairs. In Hai Chanh commune the equivalent organisation mobilised 107 people[41]. The volunteers of the Red Cross and Youth Organisation are often the same people at commune level.

A high level of coordination of humanitarian assistance

Humanitarian assistance from donors, NGOs and Vietnamese organisations and individuals started to arrive at an early point.
The Vietnamese government at national level distributed 33 000 tons of rice from the national storages to the seven affected provinces, according to the media[42]

'Boards for Management and Distribution of Flood Relief ' were established under the district and commune People's Committees. In Hai Lang district the Board was composed of representatives from all sections of the district authorities, the mass organisations and the Red Cross. At commune level there were similar boards under the commune People's Committee, with representatives of commune level mass organisations and the Red Cross, that were responsible for the organisation of distribution.

There was national mobilisation whereby the entire society seemed to be involved in organising support. Fund raising was conducted through organisations, schools, private companies, at all places of work, rural communities, the media, …everywhere. The people I talked to in other parts of Vietnam were all concerned

[38] Meeting Hai Tan commune 8/5/00 and Hai Thanh commune 20/10/00
[39] Báo cáo tình hình PCLB 1999, 4/5/00
[40] Conversations with people in the town, household interviews and district meeting 15/5/00.
[41] Mr Giang, Hai Tan Red Cross 8/5/00 and Hai Chanh Red Cross 11/5/00
[42] The Vietnamese newspaper Lao Động 17/11/99

with the situation in the flood stricken area and had made some kind of contribution. Hai Lang district received approximately 15 billion VND in flood relief, both in cash and kind, according to a District People's Committee report (UBND Huyện 4/5/00). Approximately 9.3 billion were from state funds.

When there were disastrous floods in the Mekong delta in the following year of 2000, 'everybody' in Hai Lang also collected relief funds to send. For example, people in Hai Hoa commune who had been badly hit in the 1999 floods and at that time received a lot of support, collected 25 million VND (1600 USD) for the people in the Mekong delta. From the whole of Hai Lang district 130 million VND were contributed[43].

Distribution according to need or according to losses?

Coordination of the inflow of humanitarian assistance at both national and district level seems to have led to a comprehensive outreach, and that overlap or gaps were avoided. The first phase of disaster response, which involved solving the acute need for food during the first four months appears to have been adequately addressed, according to the interview results. Nevertheless, there was a tension regarding the principles of distribution according to need or according to losses.

The Hai Lang district Board originally took the decision to base distribution of food relief according to the size of the family. Distributions were made gradually as outside support arrived. Each household received three to four batches of rice and noodles. According to staff of the district People's Committee, the later batches of support were distributed more selectively according to need. The interviewed households had all received food relief to cover their basic needs for the first three months after the floods. The interview results suggest an acceptance of the principle of 'blanket' distribution of relief, at least in the beginning, when equitable distribution to all was perceived to be practically the same as distribution according to need. More or less the entire population in Hai Lang district were assumed to suffer from acute food shortage during the first months. In the distributions where village meetings decided on the target group, the focus was on assisting the households who had suffered the biggest damage. This could be said to follow principles of need in some respects. Even so, from a perspective of poverty there were households who would have needed more support to avoid negative consequences of hunger or indebtedness, as the interview results suggest.

A diverse set of actors and organisations were engaged in providing assistance. Some local organisations provided assistance directly to individual communities. Hai Tan commune reported to have received 131 tons of rice through the district Board and 30 tons directly from NGOs[44]. The village head organised village meetings to decide on the distribution of NGO support. In Van Tri village the meeting divided the villagers in categories, based on the size of the losses. Families whose houses had collapsed or were badly damaged got particular local attention

[43] Hai Lang Red Cross October 2000

[44] Hai Tan commune meeting 10/5/00. Mr Bao DPC chairman.

and support[45]. Certain relief efforts were targeted specifically to the poor, like the support from the Buddhist Pagodas. Hai Lang Red Cross distributed 200 tons of rice to 2000 households, based on lists of those most in need compiled by the commune Red Cross together with the village leaders[46]. The commune and village leaders in Hai Tan commune however, seemed to prioritise distribution of support, based on the size of the loss rather than in relation to need[47]. Commune leaders stressed that the assistance was not a poverty alleviation program but should follow flood losses[48].

The main part of the relief distributed was rice

Relief that came to the district as cash funds were mostly used to buy rice for distribution. In other disaster situations internationally, cash grants have been tried instead of food distributions as relief. An example is the floods in Mozambique 2000, where USAID provided cash grants of 100 USD to 85 000 families. The director of USAID in Mozambique explained that their experience was that people often sell the relief supplies, in order to be able to buy what they need, so it is better to give people cash directly. (Christie and Hanlon 2001 in Wisner et al. 2004) In Hai Lang the interview results suggest that there was a general need for food and that the relief was adequate, especially for poor and middle-income households. Better-off households may have preferred cash support. Rice is however easily exchanged for cash in the local economy according to cooperative staff. Publicly controlled purchase of rice for distribution was also done to avoid rice prices from rocketing, according to the head of the district Financial Section[49].

The general exemption from the land-based tax was another type of government relief. The government subsidised the price of pork over Tết (the Vietnamese New Year), so that people could have a decent celebration despite the food shortages and high prices[50]. Beef prices doubled in relation to normal as slaughter of cattle was prohibited in Quang Tri because of the epidemics after the floods[51].

Community responsibility for food needs were gradually replaced by individual networks

In general, the provision of public relief had subsided in early March, four months after the floods. There were still two to three months to go before the rice could be harvested and many people suffered food shortages. It appears that the culture of community involvement in the welfare of all households mainly applied to the immediate disaster response during the first three to four months after the floods.

[45] Van Tri meeting and interviews 8/5/00.
[46] Hai Lang Red Cross October 2000.
[47] Van Tri 9/5/00
[48] Hai Tan commune meeting 10/5/00
[49] Hai Lang district meeting 15/5/00
[50] Meeting x with the Hai lang district People's Committee
[51] Hai Lang District meeting 15/5/00

After this period the individual household responsibility for their own welfare, with the help of family and relatives, seemed once again to be the norm.

During the time of collectivised agriculture in Hai Lang, (between 1975 and 1990), the cooperatives were responsible for everybody's basic needs, at least to the extent that it could be handled by the collective economy. According to informal conversations with households in Hai Lang about the 'old times', the 'cake' was small but divided equally. After the land reform when each family received individual land tenure, community responsibility for food security decreased and depended more on the capacity and situation of the individual households. The interview results suggest that poor households do not normally receive community support and depend on family and relatives for assistance. In the immediate crisis after the floods however, the community again took on responsibility of securing the well-being of all. Interviews with poor households suggest that they got more attention than they get under 'normal' conditions. The individual families got support irrespective of whether or not they had 'social networks' or whether they were members of organisations.

The attention of community leaders to the well-being of the households, shown by visits to their houses, was valued very highly by the families interviewed. People in all the studied villages would frequently specify in the interviews which leaders had visited them to enquire about their situation. I understood that the village, commune and district leaders did spend a lot of time on such visits. If they failed in these social commitments it could impact on their posibilities to continue in leadership positions, as suggested by the case of a commune leader in Hai Tan, who was replaced after criticism of not being active enough in the community after the floods[52].

At village level, it was the village head who organised the other organisations in disaster response[53]. This can be interpreted as a sign of the strengthened role of the village head, which is the trend in Vietnam as a whole since the 1990's (Shanks et al. 2003).

Before 1975, the role of the village leaders was very important in Hai Lang. The village, household groups and kinship ties were the primary 'community' that people relied on in crises. In the period 1975-90 their role decreased in favour of the commune People's Committee and the cooperative. During the 1990s, and especially since 1999, the roles of the village and household groups have again become more important according to local staff.

The mass organisations gathered neighbourhood groups for mutual assistance

Luttrell (2001) finds that reciprocal assistance through neighbourhood groups has a long history and is well anchored in Vietnam. She suggests that egalitarian village

[52] Informal conversations in Van Tri October 2000.
[53] Van Tri village leaders 9/5/00 and Hai Tan Farmers' Association 10/5/00.

institutions, Buddhism and Taoism have contributed to this. Hy Van Luong (1993) sees a re-emergence of kinship ties in solving problems and dealing with crises.

In the interviews I found that households were more ready to speak of formal assistance than informal. Households and local leaders mainly mention neighbourhood groups in the context of the mutual assistance organised by the mass organisations. It appears to be difficult to distinguish between the initiatives that rely on 'groups of households' and the ones organised by the mass organisations. The Women's Union, the Farmers Association, the Youth Organisation and the War Veterans Organisation have a 'government oriented' as well as a 'community' character. They have the role of mobilising for national goals concerning e.g. family planning and agriculture development. In disaster response however, they played an active role in organising mutual assistance and support based on the neighbourhood groups that meet and exchange experiences also under 'normal' circumstances. The Youth organisation/Red Cross organised teams to help people repair their houses. In Hai Tan, the Farmer's Association was also involved in forming neighbourhood labour teams for this purpose.[54] The Women's Union organised household food contributions. The War Veterans Associations had their own networks and mutual support funds. In Hai Tan commune, they mobilised a fund of 50 million dong (3500 USD) from members, for loans to other members in need.

Support for house construction

The Hai Lang district army section allocated labour to help with the reconstruction of houses. The commune army section in Hai Tan mobilised 60 people to help with the repair of houses[55]. Families who had lost their houses completely got one million VND (65 USD) in government support. The Vietnam Red Cross established a support program for people who had lost their houses, whereby the household would receive a metal frame for a new building (to make it stable, in anticipation of future hazards) and one million VND to construct a simple house on the frame. In Hai Lang 171 families received such support out of a total of 267 households whose homes had been competely destroyed. Village meetings decided who would get support for a new house. The program was directed to the very poorest and probably succeeded in this targeting as the buildings were too small (10 m2) for less poor people to be interested[56]. My experience is that community norms would not accept non-poor households to put up such a house. In addition, the local Red Cross volunteers could be expected to have a clear understanding of the status of those who received support. Two Red Cross volunteers helped with the house construction in each commune[57].

[54] Meeting in Hai Tan commune 10/5/00
[55] Mr Canh, Hai Tan army section 10/5/00

[57] Mr Cuong, Hai Lang Red Cross, October 2000

The commune clinics prevented spread of disease

Another part of disaster response was the distribution of disinfectants to purify the water, which all interviewed households in Hai Lang reported to have received from the commune clinic. The mass organisations were active in organising people to bury the dead animals to avoid the spread of disease. All households interviewed in Hai Tan reported to have taken part in this work. The head of the health clinic however, expressed the need to have a fund for remunerating the household labour that took part in this work[58], as households were keener to spend the time in recovering their own damaged houses, lost belongings and wet rice.

To sum up: As we have seen the disaster response from the authorities, local organisations and the public was immediate and comprehensive. The primary goal was the supply of food, basic necessities and shelter. I understand the organisational preparedness and capacity in disaster response as partly a legacy of the war, as well as the frequency of natural disasters in the area. The society has experience of handling crisis situations. The Confucian tradition of clear authority and lines of command may also contribute to quick decision making and action. Community norms of equitability contributed to that 'everybody' seemed to have received attention and support in the immediate disaster situation. The mass organisations, which sometimes are criticised locally for being too much of a channel for the agenda of the central government, fulfilled an important role in organising relief and mutual support. In a crisis situation like this, the tight relation between local government and local organisations appears to have been an advantage.

The mass organisations also played an important role alongside the cooperatives in organising the rehabilitation of production and community infrastructure, which is discussed in the following sections.

5.2 Support for rehabilitation of production

Continued heavy rains constrained recovery of rice production.

When the first phase of clearing up amidst the chaos of dead animals, damaged property and layers of mud was reasonably under control, the next worry was how to secure the coming rice season. The co-operatives and production groups held meetings to clarify the losses and the requirements for production. Delay in planting the next rice crop would result in shorter growth season and poorer harvest. The district authorities acted as guarantor allowing the cooperatives to sign credit agreements with supply companies for diesel and hiring extra pumps for the intensive drainage of the fields[59].

It was not only the flood water from the November floods that needed to be drained. There were continued heavy rains in December, January and February, so the drainage pumps had to work hard. People were out with their buffalos ploughing the fields although the water was still a decimetre deep. After planting the rice it rained

[58] Hai Tan commune meeting 10/5/00.

[59] Cooperative credit for diesel was repaid gradually from cooperative funds of irrigation and drainage fees that the farmers pay every season. Van Tri cooperative, Mr Dong 13/10/00.

again and both seeds and fertiliser were washed away. Some areas even had to be re-planted twice. The costs of drainage, replanting and re-fertilising the fields resulted in higher production costs than the income from the rice, according to the cooperatives in Van Tri and Phuoc Dien[60]. A district People's Committee report[61] states that the rains in January-February 2000 flooded 2547 ha of rice, of which 2000 hectares had to be replanted. 250 ha of dry land crops were destroyed. On 28 April 2000 there were heavy rains in which 300 ha of rice were destroyed completely and a larger area suffered partial damage.

The authorities were active in securing access to rice seed.

Access to rice seed was a big worry. As the floods hit seven provinces, there was a shortage of seed in a large part of central Vietnam. The People's Committee leaders at district and province level travelled in person around the country to secure contacts with seed suppliers in time for planting in January[62]. Seed was distributed to the farmers through the cooperatives as is the practice in many villages also under normal conditions. The state subsidised the seed with 50 percent of the price (2000 dong/kg) and the rest was a credit, which the farmers were expected to pay back after harvest.

In Hai Lang the seeds were the same varieties that they normally use, so difficulties did not occur in relation to seed varieties. Most of the seeds are supplied yearly from research stations and from farmers who specialise in the production of seed. Cau Nhi cooperative in Hai Tan commune takes pride in being able to produce and purchase their seed themselves. Some supplies, but not all, survived the floods[63].

Distribution of seed as a relief intervention has been criticised in other contexts for being undertaken without analysis of the real needs, leading to supplies that are not relevant (Sperling and Longley 2002). The critique points to research findings where farmers in many cases have been able to secure access to seed on their own, also after a disaster. The situation in Hai Lang however is different, as the cooperatives also under normal conditions have a big role in seed supply, coordinating farmers' requests for seed. Households in Xuan Loc told us that they normally order part of the seed through the cooperative, while part of it is from the previous year. In 2000, they relied on the cooperative for all the seed[64]. The cooperatives purchased fertiliser on credit from the district supply company. The district subsidised the credit so that the farmers did not have to pay interest[65].

[60] Van Tri cooperative 13/10/00 and Phuoc Dien cooperative 18/10/00
[61] In Vietnamese 4/5/00 Báo cáo tình hình PCBL năm 1999.
[62] Hai Lang People's Committee chairman, February 2000.
[63] Conversation with Mr Hong, the chairman of the Cau Nhi cooperative, October 2000
[64] Mr Le, Mrs Nghe 11/10/00
[65] Hai Lang Agriculture Section 11/5/00.

Large sums of state credit were provided, mainly for rice inputs.

The reinvestment in rice production was enabled by state credit through the Bank for Agriculture and Rural Development. Hai Lang district received 20 billion VND (approx. 1.3 million USD). It was intended as a one-year credit with 0.3% interest for the short-term recovery of production, mainly rice. In reality it could not be collected from the farmers until after a two year period. The credit was distributed on the basis of the area of household tenure of paddy land. The interviews suggest that the credit reached practically all the eligible households according to that criterion. Van Tri village received 230 million VND (15 000 USD) of credit, which was on average around one million VND (65 USD) per household (130 000 VND per/500 m2). The range of land holdings is from 2500 m2 to 8000 m2, except for the 23 fishing households who do not have any allocated paddy land at all. It was cash distribution, which meant that people could use it for other purposes as well as rice inputs. The interviewed households used most of the credit for the latter, but also for piglets, house repairs and for servicing old debts.

The decision to base credit allocations on the area of paddy land meant that the low land households received more credit than those in the hill land. The fishermen and others without allocated land[66] did not receive this credit at all. It was unclear to me, who actually took this decision. The director of the Bank for Agriculture, Mr Mai, said that the Bank regulations for the credit were that it should be distributed according to level of damage, need, and capacity to pay[67]. According to him, it was suggested by the district People's Committee that the credit should be based on area of allocated paddy land. Mr Tho, vice chairman of the DPC, said that this was only a basic principle, and that the commune People's Committee were entitled to distribute the credit as they found appropriate according to local conditions. He said that some of them had not understood this[68]. The principle for credit distribution was defended by Mr Tho in view of the urgency of rehabilitating basic food production. There was the expectation of further credit allocation for rehabilitation of income generating activities, including perennial crops and animal husbandry at a later point during 2000[69]. Allocation according to acreage of paddy land was also a matter of administrative convenience in order to facilitate rapid disbursement. I understand it as a reflection of the central role of rice in the identity of the majority in Vietnam, which may be the reason why it is sometimes 'forgotten' that there are groups of people whose main livelihood is not rice production.

According to the director of the Bank[70], the distribution of credit was based on lists over credit applications compiled by the commune People's Committee together with the mass organisations and cooperatives. From the figures mentioned in the household interviews there seems to have been an approximate correlation between

[66] Households without allocated land frequently cultivate land, which they rent from other farmers or from the cooperative.
[67] Interview 13/12/01
[68] District meeting 19/10/00
[69] District meeting 19/10/00
[70] Interview 13/12/01

area of paddy and received credit in most cases. Only in one case (in Van Tri) there was a clear mismatch. In this case the household claimed to have only 2000m2 of land, while they reported to have received 2 million VND of credit. According to the regulation it should have been around 500 000 VND.

For the majority of the population in Hai Lang district who have paddy cultivation as their main source of food and income, the tying of credit to area of paddy land resulted in a relatively equal distribution. The allocation of paddy land is based on number of members of the household. Some poor households may have lost their tenure in practice, temporarily or long-term, but they retain the formal certificate of the land. This meant that also very poor households received credit, while under 'normal' conditions they would have difficulties in receiving any[71]. Households who have less land than average are mainly newly established households, often the children of the farmers who received tenure in 1993, and who have established households of their own on the same area of land[72]. Cooperative and village leaders in Van Tri were concerned about the fact that newly established households have so little land. They also expressed the need to find a solution to the problem that the fishing community do not have any formal allocation of paddy land[73]. According to the interviews, the households, including those of the fishermen, and village leaders, see paddy land as the basis for making a living in the area.

The role of the cooperatives was crucial for state credit to be effective.

A complication concerning the 'flood-credit' was that many people had not yet paid the cooperative for the inputs used in 1999, which had been purchased on credit. The flood-credit was therefore in many cases used to pay for these outstanding loans first, in order for the cooperatives to be able to mediate the purchase of new inputs for rice production 2000[74]. The system used by many cooperatives in Hai Lang is that they buy fertiliser on credit from the district supply company according to farmer requests[75]. The input credit does not have to be paid back until the middle of November to avoid farmers having to sell their rice immediately after harvest in September when the prices are low. When the floods came on November 2nd 1999, many people had their rice stored in their houses, waiting for the market price to rise. When the flood took this rice, they used the state credit to pay back the loans to the cooperative for the 1999 inputs. This was common according to the staff of the Agriculture Section. The state credit was distributed gradually between January and March 2000, but inputs for the winter-spring crop were needed in January. With the promise of state credits arriving, the co-operatives were able to bridge that gap and buy inputs in time. The credit was thus necessary for the whole input supply system to function. Without it people would not have been able to pay the debt to the co-operatives who would have gone bankrupt. Similarly, without the co-operative input

[71] household interviews, cooperative leaders and staff of the Agriculture Section.
[72] Household interviews, cooperative leaders and staff of the Agriculture Section.
[73] Interview 13/10/00
[74] Household interviews and meeting with Van Tri and Phuoc Dien cooperatives October 2000.
[75] Most farmers take part in this system, although they can buy privately if they so wish.

credit, the state credit would have come too late to be useful in the winter crop after the floods.

As the credit was used to pay for costs incurred in 1999, it became a replacement for losses rather than an investment. Using credit to cover loss rather than for new income generation prolonged the period generating enough income to enable repayment. This issue is further discussed in the following section.

According to Wisner et al. (2004), one of the most effective ways of building more economically resilient communities is through micro-credit schemes being applied to disaster recovery in order to stimulate the reconstruction of small enterprises. They refer to the Grameen Bank 1996, which supported communities after flooding in Bangladesh by providing small grants for the repair and reconstruction of houses. After the 1998 floods, the Micro-Finance Institutes (MFI) experienced difficulties even in giving access to clients' savings (Nagarajan and Brown, 2000). Although Benson and Clay (2001) note that at least one quarter of aid is channelled through the MFI's in Bangladesh, Nagarajan and Brown still find that the MFI's had difficulties in accessing funds from the donors to provide recovery loans.

Twigg (2004) cautions us that micro-credit schemes are themselves vulnerable to situations of large losses. An important lesson from the 1998 Bangladesh floods was the need to protect the credit organisations themselves, as they soon found themselves critically short of funds when their disaster affected borrowers failed to make repayments. Twigg refers to a World Bank report 1999, which suggests that the micro-finance sector needed a cash infusion of 200 million USD after the 1998 floods. The practice of putting money aside into emergency reserves is becoming more widespread in areas with regular disasters. Micro-Finance Institutions and donors have begun to experiment with donor-backed reserves that can be released quickly in an emergency (ibid).

In the case of the Vietnam 1999 floods the state provided the credit. The floods covered seven out of Vietnam's 63 provinces, which represented a relatively limited part of the Vietnamese economy as a whole. State provision of credit was less vulnerable than NGO-organised micro-finance schemes when it came to coping with the extreme imbalance between credit needs and incoming payments in a disaster situation. This money came directly from government funds and was not intended to be a sustainable finance mechanism.

Re-investments in pig keeping failed because of the polluted environment after the floods.

Apart from recovery of paddy production, there was also strong support from the government and the mass organisations for recovery of animal husbandry, mainly pig and buffalo. The district People's Committee supported the re-establishment of pig keeping with credit of 200 000 VND (enough for two piglets), and the equivalent as a grant for poor households. Funds for this were taken from the state

'fund for employment creation'[76]. Practically all Hai Lang households keep pigs, as it is a good way of using household waste and agricultural bi-products. Pig keeping is especially important for the poor as a way of 'saving' for investments, paying school fees, repaying debts etc[77]. The Women's Union had its own funds for the re-establishment of pig raising. In each of the three studied communes the Women's Union distributed 50 million VND (3300 USD) equally to 100 households (0.5 percent interest/month over a two year period)[78]. Priority was given to women who took part in savings & credit groups (saving 5 000 dong per month (30 US cents). Nine such groups existed in Hai Chanh, and seven in Hai Thanh, with 20 women in each[79].

Practically all households interviewed had reinvested in pigs immediately after the floods. Unfortunately the animals were affected by rampant disease because of the polluted environment. The district veterinary services provided vaccinations, which in many cases did not have effect as the infections were already established. Lack of fodder for the pigs led to slow growth and more susceptibility to the many diseases[80]. According to the district Veterinary station, the contaminated environment was worst in Phuoc Dien village as it is on the most low-lying land. Reinvestments in pig keeping in the hill land area was more successful because this area was not as badly affected by disease due to the shorter time of water inundation.

Other constraints were the lack of draught power and planting material.

It was difficult to secure sufficient draught power for ploughing as many buffaloes had been lost in the floods. The Farmers' Association had credit funds for the re-investment in buffaloes, of which Hai Tan commune got 100 million VND (6 600 USD), which was allocated to 27 households with around 4 million VND each (0.6 percent interest/month over 3 years). Van Tri cooperative solved the immediate needs by hiring six small tractors, in order to plough the fields in time [81].

Households in the hill land village Xuan Loc have 2000-4000 m2 of paddy per household, partly in the lower areas of the village and partly in other villages in state-sanctioned arrangements to make sure that 'everybody' has paddy land. Apart from this they have hill land for sweet potato, cassava, groundnuts etc. The district Agriculture Section distributed seed and planting material for sweet potato, vegetables, beans and such short-term crops with a 50 percent price subsidy. Sweet potato is a very important crop in Hai Lang both for consumption and for fodder, but it was difficult to get enough planting material, which has to be fresh. Production was constrained by problematic weather when rains in April 2000 reduced the harvest of dry land crops with 50 percent[82].

[76] District People's Committee 15/5/00
[77] According to practically all interviewed households
[78] Women's Union in Hai Thanh 20/10/00, Hai Tan 10/5/00, Hai Chanh 12/10/00
[79] Ditto.
[80] Interview with staff of the Veterinary Station May 2000
[81] Discussions with the cooperative in May 2000
[82] Hai Chanh commune meeting 11/5/00

Most of the households in Xuan Loc had pepper plants and some households had fruit trees, which suffered damage. According to commune officials, 60 percent of the pepper in Hai Chanh commune was lost. In 2000 there were no special projects by the government or mass organisations for re-investment in perennial crops. Among the households interviewed in Xuan Loc, most people re-planted some of the pepper with seedlings from neighbours immediately after the floods. There was hesitance in the beginning about undertaking any major reinvestment, partly due to limited knowledge about how to get good seedlings, but also related to the risk[83].

Fishermen had to recover boats and nets with other means than state credit

In Van Tri village there are 23 fishing households who live on the banks of the O Giang river. According to the head of the fishermen's group, Mr Chay, many of them had to take informal loans with 3-5 percent interest per month to buy new nets and repair the boats[84]. Mr Chay was in particular difficulties as he, apart from the flood losses, also has other debts for hospital costs. He tells us: *We live right on the riverbank and our house was badly damaged by the floods. Our boat was damaged and we lost our nets and two pigs. Before the floods I had taken a bank loan of 2 million VND to buy nets. When I lost them, I did not know how to pay back the loan. Now I have borrowed 2 million privately to mend the boat and buy new nets. We could not get 'flood recovery credit' as we do not have paddy land of our own. We have an old bank loan of 4 million VND (265 USD), which was meant for fish cages, but we had to use it for hospital costs as my wife is sick with heart problems. We rent 1500 m2 of paddy land in Cau Nhi village. In 2000 it gave 300 kg of rice. The land is outside the dike system and therefore more exposed to heavy rains, so we often have crop losses. The fishing is the most important income and gives 10 000 VND (65 US cent per day). Two of our children still go to school, but our elder daughter left school in class 10 and helps with the fishing.*

Another fisherman, Mr Vach finds himself in a better situation. He was able to get a bank loan of 2 million VND (135 USD) after the floods to buy new nets and repair the boat. They also got a loan from the Women's Union of 500 000 VND[85].

When I asked the vice head of Van Tri cooperative why the fishermen could not get the state flood credit, he said that they were expecting an additional, three-year credit for recovery, which many households already have signed up for[86]. The expectations of such credit were exaggerated according to the director of the district Bank for Agriculture[87], as only a few hundred million VND were available for this purpose. According to him, the district People's Committee had prioritised using the state funds available (20 billion VND) for the general short-term credit.

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[83] Households in Xuan Loc October 2000.
[84] Interview 11/10/00
[85] Interview 11/10/00.
[86] Interview 13/10/00.
[87] Interview 13/12/01

To sum up:
The focus of state policies in the 1999 flood response was on support for rehabilitation of short-term production, especially paddy rice, vegetables and pig raising. The massive focus on paddy rice is based on the situation in which almost all households in Hai Lang have paddy as an important source of food security. Even poor households, who normally had difficulties getting credit, received it this time. This meant a bias in favour of the low land farmers compared to the hill land population and fishermen.

The fact that there are active co-operatives in Hai Lang, meant that there existed an organisational structure for the supply of inputs, the organisation of drainage, draught power etc, which enabled quick recovery of paddy production. Individual purchases would have been difficult as the floods affected such a large area (seven provinces).

Recovery of production was constrained by difficult weather conditions with continued heavy rains, which led to high production costs and lower harvest. Diseases in animal husbandry due to polluted environment caused the failure of many re-investments for replacement of lost animals. Production credit to the households was to a significant extent used to cover losses, which prolonged the period in which the households were indebted. The recovery took several years for the majority of households as will be discussed in section 5.4.

5.3 Rehabilitation of village infrastructure

Household labour contributions and state finance ensured rapid repairs of damaged infrastructure

Production in Hai Lang is highly dependent on infrastructure and the immediate restoration of dikes and canals was a priority both for the farmers and the authorities. The practice of household labour contributions to community works is well established in Hai Lang. None of the interviewed households questioned the practice, although in some parts of Vietnam the labour contributions have been made voluntary and possible to replace with monetary contributions. The labour contribution is normally 10 days per year for each able-bodied person (men and women) between 18 and 45 years old, and involves the maintenance and repair of infrastructure, mainly dikes and canals[88]. The fact that this number of labour days was exceeded was taken as an obvious consequence of the disaster.

In the areas of Vietnam where communal labour has been replaced by monetary contributions, there is an increased risk that the maintenance of protective infrastructure could be undermined, according to the experience of Adger (2000) in Xuan Thuy district, as well as of Miller (2003) in Tra Vinh province. They argue that it becomes difficult to make sure that the monetary contributions are reserved for the intended purposes.

[88] Mr Dao, Van Tri cooperative 9/5/00

In Hai Lang the tradition of organising joint labour efforts is strongest in the low land villages because of the cooperative management of irrigation and drainage of the paddy rice, which is a major part of people's livelihoods there. As explained to me by staff of the Agriculture Section, the cooperatives in the hill land villages are also fairly strong, but have less authority in organising joint activities compared to the low land.

Staff of the district People's Committee inspected the damage and prioritised funds. Hai Tan commune received 81 million VND (5400 USD) for repairs, of which Van Tri village received only 2 million. According to the chairman of Van Tri cooperative Mr Dao, the reason for this was that the road to Van Tri was under water, so the district inspection team never came to assess the damage there[89]. They did however receive financial support for investments in the following year.

Few opportunities for labour income in rehabilitation projects

In disaster response in other countries it is common to use paid labour in rehabilitation of infrastructure as a way of providing households with an income for coping. Although the World Food Program has had some 'food for work' activities in Vietnam, it is not common practice. Labour opportunities in local reconstruction were not significant sources of income in either Hai Lang or A Luoi district.

The rehabilitation of infrastructure that could be done by the villagers themselves was done without pay. For more advanced rehabilitation, or for the repair of infrastructure that was under district or province management, the authorities contracted companies, who in turn recruited the labour they needed. To some extent such employment opportunities were offered to the local population, but often the companies had their own workers[90]. Villagers in Van Tri and elsewhere complained even before the floods that it was difficult to compete with labour from other provinces. In 1998 I came across people from Ha Tinh province who were prepared to work in Hai Lang for 5000 VND per day (0.3 USD), which is below the norm of what is accepted by workers in Hai Lang.

In principle the Government promotes the provision of paid labour opportunities for local people on public works. Shanks et al (2003) refer to a study by MPI/UNDP (2003), which found that obligations to hire local labour are limited under both national and donor projects. The terms are frequently not specified or enforced in contract agreements, and there is often confusion over which works should be done with paid labour and which based on community contributions.

[89] Interview 8/5/00.
[90] according to staff of the Agriculture Section

5.4 Coping and Recovery

The previous sections in this chapter discussed humanitarian assistance, the collectively organised recovery of community assets and the government support that farmers received for recovery of production. The following two sections focus on how households coped with the situation of food shortage until production had recovered. How the households were able to solve the period of food shortage was vital for the continued recovery process. The section also continues the discussion of government credit policies and their importance for recovery.

Food shortage led to poor households on the low land taking informal loans at high interest

It was difficult to avoid a food shortage during the months before the harvest of rice in May-June of 2000. On the low land it is common, also during 'normal' years, for poor households to take informal loans as a way of bridging the food gap during the months before the harvest of the winter-spring crop. These loans are paid back in rice directly after harvest at 130-150 percent of the borrowed amount[91]. The problem with private loans was said (by the households interviewed) to be decreasing before the 1999 floods because of the increased availability of other sources of credit, but it increased significantly after the floods. According to the Agriculture Section, around 20 percent of households in the district had a food shortage during the 3 months before harvest in 2000[92].

Mrs H in Phuoc Dien village says[93]: *I bought rice to eat for part of the flood-recovery-credit. I cannot borrow from relatives as they are just as poor as I am. I borrowed privately (at 5 percent interest per month) to pay an old bank loan in order to get a new bank loan. I have interest payments on private loans of 250 000 VND per month, so it is very difficult to get enough surplus to invest in production. After the floods I bought new piglets twice, but they all died.*

Many of the household stories about the coping process in the low land villages were preoccupied with informal loans taken for food security. Experience from other countries suggests that poor households under stressful post-disaster conditions commonly increase their levels of borrowing. In Bangladesh borrowing food and/or taking credit for the purchase of food was by far the major coping strategy of the poor (del Ninno et al. 2001). An IFPRI study (2001) finds that approximately 11 percent of flood-affected households in Bangladesh were still taking loans from money-lenders in 1999 one year after the floods.

In Hai Lang the poor harvest in 2000 accentuated the problem. Also in subsequent years there were several seasons with crop losses due to heavy rains. A staff member of the Agriculture Section says that he is not so worried about households who

[91] E.g. Mr Bau, Van Tri 13/10/00
[92] Hai Lang district meeting 15/5/00
[93] Interview 17/10/00

'only' have food loans. These households will be able to pay back. It is worse for those who also have informal debts for other purposes, especially medical costs[94]. Such informal debts are more common in Phuoc Dien village, than in other villages in Hai Lang according to the staff. The cooperative leaders in Phuoc Dien[95] say that 30 percent in the village (40 out of 130 households) are very poor and have informal debts. Reasons for taking informal loans are, according to them, to pay back bank loans, to cover medical costs and for house construction.

The members of staff of the Agriculture Section suggest another reason why the loans in Phuoc Dien village become more of a problem there compared to elsewhere in the district. The loans are mostly taken from traders at Dien Sanh market and are more difficult to control as they are outside community social pressure.

In Van Tri village on the other hand, the loans were mainly taken locally, from better-off households in the community, and there is a degree of social pressure on these households not to claim excessive interest rates. There is however little open discussion about the problem. The Party Secretary of Hai Tan commune says that they have to look into the problem more closely, if informal loans really are as common as our interviews suggest[96].

Phuoc Dien village got special attention from the state Bank in order to avoid food shortages before harvest. Mr Mai of Hai Thanh commune Farmer's Association says that the Bank for the Poor provided the commune with 1.2 billion VND (80 000 USD) in 'pre-harvest-loans' for food, which was distributed to 540 households through the Association[97]. Household interviews suggest that this was not enough to avoid the problem of informal food loans.

District leaders expressed concern about the amount of informal lending going on after the floods. Mr Tho, the vice chairman of the district People's Committee, argued the need for special measures, to help people repay outstanding private loans. Mr Tho stressed the importance to reduce formalities in order to reduce poor people's hesitance to approach the Bank[98]. The director of the Hai Lang branch of the Bank for Agriculture also expressed the need for special agreements to solve the situation for the households who could not solve their debt situation on their own[99].

In the hill land village of Xuan Loc, people did not take informal loans for food after the floods. The difference is that many of the low land households have few other sources of income than paddy. They had little opportunities of earning an income for buying food in the period before the rice harvest. In Xuan Loc, people have more land for vegetables and other short-term crops. They have access to firewood, broom straw, and other minor forest products, which can be sold in the market. They also

[94] Interview 16/3/01
[95] Interview 17/10/00
[96] Commune meeting 14/10/00
[97] Commune meeting 20/10/00
[98] District meeting 19/10/00
[99] Interview 13/12/01

have more contacts and experience of working as day labourers for others. In all, the households in the hill land village have more sources of day-to-day income to solve the immediate food needs[100]. This is further discussed below.

The kinship networks are important sources of loans for coping. Many households mentioned loans from relatives as important for securing food needs. The kinship networks were insufficient, however, as the disaster affected almost everybody. Social relations for access to resources are discussed further in chapter 7.

Savings- and credit groups exist in all three of the studied villages in Hai Lang, organised by the Women's Union. A group is around 20 women, who saved 5000 VND (0.3 USD) per month each at the time[101]. Every month the sum of 100 000 VND is allocated to one of the women in the group. This enables women for example to buy a piglet or pay school fees. The funds were however too small to make any significant difference in coping with floods disaster.

The experience of coping with the 1998 floods Bangladesh is different from that of Hai Lang. del Ninno et al. (2001) find that formal credit through the micro-finance institutes had a relatively limited role as sources of credit for the flood-exposed households. Borrowing from friends, relatives and informal groups represented 58 percent of the loans. In addition there were loans from money-lenders. Beck (2005) emphasises a lesson from the Bangladesh floods 1998, which is the need to expand availability of subsidised credit. This is important to avoid a situation where poor households take expensive loans from money-lenders. Many poor households made distress sales of small livestock, which were difficult to recover later due to insufficient capacity of the credit institutions.

In Hai Lang, credit was available, but was aimed at recovery of rice production. As input costs are high, this absorbed large sums of credit. Gulli (1998) quoted in Pantoja (2002) argues that post-disaster consumption credit would be important to smooth consumption, avoid distress sales of productive assets and allow faster replacement of lost assets. Given the strong linkage between food consumption and labour productivity, research indicates that the poorest households can benefit greatly from consumer credit and savings, protecting household consumption, according to Gulli.

Employment creation in the rehabilitation work needs to be considered more carefully as an alternative to high levels of credit, as argued by Beck in his list of lessons learnt from the Bangladesh floods.

Informal loans for house construction is also a potential problem

Informal loans were not only taken for food, but also for housing. The middle income household of Mr N. in Van Tri village[102] took a bank loan of 3 million (1.05

[100] Household interviews and commune meeting Hai Chanh May 2000
[101] Since 2004, the sum is 10 000 VND per month.
[102] Interview 11/10/00

percent interest) and an informal loan of 10 million (630 USD) at 4 percent interest per month, to strengthen the house. Middle-income households can normally cope with informal loans to a higher degree than the poor, but it is still quite a risk. In Mr N.'s case it ties him to a monthly outlay of 400 000 VND (26 USD) to cover the interest.

The interviews show that many people were prepared to spend large sums of money on repairing and strengthening their houses. 7 out of 16 interviewed households in Van Tri took informal loans to invest in the house. According to the head of the cooperative, 30 percent of the village households were building stronger houses, partly with informal loans. The village leaders in Van Tri are very clear on the fact that support for house construction is a priority[103]. They were expecting state credit for house repairs, and households had already registered applications for a total of 500 million VND (330 000 USD). Such credits did not materialise however. Bank credit for house repairs was not available for ordinary villagers, only for government employees, who have a regular income. Also for the employees the credit amount available was limited to 12 million VND (around 800 USD)[104].

In Phuoc Dien village, the area most exposed to floods in the district, households had already invested in their houses during previous years. This had been done with informal loans, which remain a burden to the household economy. 4 out of 11 interviewed households had informal loans for house construction from before the floods. Mr Dang's family in Phuoc Dien used part of the flood recovery credit to pay interest on a private loan taken out three years ago when they built their house. The loan is 3.5 million VND (235 USD) with 2 percent interest rate, which is 70 000 VND per month. *We only manage to pay the interest, we have not yet been able to pay anything on the principal*, he says.

In the hill land village of Xuan Loc, several households sold assets to finance strengthening their houses, but it was not common to take credit or informal loans for house construction. The hill land houses are not quite as exposed to floods as on the low land. Among the households interviewed it was common to sell buffalo in order to invest in the house. According to the head of the cooperative, 70 percent of households in Xuan Loc have buffalo grazing in the hills[105]. Other households, like that of Mr Be and Mrs Binh, did not sell their five buffalo, even though they were in difficulties. They needed to save them for their six daughters' wedding costs[106]. Other households, like that of Mrs Nghe and Mr Le[107], did not have buffalo. Instead they sold their garden crops and animals: Mrs Nghe said: *We took a loan from relatives of eight million VND (530 USD) after the floods to invest in the house. After the autumn harvest we sold the rice to pay the debt. We sold groundnuts for 900 000 VND. We have harvested the tea bushes and cut down all the palm trees, and jack fruit, which gave 3 million VND. We have managed to pay 5 million VND*

[103] Mr Dao 10/5/00 and Mr Cong 13/10/00
[104] Interview with the Bank director 13/12/01
[105] Interview 25/5 2004
[106] Interview 11/10/00
[107] Interview 11/10/00

of the loan. We have sold almost all the rice, so in January we will have to take loans again. We will apply for bank credit through the cooperative. Next year there will be less income. We will have to wait a few years till the pepper bears fruit again.

The standard of the house is normally a fairly adequate indicator for the household economic situation; but after the floods, the house can give the impression that the family has a more stable economy than is actually the case. People, who did not seem able to afford it, still took loans to build brick houses. According to staff of the Agriculture Section, there are several households in Hai Lang who have relatives abroad, who can send financial support in urgent situations, and who contributed to house construction.

Both the vice chairman of the district People's Committee and the representatives of the mass organisations stressed the need for long-term subsidised credit for housing. Beck (2005) in his evaluation of lessons to be learnt from the Bangladesh floods 1998, also calls for support for reconstruction of housing. Beck considers the lack of donor attention to housing to be remarkable considering that damage in this area was extensive.

People still kept their children in school despite difficulties

The interviews suggest that very few pupils dropped out of school as a consequence of the floods. This is also confirmed by Mr Doi of the district Education Section. He reports that teachers and students worked extra hours to catch up with the time lost because of the floods, and helped to restore destroyed equipment, furniture and books[108]. Mrs Hiep in Van Tri village[109] has a teenage daughter and a newborn baby. She lost two big pigs, 20 chickens and 300 kg of rice, which was all she had. She also lost the goods in her small shop and one million VND (65 USD) were swept away. "*My first priority is to be able to support my daughter through school. She is in upper secondary school, grade 10 now*." she says. Mrs Hiep has a poverty card, which entitles her to a reduced school fee, but it is still 600 000 VND per year.

The hill land households have a patchwork of sources of income for coping.

Mr Duoc's family, Xuan Loc village[110]: *I borrowed 200 000 VND (13 USD) from the district fund to buy piglets, but we had to use the money for medicine instead. We got 700 000 VND (47 USD) flood-recovery-credit, which we used for planting rice and cassava. I collect firewood for about 10 days per month, for which I can get 10 000 dong (0.7 USD) per day, to buy food. I do day- labour for ca 10 days per month, in the brick industry, or for other farmers in the commune. Our daughter in Ho Chi Minh City returned after the floods to help the family, as my wife is chronically sick and cannot work.*

[108] District meeting 15/5/00
[109] Interview October 2000
[110] Interview May 2000

Normally, Mr Duoc's family has their main income from pepper and fruit trees. When these were lost they became more dependent on collecting firewood and doing day labour for others. This was part of their livelihood also before the flood, but has now become vital. Mr Duoc's story shows the importance of labour in the coping process. He even had to call back his daughter from work in the textile industry as her assistance was needed at home in this phase. Health problems in the family are a constraint to recovery, as it absorbs resources that could have been used for income generation.

People in Xuan Loc village have some paddy land, but too little for subsistence, so there are established practices of earning an additional income from an array of other activities. Day labour is also important in the 'normal' livelihood of poor households here, and such opportunities did not decrease with the floods[111]. Another type of income opportunity comes with the proximity to the market centre in My Chanh, where several households in Xuan Loc sell products. Mrs Nghi went to the market to sells spices every day, with an income of around 5 000 VND (0.3 USD) per day[112].

People in the low land villages did not have the same opportunities for day labour as those in the hill land. Staff of the Agriculture Section explained that the main opportunity for day labour in the low land economy is during the rice harvest. This was of course not yet available during the months of food shortage before harvest. The 'low-landers' cannot really compete with the 'hill-landers' for day labour, as such opportunities are often dependent on having a connection with the people offering jobs. Farmers in the hill land village have more such contacts, as it is part of their regular livelihood strategy to supplement farm income with income from day labour contracts.

Labour migration to other provinces is common, but there are limited opportunities during the spring season. It is easiest to find work during the summer and autumn, for example in the coffee harvest in the Central Highlands. Contacts for seasonal work within the province are sometimes brokered by the authorities. In Phuoc Dien village many people travel to do seasonal labour in the mountain district of Huong Hoa in Quang Tri province[113]. This was not available during the spring of 2000, when households would have needed it most. In the autumn of 2000 there were however around 100 people (from a total of 550 households) who had gone for seasonal labour migration, according to staff of the commune Women's Union[114].

The conflict between either using the family labour for migration or investing in the production at home could be seen in Mrs Manh's case in Phuoc Dien village. The family that remains in Phuoc Dien has very little labour capacity now (2002) that both her sons have moved to Huong Hoa to work in the 'new economic area'. Mrs Manh's husband is handicapped, so they hire labour to manage their rice production.

[111] Village discussion 12/10/00
[112] interview 11/5/00
[113] Phuoc Dien cooperative leaders December 2001 and June 2004.
[114] Commune meeting, Hai Thanh 19/10/00

We have very low surplus from the rice production, but we still continue, because I don't know what else I would do; she says. When I return in 2004, the village leader tells me that Mrs Manh and her husband have moved to their sons' house in Huong Hoa[115].

Several of the interviewed households (11 out of 43) have a son or daughter working in the industry in Ho Chi Minh City, who send back welcome remittances. Mr Cap in Van Tri has four children. Two daughters are working in the textile industry in Ho Chi Minh City. They send back around two million dong (135 USD) per year.

According to staff of the Agriculture Section, a number of families have relatives abroad, mainly in the USA and in Germany. Most commonly, the relatives support larger family investments like the construction of a beautiful grave for the parents, or financing weddings. The time of the disastrous floods was a situation when many relatives sent support for example for reconstruction of the house. A poor household in Xuan Loc receives remittances from Germany, which makes a big difference for their livelihood possibilities. The relatives have previously mainly sent them money for the children's schooling. When I visited the family in 2002 they were preparing to build a brick house with the help of remittances. Their daughter in Ho Chi Minh City sent back a bicycle and clothes for the children after the floods.

Firewood collection and tree planting contibuted important income.

Xuan Loc, and the other hill land villages in Hai Lang have some access to forest resources. The natural forest in Hai Lang belongs to and is managed by the state. The villagers are allowed to collect firewood, as long as it is dead branches on the ground. For the planted forest, firewood can be collected after agreement with the tenure holder[116]. According to Hai Chanh People's Committee[117] there was a lot of firewood to collect in 2000 in connection with clearing the bush to prepare for tree planting as well as where trees had been harvested. Collecting firewood for sale was a source of income for many families in Xuan Loc village, which became very useful during the post-disaster period. 9 out of 16 interviewed households referred to income from firewood. It is referred to as hard work and often far away. The low land households who said they collected firewood in the hills, said it was only for home consumption, not as an income.

A German donor agency had started a program for tree planting in Hai lang district in 1999. This provided a small but regular income for many households in the hill land villages during the difficult years after the floods[118]. According to the head of the cooperative, 50 percent of the households had tree planting contracts. 6 out of 16 interviewed households had received contracts of between one and two hectares per household. One household, however, referred to a villager who had received 13 hectares of forestland for planting and contracted others as labour to manage it.

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[115] Household interview November 2002 and village leaders May 2004.
[116] Forest staff of the Agriculture Section
[117] Commune meeting Hai Chanh 11/5/00
[118] According to the village leader and households interviewed.

In October 2000, Mrs Hy and Mr Thuong, a poor family in Xuan Loc, were happy because they had just received the first payment of 300 000 VND (20 USD) for having planted 1.8 ha of forest. "*We will get 1.6 million VND/ha for seven years of tending. Then we will be able to harvest the wood and sell it to the factory in Da Nang. There are many price levels, but it will be a good income*" says Mr Thuong.

Only a few villages have significant income from handicraft

There are not so many villages in Hai Lang who have the tradition of handicrafts. A few villages like Phuong Lang have developed certain skills over many generations, and are famous for their products. In the case of Phuong Lang it is rice pancakes and funeral dresses. For the more common skills like making hats, the craft is too widespread, so the price is low. Mrs No in Van Tri village, made hats and earned an income of 3000 VND per day after the floods. This was useful as an emergency income, when every dong was welcome. Later Mrs No stopped making hats because of the minimal income[119].

Recovery situation 2001-2002

In December 2001 many of the households interviewed were still in difficulties, largely due to seasonal risk, i.e. a number of smaller shocks during the recovery period. The spring harvest of 2001 had been bad. It rained heavily in May, just before harvest, so the quality of the harvested rice was low land fetched low prices. The chairman of Hai Thanh commune reports that they had been able to harvest 70 percent of the rice, before the rains came. The remaining 30 percent was largely lost. They had also lost 80 percent of the dry land crops[120]. The head of the Van Tri cooperative reports that they lost all the dry land crops in the May rains.

Mr Dang and Mrs Suong in Phuoc Dien village[121] have 1 ha of paddy, which is a lot compared to other villages in Hai Lang[122]. They have no land for dry-land crops and only a small garden.
"The autumn harvest in 2000 was alright, says Mr Dang. *We got 4.5 tons and around 1300 VND/kg for the rice. We could pay back the co-operative for the inputs and we paid for the drought power. But we did not get any surplus because of the high costs during the spring crop. The spring harvest in 2001 was bad because of the heavy rains in May. We only got 3 tons with low quality and only 1000 VND/kg[123]. The autumn harvest was alright, but the price was still low, and we are still in debt to the co-operative because of the bad spring harvest."*

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[119] interview October 2000
[120] interview 23/11/01
[121] Interview December 2001
[122] An average household holding of paddy land in the low land communes of Hai Lang is around 0.5-0.7 hectares. Land holdings are bigger in Hai Thanh commune because of the higher risk of flooding.
[123] Normally the price varied between 1200-2000 VND/kg during the past 10 years, according to the Agriculture Section.

Although paddy cultivation gives a far from stable income, households who have too little land often try to increase their access to rice by renting paddy land from relatives or bidding for land through the cooperative[124]. Sometimes the land that is rented out has a less secure irrigation and drainage situation, and is therefore a higher risk. Mr T. in Van Tri village rents extra land in the neighbouring village[125]. He says: *We have 3500 m2 of own land, but it is not enough for food security so we rent 2500 m2 of paddy land from relatives in Van Quy village. The rent is one ton of rice per year. The spring crop gave 1250 kg, but the autumn crop only gave 500 kg as the land is sensitive to drought and there were a lot of insects. We owe our relatives 2 tons of rice, but without interest.*

The untimely rains of 2001 were a bigger problem on the low land than the hill land. Mr Thuc, from a middle-income household in Xuan Loc, said that the harvests had been better in 2001 than the previous year, on average 4.8 tons/ha[126]. Mr Thuc says that his household had more or less recovered after the floods. They had sold four pigs to pay the debts. They had expanded groundnuts and cassava production and bought 100 ducks. They had also bought a buffalo, but it died. According to Mr Thuc his household economic situation is very dependent on whether they are successful or not with animal husbandry. His biggest fear with floods is the risk for animal husbandry, both of losing the animals and losing the fodder production[127]. Staff of the Agriculture Section agreed with Mr Thuc that success or failure in animal husbandry is a major determinant of success in the household economy.

Mrs Nguyen in Phuoc Dien village[128] finds that her situation is better in 2001 than the previous year. She got a 'Bank for the Poor loan' to raise pigs, and has managed to pay her old debt of 5 million VND (for hospital costs). Other households have continued to have difficulties with animal husbandry. In November 2001 Mrs T. in Phuoc Dien village, had just reinvested in 4 pigs again. The previous pigs had died. She says: *We borrowed 2.5 million VND privately at 2.4 percent interest rate and invested in 3 pigs and 50 ducks, but they all died after a month. We had vaccinated, but it did not help. Before the floods, animal husbandry was alright, but after the floods it has been difficult.*

Many households rely on income from family members who migrate for work, especially during flood season. In Phuoc Dien village, Mrs Hue's husband and son are both working in the forest and coffee harvesting in Khe Sanh (Huong Hoa district of Quang Tri province) in 2001. They visit home every 2-3 months. Mrs Nguyen's son is working in the coffee areas in the South. Mrs Lieu's son worked in Khe Sanh last year, but this year he became sick and has gone to Ho Chi Minh City for health care. She has relatives there, so the costs have been limited to 1.6 million VND, but it has still meant taking more informal loans in order to manage[129].

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[124] The system of bidding for cooperative land is further discussed under chapter 7.
[125] interview November 2001
[126] Interview with Mr Thuc 22/11/01
[127] ibid
[128] Interview 11/12/01
[129] Interviews 11/12/01

The household health situation is a factor, which seems to be of critical importance for resilience to shocks. The household interviews in 2002 showed that some families felt that their situation was worse now than before the floods. These families had the common factor of family members with chronic health problems.

Mr Dang's family in Phuoc Dien, are vulnerable even without disaster floods. Their biggest problem is their high costs for medical care. He says: *In October 2000 we got a loan from the Bank for Agriculture of 3 million, which we used to pay back a private debt which we took in 1999 to cover hospital and medical costs for our daughter. All three children have diseases related to the"agent orange chemicals" in my body from the war, which make them lame if it is not treated. The oldest child can hardly walk. We have a "poverty reduction card" which reduces costs by 50 percent, but the costs are still very high.*

Households who rely on day labour as their main income have more difficulties in recovering than the farming households. Mr Duoc, in Xuan Loc village, used to have an income from pepper, but now his main income is from day labour: He says: *My situation is worse this year (2001) compared to the previous year. The rice is already finished. I have borrowed money to pay back input costs to the cooperative. I do not have pigs now; I sold them before the flood season to pay the school fees for my four children. My main income is from working for other farmers. I have not got a poverty card from the district authorities, and can therefore not get a reduction in school fees and hospital costs. We cannot afford an operation for my wife, which would cost 7 million VND (435 USD).*

According to the village leaders, Mr Duoc's household is poor. The village head says that there are 15 poor households in the village, but only seven of them are registered by the district to get poverty cards[130]. Such discrepancies can depend on differences in the definition of who is poor between the village and the district level. There is also a district quota for how many cards can be registered.

It was difficult for many households to pay back the flood-recovery-credit.

The time period for the 'flood-recovery-credit' was at first set at one year. It was however not possible to demand a repayment of the credit after one year, and it was prolonged to two years and collected in January 2002. This was still difficult for many households. Animal husbandry had more or less recovered by then and people could sell pigs to pay the loans. A few households said they would take private loans in order to pay the bank. In Van Tri village there were rumours that the electricity would be turned off if you did not pay. In fact that did not happen. According to the Bank for Social Policy, there were, in 2004, still a number of households in the district who had not yet been able to pay the loans back[131].

Mr Duoc in Xuan Loc was, in December 2001, worried about his loans: *I do not have any source of income to pay back the 'flood-recovery-credit'. I will have to*

[130] Interview 22/11/01
[131] Interview 29/5/04

borrow privately in order to pay. In addition I owe the co-operative 800 000 dong for rice inputs for 2001, which I also do not know how to pay. My situation is not improving, it is getting worse gradually. Four children in school cost a lot and we have lost our main sources of income from the pepper and fruit trees.

Many households interviewed expressed the wish that the paying-back process would be spread out gradually, as it would take a long time to generate a surplus from which to pay back. With the low level of income generation in the years after the floods, several households said that they had almost as great difficulties to pay back the credit two years later, as they had directly after the floods.

The state recovery-credit seems to have been an important safety net for people in Hai Lang district. But credit as a replacement for losses may not be an ideal form of support. Some kind of insurance would be preferred, but insurance against losses in natural disaster is difficult, as discussed by many authors (Dercon et al. 2005). There is an international discourse about possible ways how to make use of insurance for post disaster recovery. At present insurance is a very limited part of the Vietnamese rural economy. The concept of insurance is more connected with social insurance[132], rather than insurance of property and production. Insurance is further discussed in section 8.5

Old debts to the Bank were prolonged

There was also the problem of old credit which had been taken before the floods to invest in e.g. animal husbandry. When the animals were lost in the floods, the credit became difficult to pay back. According to the vice head of Van Tri cooperative, 90 percent of households in the village had old bank loans at the time of the floods, on average 2-3 million VND per household[133].

The national regulation was that the state would cancel bank debts if the investment loss in the floods exceeded 80 percent of the loan value. In Hai Lang district very few households were given debt cancellation. The Bank was readier to grant prolongation of the loan period, than cancelling the debts. According to the Bank for the Poor in Hai Lang district, 37 percent of the people who received loans before the floods had not yet been able to pay back in 2002[134]. In 2004 the figure was 20 percent[135]. The Bank prolonged the debts year by year, on an individual basis, in assessment of the household capacity. Household interviews suggest that it was not difficult for poor households to get the credit prolonged.

Mr B. in Phuoc Dien village says[136]: *I lost two buffalo – that is the worst thing about the flood. They were bought on credit, and I will not have the possibility to buy new*

[132] The state owned insurance company handles pensions, health insurance and a savings system for future education, according to district staff.
[133] Interview 13/10/00
[134] interview 13/12/01
[135] Bank for Social Policy 29/5/04
[136] Interview 17/10/00

ones. Together with an old private debt of 1 million, my debt is now 6.3 million. I used the 'flood-credit' to pay back a debt to the cooperative, but now (October 2000) I have a new cooperative debt of 1.3 million that I do not know how to pay. The rice harvest was very poor, only 1.5 tons, because the rats ate the crop. I bought four pigs after the floods, but they died.

Prolongation of the loan period enabled some households to focus their resources on other things, like reconstruction. A household in Van Tri comments: *We had a bank debt of 6.6 million, which should have been paid back at the time of the flood. When the repayment was postponed, we could use that money to repair the house instead*.

In many post-disaster situations the inability of people to pay back their loans has put a considerable strain on the banks, as in the example of the Bangladesh floods 1998 (Beck 2005). In Hai Lang, the bank continued to operate normally. According to the director of the Bank for Agriculture in Hai Lang, Mr Mai[137], the bank could continue with 90 percent of its normal level of lending, despite the outstanding loans. The Hai Lang branch borrows money from the Central Bank at national level to be able to postpone household repayment of debts.

From 2002 new bank loans were granted even if the old debts were not yet paid.

In 2001 the director the district branch of the Bank for Agriculture stated that new loans could not be provided to households who had not yet paid their old debts[138]. In many interviews people expressed worries that they would not be allowed to take new loans, which would leave them in a situation of very limited means of income generation. The first two years after the floods this seems to have been a problem for many households, not only for the poor. Regulations with the Bank for the Poor demanded that the whole group (each group between 10 and 20 households) have to pay back before new loans can be issued. From 2002 onward, the availability of credit has however increased, and both the Bank for Agriculture and the Bank for the Poor have tended to grant new loans despite old debts[139].

Mrs Hiep in Van Tri was very worried in 2001 because some of the others in her 'poverty group' had not paid back to the bank. In 2002 she however received a loan of 2 million from the Bank for the Poor, despite the failure of some in the group to pay. She used it for pig raising and was able to sell 3 pigs that year, and for 60 ducks, but she has not invested again in the shop that was lost in the floods. *Many more people are trading now. I do not dare to take loans to start up trading*, she says.

The need for funds after the floods has been much broader than only for income generation. Households needed loans for food, reconstruction of their houses and

[137] Interview 13/12/01
[138] ibid
[139] household interviews and Bank for Social Policy 29/5/04 (which is the successor of the Bank for the Poor, from 2003)

replacement of lost property. Before 2002 the Bank would not have issued loans in a situation were it was likely to be invested in anything but income generation. In June 2003, the Bank for the Poor was closed and their function was moved to the newly established Bank for Social Policy. The district manager of the Hai Lang Bank for Social Policy expressed an understanding that households needed to use credit funds more broadly, as long as the main part is for income generation[140].
Some poor households have been able to reduce their private debts with the help of bank credit and now have a better chance of gradually recovering their household economy. Others still had serious debt problems in 2004. This will be further discussed below.

Twigg (2001) refers to research which suggests that it is common for households to take loans which are primarily invested in productive enterprises that generate income, but are also used to cope with crises that threaten livelihoods. After a disaster, it is common to use credit to replace lost assets. Twigg refers to Wright et al (1999) who found that credit funds are often allocated flexibly within the household for different needs, including house repairs.

The better-off households seemed to have had to wait until 2002 before they could get back to serious business again, with the help of credit. Mr Toan's and Mrs Nghi's family in Xuan Loc suffered similar losses to the others in the village; losing their pigs, rice, garden crops and fruit trees and also had difficulties the first year. Their main income however comes from a tractor and a rice mill, which also were damaged during the floods. Mr Toan says: *In 2002 we got a bank loan of four million VND (260 USD), which we used to pay back the flood-recovery-credit (1.5 million), to repair the small tractor for ploughing and to construct a drying yard for the rice. Now we have a stable income of a few million per year from ploughing services on contract with the cooperative,* says Mr Toan.

The situation of better-off families can equally be threatened by the flood losses, but it did not appear to be the losses in themselves which cause money worries, but the combination of other difficulties, like health problems. Mr Cap in Van Tri tells us: *When the floods came, parts of the house collapsed. We lost 8 tons of rice, 50 kg of pepper, 4 large pigs and a young buffalo. We still have one buffalo. We have 1.5 ha of rice and 500m2 of other agriculture crops (potato, beans, sesame and pepper). It is only 0.5 ha of the paddy land which is allocated to us. 1 ha of land we rent from the co-operative for 4 tons of rice per year.*

We raised 4 pigs after the floods. We got 2 pigs from relatives, and 2 pigs we bought with the help of the Buddhist society who gave us 150 000 dong (10 USD). 2 pigs died from disease. Vaccination did not help. We have high hospital costs, because my wife is sick. Our medicine costs are six to eight million VND per year. I think it will take 3 years to recover to the level before the floods, mainly through rice production. Animal husbandry involves too much disease, so we do not consider that yet.

[140] Interview 29/5/94

2002: This year is a better situation than before and we have enough to eat. We managed to get a bank loan of 6 million VND recently, despite an old bank debt. We bought a boat for 2 million and used the rest for renovation of the front of the house. We have also bought 2 buffalos. In 1999 we had 2 buffaloes and could plough almost 3 hectares. We rented a lot of land in My Chanh that year.

Mr Cap's family in Van Tri village has a lot of labour and drought power. In 1999 they had rented extra paddy land and had 10 tons of rice in the house, when the floods came. The family has continued to bid for additional paddy land as business, despite the risks, but their household economic situation is not stable. They have loans for house repairs and the re-establishment of their large-scale rice production, and are dependent on good harvests. They also had high medical costs for Mr Cap's wife during many years, which limits their development.

The recovery situation 2004

The head of Van Tri cooperative[141] says that 10 households in the village are still poor in 2004, and have poverty cards. The increased availability of bank credit has made it possible for many households to pay back their informal, expensive loans, he says. 160 (out of 230) households in the village have received bank loans. 10 households are however seriously in debt both to money-lenders and to the cooperative, according to the head. Paying the debt to the cooperative is normally the first priority, because of the sanctions. The cooperative can make a temporary claim for a third of the land of a household who fails to pay its debts, and rent it out to other households. The income from the rent goes to repaying the debt. A total of two hectares have been claimed from the 10 indebted households in Van Tri in 2004. In 2001 it was 'only' 6 households who were in this situation.

In 2001 there were 20 poor households in the village, according to the head of the cooperative[142]. The decrease to 10 poor households is partly because some of the poor were among the 26 households who have moved and resettled in Khe Sanh, in Huong Hoa district in the mountains. Resettlement is further discussed in section 8.3.

The head of the fishermen's hamlet in Van Tri says that almost all families in the hamlet now have a good income from fish raising and have been able to recover well. In 2003 the district Agriculture Section contracted a trainer from the province Department of Agriculture to come and hold courses in fish keeping in cages. This has so far been successful. The head himself, Mr Chay, however has a more difficult situation because of the debts for hospital costs, which are accumulating and makes it very difficult to get a stable livelihood[143].

[141] Interview 28/4/04
[142] interview 22/11/01
[143] interview 28/4/04

In Phuoc Dien village, the situation has not improved much according to the head of the cooperative, Mr Tram [144]. 40 percent of the households still have informal debts. 10 households have resettled in Khe Sanh. The costs of rice production have increased, as the state subsidies on fertiliser have been removed. The fertiliser price has gone up 50-100 percent, which means a total of 1.6 million VND per hectare for fertiliser. According to Mr Tram, households still use the same amount of fertiliser as before. He says there is no alternative if you want to have a decent harvest. The hope for change lies in expanding the area of fish raising and planting lotus in the paddy fields. In 2004 there were 6 hectares of paddy field in the village converted in this way which had been successful. Another 30 hectares are about to be converted, with state and NGO support, according to Mr Tram.

To sum up: The period of food shortage in 2000, in the months between relief supplies and rice harvest was difficult. It was more difficult for low land households than for the people in the hill land villages, as apart from rice there are few alternative sources of income on the low land. Poor households took informal food loans with high interest, causing debts which threatened to burden the household for many years. For people in the hill land villages, the access to firewood and other minor forest products to sell was vital for coping. The hill land households also had a greater range of contacts for day labour and trading at the nearby market, than was the case for the low land villages studied. The hill land households lost long-term income from perennial crops like pepper and fruit trees however, which caused a loss of income for many years.

The first two years after the floods were difficult for most people in Hai Lang. Repeated seasonal stress, causing reduced harvest, prolonged the period of recovery. In 2002 the situation had improved for many households, due to the recovery of animal husbandry production and the increased access to bank credit. The households who continued to be in difficulties tended to be those who had other additional problems, like poor health, causing lack of labour and high costs for medical care.

The role of the banks was vital in recovery. The prolonging of old bank debts and increased access to credit from 2002 provided conditions for households to recover their income-generating activities. Normally the Bank for Agriculture and Rural Development operates on a commercial basis, but this time the state stepped in and provided the possibilities for the bank to prolong the repayment of old debts, and continue to issue new credit. The establishment of the Bank for Social Policy reinforced the policy of subsidised credit as a tool for social security for the poor.

[144] interview 28/5/04

6. Humanitarian response, coping and recovery, Hong Ha commune

In this chapter the process of disaster response and recovery in the mountain commune of Hong Ha is discussed and compared to the process in Hai Lang district. The disaster response was slower, as the Vietnamese society has more routine regarding floods disasters on the low land compared to those in the mountains. The massive credit support that was provided in Hai Lang was not provided in Hong Ha, with the motivation that Hong Ha has less market oriented production. The government however channelled large funds to the rehabilitation and strengthening of infrastructure.

Policies for watershed protection have led to a very limited access to land for food production for the population in Hong Ha. Households had to cultivate marginal areas with low productivity and high risk, to solve food needs after the floods, but did not return to practices of swidden cultivation to any significant degree.

6.1 Humanitarian assistance

The disaster response of the national and provincial state was not as prompt in the mountains as in the low land, and more depended on the initiatives of the commune and district leaders. Hong Ha commune was isolated as the road to the district town was cut off by landslides and the telephone lines were down. Already on the third day, although it was still raining heavily, the commune leaders Mr Hua and Mr Nam walked the 23 km in deep mud to the district centre to inform the district leaders of the situation and to ask for help. The district leaders in their turn had to mobilise in order to get access to one of the few helicopters available in the province for delivering relief[145]. Hong Ha was reached by the first helicopter with food aid on the 7th day after the floods.

When relief supplies started coming in it followed similar principles as in Hai Lang. Rice, noodles, clothes etc were distributed equally, with 8 kg rice/per/month[146]. At a village meeting in Pa Rinh[147] people acknowledged that everybody had received between 60-150 kg rice per household from the state/Red Cross deliveries. Poor households in Pa Rinh group discussions however, felt that the support should have been concentrated on the households who needed it most[148].

When the relief supplies subsided around March, the leaders of the commune People's Committee continued to mobilise support. They reported to have visited

[145] Meeting with A Luoi district People's Committee 17/5/00
[146] District vice chairman 17/5/00 and household interviews
[147] Village meeting 19/9/00
[148] Group discussion 17/9/00

every organisation they could think of in Hue to ask for food relief. According to their own statements[149] they succeeded well and were able to secure basic needs for the whole commune population (198 households) until the harvest in June. This was also the picture received in the household interviews.

Just as in Hai Lang, the mass organisations played a large role in organising mutual assistance. For example, the commune Women's Union organised household food contributions groups. Households contributed rice and 5000 dong (0.3 USD) per household to a fund, which was distributed to people in need[150].

Mass organisations in Hong Ha tend to have a more local (commune) character compared to Hai Lang. They do not have as much contact with the district level organisations. In Hong Ha the villagers were critical of the fact that there was so little physical presence of the district Women's Union staff in the village after the floods. They had however received rice, milk and schoolbooks from them[151].

In Hong Ha there is no formal practice of yearly labour contribution. In the interviews, households still seemed to see it as natural to take part in the repairs of the damaged infrastructure. Hong Ha commune has never had cooperatives as this practice never took root in the mountains. Staff of the Hue University of Agriculture and Forestry working in Hong Ha describe it as a socially tight community, which is helpful when common efforts are needed in disaster response[152]. They have had to stick together and rebuild their livelihoods under difficult conditions several times, as they have had to move first as a result of the war and then because of resettlement policies. They are also in a fairly isolated location with 23 km to the district town. These factors may have stimulated efforts at self-help.

6.2 Support to the rehabilitation of production

Support to rehabilitation of production focused on distribution of seed. The enormous labour efforts needed to recover land inundated by stone had to be performed manually by the householders themselves.

Seed distribution was the main state support for rehabilitation of production

In order to improve access to food within a short time period, the district Agriculture Section distributed seed for vegetables. Partly they were new types of vegetables that people had not been planting and eating before, such as pumpkin, squash and new bean varieties. Households said that the vegetables had been important and functioned well, but that production of beans was difficult. The local beans were lost in the floods, and the variety that was provided was attacked by insects[153]. Hybrid

[149] Commune meeting 16/9/00
[150] Meeting in Hong Ha commune 18/5/00
[151] Pa Rinh group discussion on roles of different organisations March 2001.
[152] Interview with Bao and My of HUAF September 00.
[153] Household interviews September 2000

maize (usually called 'bioseed' in Hong Ha) was distributed intended for animal husbandry production and not for eating. It is harder to digest than the local maize but according to the Pa Rinh village head, Mr Duong[154], many people still ate it after the floods.

After the floods the district Agriculture Section provided the Hong Ha households with rice seed. Mr Duong thinks it was TH30 for the winter crop and Khanh Dan for the summer crop, but he is not sure because he has not used them before. According to staff of the Agriculture Section[155] the need for seed provided a good opportunity to try out varieties which ripen quicker and thus reduce the risk of exposure to the autumn floods. In the spring season there were no problems, but in the autumn season there were a lot of insect attacks according to the households interviewed[156]. There are no regulations for risk sharing in cases where the Agriculture Section proposes to the farmers to test new seed varieties. This could become a sensitive issue, especially in post-disaster situations when people are particularly vulnerable to crop losses.

Remington et al. (2002) are critical of donors who insist on the procurement of improved varieties and certified seed as the base for relief distributions, instead of building on the strengths of existing local seed selection and production practices.

According to staff of the Agriculture Section it is a general problem that there is so little research on local seed varieties from mountain conditions. Most of the seed comes from low land rice institutes. The staff stresses the need for more research on varieties suitable in the mountains[157].

The state invested in significant upgrading of infrastructure, not only repairs.

A Luoi district got significant government support for reconstruction. During year 2000 the district received 3.5 billion VND (230 000 USD) from the state programme "135", as compared to the 1999 budget of 150 million VND (9 500 USD) [158]. Program '135' is a state poverty alleviation program, which has mainly focused on upgrading of infrastructure in the poor mountain communes. The vice chairman of the district People's Committee stressed that the emphasis in construction from now on is on high quality and stable structures meant to be strong enough not to break in every flood[159]. During 2000 the irrigation system for Con Tom village was repaired and a new bridge built over the Bo River. The road between Hue city and A Luoi district town, which goes through Hong Ha commune, was upgraded to an asphalt road with concrete walls built along the slopes in several places to stop the landslides. Repairs of the Khe Ca Te irrigation system in Hong Ha however, had to

[154] Interview 17/9/00
[155] District meeting 17/5/00
[156] Interviews 18/9/00
[157] Mr Son, A Luoi Agriculture Section 15/9/00.
[158] Mr Vu, Vice Chairman of the DPC 15/9/00.
[159] ibid

wait until 2002 before it was financed. This meant that two out of four hectares of paddy in Pa Rinh village remained uncultivated in the dry season for three years after the floods[160].

The commune People's Committee was not impressed with the quality of the Con Tom irrigation system. They had not been able to influence the construction design as it was the district People's Committee who was the investment owner[161]. From 2001 the commune People's Committee were however 'allowed' to be the investment owner for the coming investments.

6.3 Coping and Recovery

The most important resource for coping and recovery in the mountain commune was access to land for food production, according to the households as well as the Hong Ha commune People's Committee. Land is a limited resource as large areas have been planted with trees in the watershed protection efforts. Recovering food production was a major effort. Firstly recovering the paddy fields and the dry land fields, then uprooting and clearing the sugarcane land, clearing old swidden fields and grass land for cultivation, all required extremely heavy work. Replanting cassava, which is the main food crop, takes 7-9 months before it can be harvested. The first year after the floods was thus difficult for most households in Hong Ha.

Efforts to recover the paddy land dominated the first few months of coping.

Even though paddy rice is a new and relatively less important part of food security for people in the mountain commune of Hong Ha, the households interviewed still placed considerable emphasis on what had happened to the paddy land. The extreme inundation of stone and sand, and sometimes the complete destruction of the land, was quite a shock to people. It proved to be a very labour intensive task to recover the paddy land.

Mr Duong, Pa Rinh village tells us[162]: *It has taken many man months to recover the land. I only have one arm since I was wounded in the American war. I and my wife spent two full months after the floods digging and recovering two plots, which could be planted with rice for the winter-spring season. Then we continued digging and two more plots could be planted in the summer-autumn season. One plot was not possible to recover. We planted dry land crops also, but the soil was so wet, so it was not good for the crops.*

According to the commune People's Committee[163] all but a few households were able to recover at least part of their paddy land in time to plant the spring crop of rice, which could be harvested in June. This crop was good, around 3 tons per ha

[160] Mr Hua, Hong Ha People's Committee, November 2002.
[161] Meeting with commune leaders 20/9/00
[162] Household interview 18/9/00
[163] CPC Chairman February 2001

(which is good in the mountains), but the autumn crop was damaged by insects. Because of the major effort required to recover the paddy fields, the winter-spring crop was not planted until March. This postponed the harvest period of the summer crop until late October. People were worried about not being able to harvest in time before the flood season, but luckily there were no major floods in this area in 2000.

One positive point about the major labour requirements needed to recover land was that it created some work opportunities, mainly for the youth. Most households did not have the money to hire labour, but a few households did. Mr Xuong[164] paid 700 000 VND (43 USD) to recover 500 m2 of paddy field. He paid 50 000 VND/day (3.5 USD) because it was such hard work. This wage is double the 'normal' day workers' wage in the area. Mrs Bac[165] paid 1.2 million VND (75 USD) for the recovery of 500 m2, as it was more deeply inundated with stone. Several households also paid for labour to recover their fish ponds.

Dry land rice could have been an option, but there was lack of seed.

With the focus on paddy production during the 1990s, people in Hong Ha had stopped growing dry land rice varieties (lúa cạn). After the floods people tried to get hold of dry land rice again, but it was difficult to find seed[166]. The NGO project at the Hue University of Agriculture and Forestry (HUAF) supplied some short-term varieties of dry land rice for trials, but these were limited amounts.

Another reason why people had stopped growing dry land rice was the government campaign for sugarcane cultivation in 1998-99. According to the commune People's Committee[167] 80 percent of the families in Hong Ha commune took part in planting sugarcane on land where they had previously grown food. Some people got an income for the first harvest, but by 1999 the sugarcane-processing factory in Hue had found that the transport cost was too high and were closing down. Households could not sell their second harvest. 15 out of 32 hectares of sugarcane were destroyed in the floods. The land was now converted back to food production, but it required heavy work to get rid of the sugarcane root system[168].

Mr Duong's family has 1000m2 of dry land, which in 1999 was planted with sugarcane. After finishing digging the paddy fields, they dug out the cane and planted sticky rice for the summer-autumn season. *We will have enough rice for the winter,* says Mr Duong[169].

[164] Interview 17/9/00
[165] Interview 18/9/00
[166] CPC chairman 16/9/00
[167] Commune meeting 27/9/00
[168] ibid
[169] Interview 18/9/00

Limited access to hill land was a constraint for coping and recovery

The most severe impact for food security was the loss of the cassava, as was stated both by the households and the commune and district leaders[170]. It takes time to rehabilitate cassava production. On the lower land the soil was too wet to plant again for two months and then it takes 7-9 months before the roots can be harvested. Commune leaders are worried about the lack of hill land available for cassava, since forest has been planted 'everywhere'. The hill land that is still available is of low quality[171]. Many people felt hesitant about replanting cassava in the river valley where the risk of inundation is high[172]. Previously (before 1990) cassava was grown on the hill slopes. The slopes have since then been planted with forest and are to a large extent barred from cultivation according to province level regulations for forest protection[173]. In the wake of the floods many households nevertheless returned to old hill fields that were left fallow or opened up new fields on the grass land. These fields however have very low productivity.

A major part of household coping strategies in the mountains are related to access to land. The household of Mrs Kan Mua, Pa Rinh village[174] was poor even before the floods. They lost their paddy land in the floods and had to depend on dry land crops and minor forest products.

Mrs Kan Mua says: *We used to have 1500 m2 paddy in the Khe Ca Te area. That land is now dry and sandy, but we can grow some dry land crops there. 1000 m2 of sugarcane by the river was destroyed, but we managed to clear the field and plant dry land rice instead. We had mango, persimmon, cinnamon and pepper in the garden, which were lost and we have not planted again. We do not have any seedlings. We planted beans and dry land rice and got 24 kg of beans, which we sold for 100 kg of rice. We opened up 250 m2 of new field to plant paddy so that we at least have a little paddy rice of our own. We have 500 m2 of old swidden fields, which gave 180 kg of rice. The swidden field is the most important source of food security for us now that we do not have paddy. We would like to expand the swidden fields, but we are not allowed to. We do not open up new fields, we return to old ones, which are left fallow, but they have very low productivity. We had 300 plants of cassava further away, but it is difficult to protect and the wild pigs destroyed it. If we had had the cassava we would have had enough to eat.*

A household[175] in Con Tom village that lost 1500 out of 2500 m2 of their paddy land in the floods has opened up 1500 m2 of hill rice instead for the first time. They did not have swidden fields before. It was unusual to open up new swidden fields. The other interviewed households said that they were too scared that the fire would spread to take that risk. They just returned to old swidden fields, which lay fallow.

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[170] Commune Party Secretary 20/9/00 and district PC vice chairman 17/5/00
[171] ibid
[172] Household interviews September-October 2000
[173] District Forest Station October 2000
[174] Interview 17/9/00
[175] Interview 18/9/00

According to the commune People's Committee people planted 40 hectares of hill rice (lúa rẫy) in 2000. According to staff of HUAF[176] the area under hill rice had expanded from 30 ha in 1999 to 60 ha in 2000. The expansion of hill rice meant that people returned to fallow fields and cultivated imperata grass land. Imperata is a weed with very strong roots that has taken over a lot of the hill land in A Luoi after the forest was destroyed by US chemical defoliation during the war. Hard work is required in order to get rid of the imperata roots and the land has low productivity[177].

People used a patchwork of opportunities to secure food production, including the use of marginal areas, risk-prone areas and areas not meant for production at all. Mrs Xuong[178] in Con Tom planted paddy rice in her fishpond and dry land rice on an old helicopter terrace on the hillside.

Land for dry land crops is often exchanged informally between relatives or neighbours. Mr. Duong says: *We borrowed 1000 m2 of cassava land from a neighbour. Before the floods we had borrowed 500m2 of banana from my wife's brother in Pa Hy for three years, but we gave it back after the floods. We have some banana intercropped with the dry land rice now instead. We have 1000m2 of swidden land, but it is too poor quality to use. We want to plant maize, vegetables and beans on 200 m2 of land close the river. It does not belong to anyone as is too risk prone to be allocated. Anyone can use it. There is around 2000m2 of land like that in the village. We will not plant until after the flood period, so we do not know yet if we will be able to use that land.*

It took a long time to recover the dry land, of which 20 hectares was inundated with sand and stone. People were busy working on recovering the paddy fields so the dry land had to wait. In May 2000 60 out of 80 hectares of dry land crops in the commune had been replanted. Two hectares of dry land were not possible to recover at all[179].

According to the commune People's Committee[180] the commune made a limited redistribution of dry land after the floods, in order to ensure that all households had access to at least 700-1000 m2 dry land. The dry land belongs to the commune, which allocates it to households on an informal basis. The paddy land is however allocated to households with formal certificates. It was thus not possible to make redistributions of paddy land in response to the flood losses.

New land is being opened up for cultivation some km away.

An opportunity for accessing land for dry land cultivation is to open up land in an area further down the Bo River, around 7 km from the commune centre. It is part of a project by the province Department of Sedentarisation. The establishment of the

[176] Mr Bao 24/10/00
[177] ibid
[178] Interview 1/7/00
[179] Commune meeting 18/5/00 and 27/10/00
[180] Mr Xuong 28/9/00

'new area' was initiated before the floods, so it was not related to the flood losses as such, but it did fill a convenient function as extra access to land for those who had lost land. Other households who had enough labour to open up new fields also moved there. The expansion of cultivation into the new area is further discussed in section 8.5.

Mrs Kan Bang's family[181] was one of around 30 households from the commune who received land in the 'new area' in 2000. They are one out of three households in Con Tom village who lost all their paddy land. Mrs Kan Bang says: W*e have received 2500 m2 of land for planting pineapple and fruit trees. My husband is there now. He comes home once every 10 days.*

Limited credit in the mountain commune

Bank credit played a relatively minor role for recovery for people in Hong Ha. State flood-recovery-credit of 5 billion VND (300 000 USD) was allocated to A Luoi district, but only 52.5 million VND (2300 USD) was granted to 22 households in Hong Ha according to the commune People's Committee[182]. In Pa Rinh village, 42 households applied for credit, but only three households received it[183]. The credit did not arrive to the households until May 2000, later than in Hai Lang district, where it was distributed during February-March[184].

The vice manager of the Bank for Agriculture and Rural Development[185] in A Luoi district referred to directives from the province Department of Agriculture regarding the use of the credit. It was said to focus on recovery of lost income opportunities, mainly fish raising. The argument for the low response to household credit applications was that people in Hong Ha commune have limited production for the market. Their losses mainly affected consumption. For the majority of households in Hong Ha it was difficult to get flood-recovery-credit even for losses of commercial production.

Mr Kon Mua[186] says: *We had fruit trees in our garden, bought on credit from the Department of Sedentarisation. The trees died in the floods. We had pigs bought with a credit through the Women's Union. The pigs were 30 kg when they perished in the floods. We still pay interest on the loan every month. We applied for flood-recovery- credit, but we did not get it. The Bank does not dare to give us credit. The most important for us now is to borrow to repair and strengthen our house. The production investments would be in order to generate funds for the house.*

[181] Interview 18/9/00
[182] CPC Chairman 18/5/00
[183] Pa Rinh group discussion 17/9/00
[184] CPC Chairman 18/5/00
[185] Interview 21/2/01
[186] Interview 17/9/00

Mr Duong[187] had recently invested in a fishpond. He lost his fish and the pond was filled with sediment, but he did not get any credit either.
He hired labour from the local youth to help dig the pond again, which cost 400 000 VND (25 USD). 1999 was the first year he had started trying to raise fish, with fingerlings provided by the university (*ca tram*). He says *I will reinvest in fish after the floods, but only local species (ca rofi). I suppose we will sell the bigger fish and eat as much as we can before the next flood period.*

People without enough household labour applied for credit to hire labour to recover land and production, but this was not granted. Others applied for credit for recovery of animal husbandry lost in diseases after the floods, but this was not seen as a flood loss. People also applied for credit to repair and strengthen their houses, but this was not granted. Instead, people took loans from relatives, without interest, but the scope for such lending is not significant as most people in Hong Ha are quite poor.

In Hong Ha there is no practice of taking private loans according to the households interviewed. A reason may be that the potential moneylenders do not believe there is any business for this in Hong Ha, as there is little income from marketable products.

The households that did receive credit were better-off households like Mr Xuong[188]. He tells us: *We lost 700 mature fish, 3000 fingerlings, three goats, 14 piglets and many chickens. Our garden crops were on higher land and not too damaged. We got government "flood recovery credit", six million VND (400 USD) with which we repaired the pond, bought new fish, ducks and pigs. We are preparing a new fishpond higher up and we will move the fish there during the flood period. We have already sold the ducks and fish, and received 6.3 million VND, so we can pay back the credit.*

Mr Dien[189] in Pa Rinh village got credit of one million VND (66 USD) for fish raising, even though he did not lose any fish. He started with fish ponds after the floods.

Old debts were not cancelled, only postponed. 53 households had loans through the Women's Union, which they continued to pay interest on after the floods, and gradually repaid. The sugarcane debt was cancelled after two years of uncertainty about whether this would be the case[190].

The forest provided some income opportunities, but they are decreasing.

The forest could provide several sources of income; collecting minor forest products, planting and tending forest on contract, or working as day labour for others who have a forest contract. Collecting forest products was mentioned by several

[187] Interview 18/9/00
[188] Interview 17/9/00
[189] Interview 27/9/00
[190] CPC 27/9/00 and HUAF staff December 2001.

households as an important coping strategy, especially for the poor[191], but it was very hard work. When we came to visit Mrs Kan Mua's family again in October 2000 only the children were at home. Both parents had been away for a month already collecting rattan in forests far away.

Mrs Kan Bang in Con Tom village was one out of a few people who worked as a day labourer in the forest sometimes, which gave 20-25 000 VND per day. She says: *I try to get as much work in the forest as possible, sometimes it is difficult and sometimes it is easy. This year (2000) I got 50 labour days. It depends on your contacts. You have to have good contacts with the army or other people who have forest contracts. I also get an income from tending one hectare of trees that I planted last year and from which I earn 479 000 VND (32 USD) over three years.*

Mr Nam from the commune People's Committee explains that most of the forest around Hong Ha commune is managed by the Bo River Watershed Management Board[192]. From 1994 the Board made planting contracts directly with farmers, who got an income from planting and tending. In 2000 most of the area close to the commune was already planted and the Board signed contracts with the army and private entrepreneurs for planting and tending of forest further away. These entrepreneurs hired labour, and it was such a labour contract that Mrs Kan Bang got. 58 ha were however contracted directly with 50 households in three villages in Hong Ha in 2000[193].

Mr Duong in Pa Rinh village[194] tells us: *In 2000 I planted 1.4 hectares and received 1 068 000 dong / ha (70 USD). 14 ha were "allocated" to the village and 9 people signed up for 13 ha. Then I took the last hectare. The tree planting is hard work. I leave home at 4.30 in the morning and reach the plot at 7 o'clock. Previously the payment was in three steps, but now we have asked to get the payment in one lump sum. It is better to get a larger amount at once so that you can use it for something meaningful.*

The village discussions in Pa Rinh[195] suggest that as long as the villagers had an income from planting and tending they were basically positive about the arrangement with the Board. After the year 2000 there have been no more forest planting contracts. This is further discussed in section 8.2.

[191] 6 out of the 21 households interviewed had collecting minor forest products as an important income during 2000.
[192] A state Board under the province Department of Agriculture and Rural Development.
[193] Hong Ha Party Secretary 16/9/00
[194] Pa Rinh group discussion 17/9/00
[195] ibid

Recovery situation 2001-2002

Group discussions in Pa Rinh and Con Tom villages[196] in February 2001 suggested that 60 percent of the villagers had recovered, while 20 percent were recovering, but more slowly. 20 percent were in difficulties. The reasons for the differences in recovery according to the groups, included the level of how deeply inundated the paddy had become with stone, labour capacity in the household and health situation of family members. In terms of assets, the households who had cattle had more reserves to recover quickly. Mrs Lan in Con Tom said that she had recovered quickly. Her paddy fields were only slightly inundated. She has a salary (200 000 VND = 13 USD per month) for being the head of the commune Women's Union. Mrs Xuong lost 1500 out of 2500m2 of paddy, and the garden and dry land crops were inundated with sand and stone. The paddy she has left only gives one crop per year. Her main income now is from collecting firewood and rattan, used to buy rice[197].

In 2002 the situation had stabilised and improved for most people in Hong Ha commune according to the People's Committee[198]. Access to credit had improved and 60 poor households had received credit from the Bank for the Poor. 70 percent of the households have pigs now, more than double from 1999. 50 households had income from planting rubber in 2002. The state rubber project provides inputs and labour wages on credit to the households, which they are expected to pay back when the rubber is harvested. The province has started a cassava processing factory and many households are selling cassava. They are planting a new variety, provided by the NGO project at the University, which grows bigger and is mainly used for fodder as it is not as nice to eat. Mr Vuong in Con Tom village says that this new cassava has given him an income of one million VND (65 USD) from 2000 m2[199]. The paddy harvests have not been good because of drought and insect attacks. They are hoping for improvement when the repair of the Khe Ca Te irrigation system is finally completed in 2003. The dry land rice area has expanded with the help of the new short-term seed varieties from the University[200].

The households interviewed had all invested in stronger houses.
Mrs Kan Mua says[201]: *We got a bank loan of three million VND (200 USD). Together with a loan of two million VND from relatives we have been able to strengthen the house. We got an income from collecting rattan in the forest last year of three million VND, but this year we will not go to the forest. The work is too hard. We still do not have any paddy land, but we will have 600 m2 next year, when they have finished repairing and improving the Khe Ca Te irrigation system. Our main income is still from the old swidden fields.*

[196] 22 and 23 Feb 2001. Groups of 10 people in each village assess the recovery situation in their village.
[197] Both stories of Mrs Lan and Mrs Xuong are from the group meeting 23/2/01
[198] Commune meeting 24/11/02
[199] Interview 24/11/02
[200] Commune meeting 24/11/02
[201] Interview 24/11/02

Recovery situation 2004

According to the commune People's Committee, the number of poor households was now down to 40 percent from 63 percent in 2000[202].

Mrs Xuong in Con Tom village says[203]: *I have stopped collecting forest products. It was too hard. I got a loan from a trader in fruit tree seedlings and have planted fruit trees in the garden. The garden is at risk to floods, so I will try to gradually invest in a drainage system around the garden. I and my husband have planted 3.5 hectares of rubber and we have received 2.6 million VND (175 USD) for 130 labour days per hectare. This is a credit, but it is alright. When the rubber trees give harvest we will be able to pay back.*

Mrs Kan Bang, Con Tom village says[204]: *I received permission from the Forest Station to collect wood and have just built a wooden house. I sold cassava for 400 000 VND (26 USD). Last year I sold cassava for 1.9 million VND, but this year I have been sick, so I did not plant so much. My husband is still in the 'new area' working. We have one hectare of rubber there.*

In 2004 several households received state support to build a wooden house, with a tin roof. In Pa Rinh village there were only three households left who did not yet have wooden houses.

The situation in Hong Ha has improved partly because of income from labour days planting rubber and from selling cassava. Over half the households in Hong Ha are now involved in planting rubber. This income is risky, as it is a credit to be paid back after harvest. It is not clear what will happen if the rubber harvest is poor. Several households reported that they prioritise the use of the fertiliser supplied for the rubber for the rice instead.

To sum up: After the first year of hardship after the floods the situation returned to 'normal' for the majority of households in Hong Ha. The households who suffered long-term difficulties and change in their livelihood conditions were the eight households who lost their paddy land. For the majority, the struggle to make a living with meagre resources continued in ways similar to the situation before the floods. The difference was an increased awareness of the vulnerability of having most production in the river valley, and an increased demand for access to hill land for production.

[202] Commune leaders 5/5/04
[203] Interview 5/5/04
[204] Interview 5/5/04

7. Vulnerability and Access to Resources

In this chapter the aim is to structure the different aspects of coping and recovery discussed in the previous chapters, focusing on differences in geographical conditions, access to resources and the linkages between poverty and vulnerability. Differences between collective and individual access to resources are discussed as well as the balance between the responsibilities of the state, the village and the individual household.

While government support for recovery was accessed quite equitably across wealth groups (people with different income levels), there were differences between geographical areas. I argue that there are several areas where structural constraints and unequal access to resources have been impediments in the process of recovery. Such areas include the health sector, access to land, access to markets as well as the insufficient social security system.

7.1 Differences in coping and recovery between the study communities

The differences in geographical location result in differences in vulnerability and susceptibility between the low land, hill land and mountain villages. Such differences are physical geographical as well as socio-economic, cultural and institutional. Table 3 summarises the enabling and constraining factors in coping and recovery for the different villages presented in chapter 5 and 6 as a basis for a discussion of the different conditions for coping and recovery between the low land, hill land and mountain villages.

Table 3: Differences between the study villages: Enabling and constraining factors for coping and recovery.

Factors influencing coping and recovery	Low land	Hill land	Mountain
Enabling:			
Proactive local leadership.	x	x	x
Access to minor forest products.		x	x
Food relief	Four months	Four months	Seven months
Government credit for production.	x	x	
Migration and remittances.	x	x	
Day-labour opportunities.		x	
Active local organisations	x	x	x
Constraining:			
Very labour-consuming recovery of land			x
Not enough land for food security.			x
Seasonal stress in the following crop seasons (like rains, insects)	x	x	x

Post flood animal epidemics	x	x	
Loss of perennial crops, for which it takes several years to regain income.		x	x
Damaged houses had mainly to be rebuilt with private funds	x	x	

The range of possible production and income influences coping and recovery.

Physical geographical differences and the consequent differences in production, influences what type of income is possible in the coping period. Low land dependence on paddy rice production means a dependence on income at only two main points in time every year. The time span after the flood losses to the next harvest was seven months, which was a difficult period to bridge. The recovery period was prolonged by the fact that several rice harvests in the years after the floods were reduced due to heavy rains during the crop season. Costs of production in paddy cultivation were high, which made people especially vulnerable to crop losses. Input costs, especially fertiliser and water management costs, frequently amounted to almost as much as the output value[205]. This agrees with one of the conclusions from the 'participatory poverty assessments' organised by the World Bank in Vietnam, that dependence on a narrow range of activities and sources of income is highly significant as a factor of vulnerability (Conway and Turk 2002).

In the hill lands people have a broader spectrum of income, which includes a broader range of crops, land for fodder production, more animal husbandry as well as tree planting, the collection of firewood and other minor forest products. There were thus more sources of income for coping and recovery, spread over different points in time and less problems of long periods of food shortage. The total income over the year was often lower for the average household in the hill land villages, compared to the low land villages, but the spread of different sources of income makes it easier to cope with sudden losses.

For the mountain commune, the physical geographical conditions combined with political restrictions in land use, meant that the main part of production is on land close to the river and was thereby seriously affected by the floods. The main food crop is cassava, which took nine months before it could be harvested again after the floods.

Market orientation versus subsistence production influence coping.

The hill land village is the most market oriented. Households here have less of their food requirements satisfied by production for consumption compared to the low land and mountain villages. The low land households had their food requirements for the year stored in the house when the floods came. The mountain households had their 'storages' of cassava in the ground, where they were destroyed by the inundation of water. The more market oriented livelihoods in the hill land village meant that more

[205] According to calculations by Hai Lang agriculture section, as well as my own interviews with e.g. Ms Binh in Phuoc Dien.

of their normal sources of income were still available after the floods, such as day labour, firewood collection, tree planting. The cultivation of short-term crops for the market, like groundnuts and beans, could be resumed within a few months. The loss of perennial crops, like pepper and fruit, was however a major blow to the household economy in the hill land village. This source of income takes five years to recover.

Government policies for disaster response favour the low land areas

The basic humanitarian assistance received was similar for the different areas, which all got government-organised food relief for the first four months. The agriculture section provided subsidised seed for vegetables and rice in Hai Lang, and seed grants in the mountains.

Government disaster response was more comprehensive on the low land, as this area is normally hardest hit by floods. The impact in the hill land and mountain areas was however greater than during previous floods, because of the changes in production systems. Hill land production has developed strongly in terms of perennial crops, and mountain production has transferred from the hill slopes to the river valleys, but these aspects got less attention in government support for recovery.

The farmers in the mountains had to spend months manually digging away stones and sand from the fields, without any government support with bulldozers or other machinery. On the low land the army and police were called in to help with repairing houses and infrastructure.

Government credit for recovery focused on paddy production, which is the basis of most people's livelihood on the low land, both for consumption and income. The focus on paddy however, meant less credit for the hill land population and no credit to the fishermen communities. In A Luoi district the focus was on the loss of marketable production, mainly fish raising. Farmers in Hong Ha commune received very little credit, although they also had losses of animals bought on credit and garden crops for income.

The difference in provincial state attention to the low land and mountain areas can partly be explained by the circumstance that the mountain communes are remote, and information travels more slowly. The low land gets more attention as it is more densely populated and the number of people in need is much greater. Policy documents on disaster response and mitigation show a certain bias, in that flood problems are mainly associated with inundation of the low land, whilst the effects of flash floods in the mountains have been underestimated and less understood. This is changing in more recent documents (Govt of Vietnam 2001).

The homogeneity of livelihood conditions within the community influences solidarity between households

When external relief supplies had subsided in Hong Ha, the commune leaders continued to travel around to ask organisations and companies for support to the commune population. Similar commune initiatives did not occur in the Hai Lang

communes. A reason for this could be the more homogenous economic structure in Hong Ha, where most people were poor, and in need of additional assistance. In the Hai Lang communes, a larger percentage of the population were able to mobilise income, food or support through their own networks. The commune or village leaders did not see it as their task to mobilise food relief for the remaining households, who had no other source of food than to take informal loans at high interest. The culture of community responsibility for the welfare of all households was strong in the immediate disaster response. After the first four months after the floods, the capacity to cope and recover was more related to the 'normal' structures of differentiation and poverty in the villages. Commune leaders in Hai Tan expressed the view that disaster response was not a poverty alleviation program[206].

7.2 Coping and the importance of different types of assets

The types of assets that the households have are vital for the possibilities of coping. The important assets are not necessarily those that can be sold, but rather those that can provide a small daily income during the critical period until regular sources of income and food security are re-established.

Start and Craig (2004) discuss household coping strategies in terms of assets, activities or consumption moderation. According to the interviews, most people did not seem to be adjusting consumption in a detrimental way. Children were still kept in school, health costs were paid and food consumption levels were kept stable. The interviewed households did not sell productive assets (if they had any left after the floods). According to staff of the Hai Lang district Agriculture Section, it is common for households to make savings in gold. Households may have had jewellery to sell, although it was not mentioned in the interviews. Another resource that was rarely mentioned in the interviews was remittances from relatives abroad, although members of staff accompanying me during the interviews maintain that it is quite common. In Hong Ha commune however, it is unusual for households to have remittances, either from abroad or from within Vietnam. According to staff of the Hue University of Agriculture and Forestry it is more difficult for people from the ethnic minorities to get jobs in the cities.

In Adger's (1996, in White 2004) discussion of different coping strategies he speaks of a sequence where insurance mechanisms (e.g. selling jewellery or taking loans) comes first. Secondly the household is forced to sell productive assets to survive. The last stage is when the household is forced to break up, with individuals joining other households, or distress migration. In the study villages it was mainly the first of these strategies that were used, i.e. selling liquid assets and taking loans.

Household interviews and comments from village leaders in Hai Lang suggested that a large percentage of households took loans to satisfy basic needs. The interviews suggest that the decision to take loans was prioritised compared to reducing

[206] Meeting 10/5/00

consumption or selling productive assets. For example, the family of Mrs Binh in Xuan Loc took out a loan rather than selling cattle, which were meant to be kept for e.g. wedding and funeral expenses[207]. In Xuan Loc and Hong Ha loans were mainly between relatives and interest free. In Van Tri and Phuoc Dien (both low land) however, both poor and middle-income households took loans from money-lenders at high interest rates. Money-lending seems to be a mainly low land phenomenon and reflects an economy where household income is concentrated to two occasions per year at rice harvest.

Moser (1998) sees assets as a primary factor in determining vulnerability and resilience. She follows the Sustainable Livelihoods framework when discussing assets in terms of 'human capital', 'financial capital', 'social capital', 'natural capital' and 'physical capital'. Bebbington (1999) adds 'institutional capital' and emphasises the distinction between access though institutional relations as compared to individual social relations. Start and Johnson (2004) stress especially the assets that are easily convertible into cash to solve urgent needs. As we have seen in previous chapters, people did not primarily sell assets for cash. The coping strategies that were found to be dominant in Xuan Loc (hill land) and in Hong Ha (mountains) included the collection of minor forest products and cultivating marginal plots. 'Natural capital' was thus crucial for coping. As the floods hit hard against the land resource in Hong Ha, the means of coping were very much related to recovering land or acquiring access to other land as a temporary means of food production. Our findings agree with research in other areas, which shows that the poor often depend on some element of open access common property resource for their livelihood, e.g. access to the possibility of collecting firewood for sale. (Devereux 2002).

Apart from access to 'natural capital', such activities also depend on having intangible assets, like human resources and social and institutional capital. Coping in Hong Ha required heavy labour to recover the paddy field, and to open up new land and re-cultivate the sugarcane fields. In Hai Lang, seasonal migration to work in the coffee harvest in the Central Highlands (Tay Nguyen) or the nearby Huong Hoa district is an important supplement to household income even in 'normal' years, but increased in the years after the floods as part of recovery.

Human capital, which includes manpower and good health, seemed to have been the most important asset in all the study villages. Given that access to land and government support for rehabilitation was relatively evenly spread within each village, human capital seems to have been an important differentiating factor regarding coping and recovery for different households. The interviews suggest that health problems were a serious constraint to recovery from the floods, both because of the loss of labour capacity and because of the high costs of medical care.

'Social capital' is often mentioned as an important resource, because it contributes to the access to other resources. 'Social capital' can give access to contacts for day labour opportunities, production inputs, land, loans etc. Local organisations are an

[207] interview 11/10/00

important part of such 'social capital' and play a significant role in access to resources. This will be discussed further under section 7.4.

To sum up: The Sustainable Livelihoods Framework emphasises household assets, capacities and activities to cope with crises. Twigg (2003) sees this framework as useful for identifying the assets that are most at risk and those that could become most valuable in a crisis.
The experience in the study villages suggests that access to small, but frequent income is vital for coping. Households who did not have this took high interest loans to bridge the gap in food security. Such loans tend to accumulate and remain a problem for the household for a long period of time. Non-tangible assets like human, social and institutional capital were crucial for coping. Labour capacity to recover land, to collect minor forest products and to work as day labourers could provide food and income for coping. This did not only require labour but also social and institutional capital. In Hai Lang, the access to minor forest products and day labour was mainly available to the hill land households. They had previous contacts for such access, as it is part of their 'normal' ways of making a living, as a supplement to their farm income.

7.3 Poverty and vulnerability

The World Development Report 2001/2 draws attention to the link between poverty and vulnerability by pointing out that the conditions of '*stable employment, insurance, credit and assets help the upper and middle classes to recover faster from disaster. The low-income group has fewer options for coping with a disaster. They have fewer assets, almost no insurance and less diversified sources of income, and a disaster can push them into destitution*'.

Poverty and vulnerability are the result of similar structures and livelihood conditions, but the two concepts are not identical. This section looks at the aspects of poverty, which tend to reinforce vulnerability and the degree to which vulnerability leads to, or reinforces poverty.

The time dimension is important in understanding vulnerability.

The World Development Report 2000/01 defines vulnerability in terms of the likelihood that a shock will result in decline of well-being. According to this report people are not vulnerable unless it leads to such a decline, but the definition does not specify the time perspective. We need to discuss vulnerability not only in the short-term (one year) but also in the medium-term (2-3 years) and long-term perspective.

Hulme et al. (2001) discuss in terms of the 'transient poor', as distinct from the 'chronically poor'. Transient poor are people who fluctuate above and beneath the poverty line and occasionally dip into poverty due to an extreme decline in income. The 1999 disaster floods pushed many people below the borderline of poverty for a

period of time (one-three years). The poverty level[208] in Hai Lang district was 15.9 per cent in 1998 according to district statistics[209]. In 2000 this had increased to 23.4 per cent, but from 2001 the poverty level has steadily decreased. In 2001 it was 20.8 per cent and 8 per cent in 2005 (DPC 2005). According to official data[210], the level of poverty in 2005 had decreased in all the fieldwork villages and in the two districts as a whole. The poverty level in Hong Ha commune decreased from 60 per cent 1999 to 47 per cent in 2004, according to district data[211].

In Van Tri village the number of poor households had been reduced year by year down to 20 before the floods. In 2000 the number of poor households was 26 according to the village head[212] and 10 poor households in 2004. The 10 poor households may have fallen deeper below the poverty line compared to before the floods as they were indebted to the cooperative. This is an indication of a serious household economic situation, because it implies that they had to give up part of their land (formally for two years) to the cooperative for rent to other farmers in order to pay the debt. According to households interviewed, giving up land is considered as a 'last resort' even if it is temporary.

According to the district People's Committees in Hai Lang 2004[213], the livelihood situation for most households in the district is better than before the floods as the economic development has continued over the years. This was confirmed by village leaders in the study villages in 2004. In November 2002 the pattern was that most people had recovered from the floods disaster, while a limited group of poor households had difficulties in recovering. The interviews suggest that such difficulties are a result not only of the floods, but of additional stress in the household livelihood situation, mainly health problems resulting in lack of household labour, high medical costs and indebtedness. Other research has found that people can often offset single disadvantages, but have less ability to deal with multiple, reinforcing disadvantages (Devereux 2002).

The interviews in 2002 suggest that the 'transient poor' had recovered by this time, in the sense that their household economic situation was more or less similar to their situation before the floods according to their own perception. The households did admit to having a continued feeling of vulnerability to seasonal stress, low prices and health problems.

The district and commune officials tend to see the floods disaster as a problem of transient poverty. Chronic poverty is considered to have other reasons. According

[208] According to the Vietnamese government the 2004 definition 2004 of a per capita monthly income level is of below 150 000 VND (10 USD).
[209] Mr Thach, district section for organisation and labour 14/12/01
[210] DPC report on the socio-economic development 2001-2005
[211] Mr Dai, Agriculture Section, June 2004
[212] Mr Cong, village head, 13/10/00
[213] According to DPC development report (2005) and according to the perception of village leaders and selected households in 2004

the district staff responsible for poverty classification in Hai Lang district, the reasons for poverty include lack of knowledge, lack of funds, lack of labour and lack of land, as well as having many children[214]. The Hai Thanh commune chairman stresses health problems, lack of knowledge and lack of funds as the reasons for poverty. He notes however that households with health problems have had particular difficulties in coping with the impact of the floods[215]. The conclusion from the interviews is that it seems likely that the poor are at risk of sinking deeper into poverty because of the floods disaster. This suggests the need for combined efforts of poverty alleviation and disaster response.

The importance of the family health status is also emphasised in the 'Participatory Poverty Assessments' (PPA)(World Bank 1999). A serious or long-term illness or accident, particularly of an economically active member of the household, is one of the most common shocks that a household can face. The Ha Tinh[216] PPA found that 57 percent of households where the standard of living declined had reported that ill health was the cause (Conway and Turk, 2002). Conway and Turk present statistics from all the PPAs which suggest that the poorest quintile of the population spend on average 33 per cent of non-food expenditure on health care annually. The report concludes that mechanisms to meet the costs of medical care for poor and vulnerable groups are potentially among the most important of social protection instruments. Since 2000 the Vietnam Health Insurance Authority (VHIA) has provided cards for free health care but these have a limited outreach (ibid).

Vulnerability leading to poverty?

Cook (2002) distinguishes between two types of relations between vulnerability and poverty. Vulnerability can be a gradual process, slowly leading to poverty through long-term erosion of security, entitlements and resources. In other cases people are vulnerable to sudden shocks, throwing them into poverty. In the study area, the number of people who were 'thrown into poverty' as a result of the floods was quite limited. This would apply to the eight households in Hong Ha who lost all their paddy land. Their livelihood conditions were abruptly changed in a way where relief and rehabilitation could not make a significant difference. The interviews suggest that for most of the vulnerable households increased poverty is a more gradual process, where the floods disaster is a contributing but not the only factor.

Miller (2003) suggests in her study of floods in the Mekong delta that when resources have been depleted by crop losses, debts and high medical costs, a serious flood can be the event that pushes a household further into debt, out-migration or the further erosion of their livelihood base by selling vital assets. Miller quotes one villager who estimated that many of his neighbours would have to mortgage their land because of the 2000 flood losses. In Hai Lang and Hong Ha, the interviews suggest that people did not sell productive assets in response to the 1999 disaster.

[214] Mr Thach, district section for organisation and labour 14/12/01
[215] Mr Quyen 20/10/00
[216] Ha Tinh province lies in north central coastal Vietnam and has similar conditions as Hai Lang district.

The situation for the indebted households however, serves as a warning that conditions may be declining as suggested by the experience from the Mekong delta.

It is not necessarily correct to assume that households are 'stuck' in poverty. The recovery period may just be longer, as studies from China by Ravallion and Lokshin (2000) and Jalan and Ravallion (2004) suggest. They find no evidence of poverty traps, but conclude that it takes many years to recover from shocks and that the recovery period was longer for the poor (referred to in Dercon 2005). Dercon's experience from Ethiopia suggests that the recovery period can be very long. It took on average ten years for livestock holdings in rural Ethiopia to recover to the levels seen before the 1984-85 famine. Dercon acknowledges that there is too little data available regarding the long-term effect of such major shocks in general.

Of the interviewed households only few had fallen from being middle-income to becoming poor after the floods. A fishing household in Van Tri is such an example. They did not become poor as a result of the floods alone, but in combination with other livelihood shocks, particularly health problems. The husband tells us in 2002[217]: *Our situation is difficult. My wife is still sick, and we have had to take informal loans for the hospital costs for several years now. Our debt is now six million VND (400 USD) with 5 per cent interest per month. In combination with the flood losses and private loans to re-invest in nets and boat repair, this is a heavy burden for the household economy.* Two years later in 2004 he said: *We now have a poverty card, which reduces the hospital costs. But the costs are still high.* A*ll the fishermen are raising fish in cages quite successfully now. We also have a cage, but only 100 fish because of no money to invest. I have sisters and brothers in Saigon, but they do not send any money, except for the parents' grave and other common family matters, and only a little for the hospital costs. Sometimes I can do day labour, but very little. If I could I would invest in fish raising.*

Poverty that increases vulnerability

Wisner (1993) focuses on how individuals and households are vulnerable to hazards in different ways. People at the same income level do not suffer equally in disaster situations nor do they encounter the same handicaps during the period of recovery. The poor can thus not be categorised as one group, in terms of understanding their vulnerability.

Poverty can increase vulnerability in terms of increased exposure and/or decreased capacity to cope and to recover. Sinha and Lipton (1999) draw attention to situations when low levels of assets increase vulnerability in terms of unsafe conditions, like low quality of housing, access only to marginal lands, poor quality of livestock etc., factors that are directly correlated to poverty itself.

In the fieldwork villages we could observe that the poor often experienced damage to houses because of simple construction. The force of the water was such that even some of the better-off households had their houses destroyed. The better-off lost

[217] Interview 14/11/02 and 28/4/04.

more in absolute terms, while the interviews suggest that the losses of the poor, though not as heavy, have had a relatively greater impact on their livelihoods.

Most households in Hai Lang district have investments in animal husbandry. In the 1999 floods, all social groups experienced loss of their animals. The epidemics after the floods affected both rich and poor. The poor however experienced losses for a longer time period because of fewer resources to invest in pig sties and fodder[218].

The family of Mr T in Van Tri village were poor even before the floods. Their poverty and vulnerability are tightly interwoven. In 2004 their situation was worse than it had been before the floods.

In November 2002 Mr T said: *I am often sick and it is difficult to work in the fields. We have to hire labour and we get help from our brothers and sisters. We have an old debt of six million and a new debt of two million. We have not yet paid back the flood-recovery-credit. Recently we got a new bank loan of one million VND. We were surprised. Maybe the bank did not check properly? We have borrowed 3500 m2 of land in Van Quy village from relatives, in addition to the 3500m2 of land which is our own. The spring crop yielded 1750 kg but the autumn crop was only 700 kg because of insect attacks, and it was very dry. We still owe the family two tons of rice, but without interest. We have sold two pigs and two others perished. Our rice was finished two weeks ago, which means that we will be short of rice for 6 months. We will borrow rice and pay back at130% after harvest. We are not in debt to the cooperative, so we have not had to give up any of our land.* Two years later in 2004 he reported: *Now our debt to the bank is 10 million and private debts are 3 million. We have paid back our loan from the Women's Union, and got a new loan of 2 million. The spring crop this year was bad, so we had to borrow a few million through the cooperative. The autumn crop was ok. We have received a cow in a poverty alleviation project through the Farmers Association. Our hopes for the future are basically to be able to have enough food and gradually to invest a bit more in animal husbandry.*

Insufficient paddy land, poor health, frequent crop losses, and animal husbandry losses make the situation very difficult even without the floods. The increased need to take loans for subsistence after losing the rice, and the loans for repairing and strengthening the house put Mr T's family in a volatile situation of debt, which means that whatever surplus they have goes on paying the interest. They have received support, both formally and informally, which keeps them afloat, but they continue to be at risk to losses that could deepen their indebtedness. Their vulnerability is linked to lack of resources for generating income, like land and labour, in addition to the flood losses. The condition of lack of resources which has resulted in their poverty before the floods continues to be a constraint to their recovery from the flood losses.

[218] Household interviews and assessment by the Hai Lang Veterinary Station

The needs of the chronically poor are different from those of the transient poor

Government disaster response may have been adequate for the majority of households. It was less able however to address the needs of the chronically poor households in the aftermath of the disaster. Many of the latter resorted to taking informal loans with high interest, which were destructive to their household economy. This was especially so for households who were previously indebted for instance due to high medical costs.

In the Vietnamese discourse, there is sometimes a distinction made between the productive poor, who can be helped by investments in production, and the so called non-productive poor, who are people who are too old, sick or handicapped to make a living from production. If the handicap is a result of war injuries, they are covered by the social security system and receive monthly state support. For other groups, the social security support is very limited (Conway and Turk 2002).

The distinction between the productive poor and the 'non-productive' is difficult to make, as practically all households have some productive resource, even if they are old and sick. In Hai Lang they often have a formal allocation of paddy land, which entitled them to the 'flood-recovery-credit' even though they may not be cultivating it themselves. The interviews suggest that households with reduced productive capacity have difficulties in coping with a shock like the 1999 floods, as the means for recovery are so much linked to the labour capacity of the family. The limitations of the social protection system leave the old, sick and disabled in difficulties when it is a question of how to mobilise resources for house repairs and replacements of losses.

Christoplos et al. (2004) illustrate the arena of relief and development interventions as two intersecting axes; one with chronic vulnerability versus temporary crises and one with safety nets versus safety ladders.

The Vietnamese government response to the floods was primarily to treat it as a temporary crisis, which was addressed by providing 'safety ladders' with which the transient, productive poor could climb out of the difficulties. For the chronically poor, however, the crisis was not temporary. They would have needed 'safety nets' to stop them from falling deeper into poverty as a result of the floods.

To sum up:
Hulme et al. (2001) distinguish between the 'transient poor' and the 'chronically poor'. Transient poverty is when people fluctuate above and beneath the poverty line and occasionally dip into poverty due to an extreme decline in income. A large number of people in the study villages are transient poor. The 1999 floods pushed them below the poverty line for 2-3 years after the floods but they have since then improved their situation. The interviewed households who said that they were worse-off in 2002 compared to before the floods, were those who were poor and indebted before the floods. The needs of the chronically poor, I argue, are different from the needs of the transient poor as they struggle with additional difficulties, like

health problems, which constrain their capacity to recover. The focus on rehabilitation of production was important for the transient poor. The chronically poor however, tend to have reduced productive capacity, while they still need resources to replace their losses of food, animals, shelter and belongings. I argue that the social security system is not adapted to their needs. Only one percent of the national social security budget goes to disaster relief (Conway and Turk 2002).

7.4 Collective and individual forms for access

In this section household access to resources through formal and informal channels is discussed. I argue that the strong collective components in the provision of inputs for production increase access to resources for the poor. Access which is dependent on social networks and market contacts tends to be more differentiated according to household wealth groups. The types of assets and resources tending to depend on 'social relations' are discussed and also in which cases such 'relations' are of less importance.

The vulnerability to shocks is not just related to individually controlled resources but to the resilience of the community as a whole, as argued by Adger and Kelly (2001). High disparities in wealth and high levels of indebtedness and landlessness weaken kin and community support mechanisms and put pressure on local institutions and cooperative structures. Miller (2003) finds that the nature of the relationship between rich and poor and the availability of local employment, fair credit and emergency assistance contribute to the resilience of a community to withstand risks.

I argue that the conditions for community responsibility for rehabilitation were conducive in the study villages, due on the one hand to the relatively even distribution of land and resources, which provides an enabling environment for strong local organisations and mutual assistance. On the other hand there are indications of growing differences in wealth, which may influence community support mechanisms in future.

Social relations for access

Bebbington (1999) distinguishes between collective or institutionalised, and individual forms of social capital. The former is institutionalised for the community and thereby not dependent on the individual social capital. The term 'social capital' can in this context also be replaced by 'social relations'. Bebbington discusses social capital as the relations which mediate access to other types of resources.

Access to relief supplies after the floods in Hai Lang and Hong Ha can be said to be built on institutionalised social capital. The community norms appeared to ensure that distributions reached everybody, independently of relations or status. Relief is a humanitarian action based on need, without any expectation of counter action from the side of the recipients, which favours access of the poor. In contrast my experience is that in cases of distribution for income-generation, the access of the

poor can be constrained by the negative expectations that they would not be able to use the resources efficiently (Beckman 2001). Similar observations have been made by e.g. Jörgensen (2006). The chances that the poor will be able to access resources increase when distribution is based on broad general principles that are independent of individual assessments. The state 'flood recovery credit' was more accessible to the poor in Hai Lang because it was based on title to paddy land.

Social networks

When relief supplies had subsided, social networks became more important for access to resources. People became more dependent on family and relatives and their 'normal' set of relations. The interviews show that the difference between households regarding access to resources increased at this later stage.

Cook (2002), who has studied social safety nets in China, stresses the importance of support arrangements between rural households as determinants of capacity to cope. Households without networks may be in a more desperate situation, even though they may be less poor. Cook refers to Feuchtwang (1995) who looks at the social networks as a source of support in everyday solving of problems e.g. in the event of illness, paying school fees and finding work. He argues that this type of support becomes crucial, also for coping after a disaster. This is in line with my interview results.

As Tudawe (2001) points out that the social networks of the poor are mostly with people who are equally poor, and are thus only in a position to provide limited support. They are therefore not so useful for covariate shocks when 'everybody' has suffered losses. The informal loans from money-lenders were mostly taken from traders or rich households with whom the poor household did not otherwise have a social relation. It was thus not a 'patron-client' relation according to staff of the Agriculture Section.

The social obligations between relatives to support each other in need are traditionally very strong in Hai Lang and A Luoi and in Vietnam as a whole[219]. Which relatives people actually can rely on in practice varies. Many people have wide family networks in the same village. Family relations with village- or cooperative leaders can be beneficial as such relations tend to increase access to information, which in turn may lead to access to other resources.

It can be difficult for people without a family network in the area, for example if they have moved or if a woman is not accepted in her husbands family. According to Vietnamese tradition a married woman belongs to the husband’s family, and her own family and relatives do no longer have obligations towards her (Jamieson 1993). In cases of divorce, which are rare in rural areas, the woman may find herself outside the social network of both her original family and her former husband's family, which was the case for one interviewee in Van Tri.

[219] See Jamieson 1993

Formal and informal sources of support and coping strategies

Table 4 illustrates the different sources of assistance and coping mechanisms available to households, divided into formal and informal mechanisms. The formal access to resources is organised by the state, the cooperatives or the mass organisations. The formal/informal categories are in turn divided according to whether access is mainly dependent on individual social relations or whether the access in question is part of collective and institutional patterns of distribution with transparent regulations for access. Often the individual relations for access also have an institutional dimension, and vice versa, but I find that it is still meaningful to make a rough distinction.

Bebbington (1999) is interested in the importance of different types of relationships for access in the institutional context of state, market and civil society. In his example from the Andes, the medium-sized farms access resources through the market and kin networks, while small producers depend more on formal and externally supported access to knowledge, credit, irrigation, markets etc.

In line with Bebbington's experience, my data also suggests that the poor tend to have better chances of access to resources when these are institutionalised and collectively organised, while the better-off have access both through collective channels and individual contacts.

Table 4: Informal and formal mechanisms for access to resources for coping and recovery

	Individual household access	**Collective or institutionalized access**
Informal	Day labour; Cultivating marginal land; Remittances; Loans from relatives; Labour migration; Credit from local traders; Mutual support groups; Individual market contacts for access to fingerlings, piglets, fruit tree seedlings etc.	Support from Buddhist societies and other welfare organisations; Access to common property resources.
Formal	Credit through the mass organisations; Renting extra land; State allocation of hill land.	Food aid; Mutual support organised by the mass organisations; reduced tax; consumer price subsidies; State support for house repair; Red Cross support for housing; State recovery credit; Pensions; International tree planting programs; Infrastructure repair and investments; Cooperative input supply; Subsidised inputs;

Access to common property resources was at the time of the floods an important resource for the poor. It was a right that did not depend on individual relations. The possibilities for the poor to have cattle grazing on forest land and to be able to collect minor forest products was particularly important for coping and recovery in Xuan Loc and Hong Ha, but such access is diminishing. According to staff of the Hai Lang Agriculture Section, the free grazing of cattle in the hills is discouraged in line with policies to encourage the establishment of hill land farms. The former common property land is being allocated to individuals and groups of households for investment in forest planting, gardens and stall-fed animal husbandry. Not many households have the possibility to invest. According to the head of the cooperative in Xuan Loc in 2004, there are only seven households from the village that have received land. There are a few rich people from outside the village who have obtained contracts involving large areas of land, as reported informally to me by villagers.

Access to land is the most important resource for coping and recovery in Hong Ha commune, according to the villagers and commune authorities (chapter 6). It is only paddy land which is formally allocated to the households. The flat land in the river valley is under commune management and informally allocated to the households. It is difficult to get a clear picture of the household access to the sloping land of the commune. The Bo River Management Board and the district Forest Station have authority over land use, but the rules for household access are unclear and dependent on individual negotiations for short-term land use.

Collective access and the role of the cooperative

I argue that the cooperatives in Hai Lang are crucial institutions for the access of the poor. Through the cooperatives the access to irrigation and drainage is institutionalised for the community. Paddy land is distributed in several plots to each household in order to spread the risks and access to water regulation. Production conditions are therefore relatively equal between households, each having plots both in areas covered well by irrigation and drainage and in those which are not[220]. Access to community water management services is thus not dependent on individual social capital, as can be the case in other areas of Vietnam (see Tim McGrath 2002).

Many people in Hai Lang used the concept of "chủ động" to signify a sense of control over access to means of production and income. "Chủ động" means to be able to control things oneself, not to depend on outside forces. The opposite is to be "bị động", which means being dependent on factors outside ones own control. The individual and collective "chủ động" are not distinct from each other. I most often heard the concept of "chủ động" when water management was referred to. The frustration of not having enough capacity to drain the water to get going with the planting for the new crop season is mostly a collective frustration. People want the village to have better collective capacity, which will benefit everyone. In other cases the frustration concerned e.g. lack of access to credit, where people could feel "bị

[220] According to studies made under the Quang Tri Rural Development Program

động" and at the 'mercy' of the cooperative. The fact that bank credit[221] is often mediated through the cooperatives means that people sometimes feel that they cannot argue their own case, but depend on cooperative goodwill. This was indicated by a household in Van Tri.

The households interviewed perceived the cooperative organisation of the purchase of inputs as an increase in "chủ động" in the disaster situation, where more or less the whole village had similar urgent needs. Under 'normal' circumstances the system also enables households to purchase inputs on credit, which is appreciated. Many poor people reported to be hesitant to deal with the private suppliers because of fear of being cheated over quality and price.

Other than for rice, the households make their own production input purchases on the market. After the floods there were shortages of piglets, fingerlings, seedlings etc. Local traders had to travel far and prices went up. Several households reported that they waited until the Agriculture Section and mass organisations organised the supply of seedlings in 2002, before re-investing in pepper and fruit trees.

The cooperative also mediates changes in land tenure

In some areas of Vietnam the right to lease out land has resulted in increasing differences in the size of land holdings (Kerkvliet 2006). According to the Hai Lang district People's Committee, there have not been significant changes of land holdings in Hai Lang since land allocation 1993. In the interviews, several households explained that they had temporary changes in their land holdings through bidding for land or temporary letting land for others to bid for. Van Tri cooperative leaders confirmed that there are certain opportunities for households to extend their production by bidding for land. The cooperatives also have some land, around 5 percent of the total area, which is rented out to give an income to the cooperative for common purposes. People can bid for land from other cooperatives as well, not only their own. There are different reasons why households bid for more land. The fishermen as well as newly established households, who have too little or no paddy for subsistence, bid for land. Some better-off households, who have labour and draught capacity to expand their production also bid for land. The fact that both rich and poor are involved in bidding for more land can be expected to lead to the better-off getting the better land. The two poor households interviewed in Van Tri who were involved in bidding for land received plots that were at high risk to either flood or drought.

Households who are indebted to the cooperative have to give up part of their land for bidding through the cooperative for a (hopefully) limited time period. According to staff of the Agriculture Section, most co-operatives in Hai Lang use a system of sanction against households in debt whereby they claim part of the household land in order to lease it out and use the money to cover the debt. The co-operative in Phuoc Dien is however unable to use such means of sanction as the frequent crop losses

[221] This comment concerns 'normal' bank credit, not the flood-recovery-credit, as the latter was distributed to 'all' according to the decided principles.

result in too many households being unable to pay their debts. In Van Tri village six households where affected by this arrangement in 2001, which is similar to before the floods. In 2004 the number of households who had to give up part of their land for bidding had risen to 10, according to the head of the cooperative.

In the hill land villages, the cooperatives fulfil a similar function as on the low land for paddy production, but as paddy is a minor part of the household economy, the role of the cooperative in the community is also less. Each household is more dependent on their own relations for access. In Hong Ha commune (mountain) there is no co-operative. Here the main mediator of resources for the households is the commune People's Committee. The role of the cooperatives is discussed further in the next section.

Diversification is dependent on market contacts

Whilst the cooperatives ensure a relatively equal access to inputs for paddy production, there is a greater difference in access to resources for diversification of production, for which individual market contacts are more important. Better-off households diversify their production more, both because they have the resources to do so, but also because they have the required knowledge and market contacts. Many households seemed to feel hesitant regarding market contacts. When poor and middle-income households try new crops it is mostly in the context of a government campaign for e.g. green beans, groundnuts and pepper in which subsidised inputs are provided [222].

The so called diversification projects in Hong Ha commune are actually government campaigns for bulk production of a particular cash crop. 80 per cent of households in Hong Ha took part in the sugarcane-planting project 1998-99 according to the commune People's Committee. A current campaign concerns the planting of rubber trees with inputs provided on credit and in which around 50 percent of the households are taking part. Presently rubber looks like a very good investment, with high world market prices. No-one knows what the prices will be in seven years time when it is time for harvest. The rubber trees are sensitive to storms as was witnessed in 2006, when parts of the rubber plantations in the neighbouring Nam Dong district were destroyed in a storm[223]. It can therefore be a risk for poor households to become indebted in such projects. The interviews suggest that households are sometimes not aware that they have to pay back the costs of the inputs; but the sugarcane debt was partly cancelled because of the floods.

Some government projects have been quite inclusive of the poor[224], for instance state support for planting a certain crop. These projects have quantitative targets and are set on including as many people as possible, but training is often a limitation. Fewer resources tend to be available for such projects than for material support, and the

[222] My observations over several years, as well as discussions with staff of the Agriculture Section.
[223] According to staff of the Hue University of Agriculture and Forestry
[224] My experience from the previous years of working in Hai Lang district

people selected for the training courses are frequently not the poor. The extension staff and commune leaders expect them to have less capacity to take in and make use of the training (Beckman 2001). In A Luoi it has been more common for the poor to take part in training courses provided by the district Agriculture Section[225]. The households interviewed however commented that the training was quite theoretical, difficult to remember and apply in practice. With the support of the NGO project at Hue University the training methods are changing and becoming more field oriented (Beckman 2004).

The remoteness and transportation costs reduce the market contacts for most people in Hong Ha. The staff members of the commune People's Committee spend time arranging deals with suppliers of inputs in Hue city and A Luoi town, both private and public. The chairman Mr Hua's mediates contacts with suppliers of fruit trees from Hue. Mr Xuong in the commune People's Committee has both agriculture and veterinary education. He raises fingerlings for sale to people in the commune for fish raising, works as a commune veterinary and organises agriculture training. Earlier he used to sell fertiliser and pesticides on credit in the commune, but he has stopped since people had difficulties paying back the credit[226].

Engagement in mass organisations as a means of access

Formally government projects are open for all who register, but when resources are limited there is still a selection process. Being active in the mass organisations is a way of keeping up to date about government extension projects in both Hai Lang and Hong Ha. The social networks that arise from regular meetings in the mass organisations tend to give an advantage in distribution of resources, as suggested by several households.

Mr T in Xuan Loc tells us: *We are related to Mr Do (in the cooperative leadership). He helps us with information about the state programs and such. I took part in two training courses last year by the Bank for the Poor and I take part in meetings of the mass organisations*. Another cooperative member of staff laughs about the reference to family relations with Mr Do and says: *Mr. Do is related to 70 percent of the people in the village*.

The staff of village- and commune organisations in Hai Lang district almost exclusively consists of men. The staff of the Women's Union are of course women, and they are represented in the People's Committees, but otherwise the political and organisational life in Hai Lang is dominated by men. This appears to give an advantage to the men in the village in that it is primarily men who are selected for training courses and who go to meetings. The women go to Women's Union meetings and receive training in pig raising, which is the women's niche. In Hong Ha there are more women active in the commune level activities, for example the chairperson of the commune Farmers' Association has been a woman for many

[225] according to households interviewed June 2004
[226] interview 18/9/00

years, and for a time the vice chairperson was also a woman. In general, the bias towards the dominance of men in commune activities is also prevalent in Hong Ha.

'Envelopment'

The term ‘envelopment’ was invented by my Vietnamese colleague, when working in northern Vietnam, and is a phenomenon all over the country. Decisions by people in leadership positions can influence individual access to land, access to credit for private investment, access to construction contracts etc. This gives rise to a culture of 'envelopes' (containing money), as a regular part of relations with political leaders, which is spoken about quite openly. It is becoming more common as more money is in circulation in the economy than ten-fifteen years ago. As it is so widespread, one may assume that there are too many people who have already benefited from the system, which makes them reluctant to draw attention to fighting the practice.

For village- and commune level leaders there seems to be a saturation point at a certain level of living standard. One villager in Hai Ba commune expressed it as: "There is no point in replacing the cooperative leader on the basis of his receiving envelopes. Now that he has received enough to build a good house he is satisfied. If we replace him with a new leader, then that one will require envelopes until he also has a good house". I did not hear of any indication of corruption in the context of flood relief. It seems that the social norms are strong enough to avoid diversion of funds when the recipients are in an emergency situation.

Food relief, recovery-credit and support for house reconstruction also seem to have been distributed without any bias toward social relations. Reasons for this may be that the need for speed meant that the establishment of general principles for distribution avoided selection processes that could suffer from bias. In the succeeding phases of recovery however, the interviews suggest that access to resources was more influenced by social relations.

To sum up:
Adger and Kelly (1999) argue that vulnerability to shocks is not just related to individually controlled resources, but also to the resilience of the community as a whole. An important aspect in this respect is the homogeneity of the community. In Hai Lang district the relatively equitable distribution of land, and the circumstance that paddy rice is the base for most people’s livelihood, provides conditions for a collective approach to water management and production services. This collective structure was also the base for organising disaster response.

Bebbington’s (1999) experience from the Andes suggests that institutionalised access to resources is an advantage for the poor farmers compared to access through the market and kin networks. Small producers tend to depend more on formal and externally supported access to knowledge, credit, irrigation, markets etc. I draw similar conclusions from my study area. The inputs and services through state channels or the cooperatives are more accessible to the poor, compared to resources for other lines of production, which are more dependent on individual market

contacts. The interviews suggest that humanitarian assistance and credit for recovery did to a great extent reach the poor. Long-term recovery and adaptation through e.g. diversification appears to have been more dependent on market contacts, which led to a differentiation in favour of better-off households.

The importance of relations between the households, local government and local organisations in developing resilience is discussed further in the next section.

7. 5 The relation between state and 'civil society'

Christoplos (1998) emphasises the point that the role of the organisations in the context of disaster must be understood as part of the ongoing process of construction of the relation between organisations and villagers in development. The relations in the everyday development process are important for risk reduction and resilience. In the following section I discuss relations of access both in direct relation to the disaster response as well as the relations that influence recovery in the longer perspective.

As we have seen in the previous chapters, Vietnam has high capacity for disaster response. The interaction between local government and 'civil society' in Vietnam was important in handling the 1999 floods disaster and in the process of coping and recovery. What can we learn from these experiences? The Vietnamese experience is special because of the high level of organisation in society. The disaster response builds on an organisational culture where there are routines for organisation of community action also under normal conditions. This culture is to some extent changing with the economic reforms (đổi mới). Adger (2001), who has studied areas in the north of Vietnam, is concerned about what he sees as an erosion of such organisational culture, which in turn leads to an erosion of community capacity for disaster preparedness and response. At the same time he finds a spontaneous re-emergence of civil institutions, which forms a counterbalancing institutional adaptation. An example is the expansion of informal credit systems and reciprocity. Adger refers to Malarney (1997) who also sees a re-emergence of institutions associated with local collective action.

In Hai Lang and A Luoi districts the reforms have not led to erosion of collective organisation. The cooperatives in Hai Lang did not collapse, but are adapting to the changing society. They still play a central role in the management of infrastructure, credit and disaster response. Collective action in Hong Ha commune appears to be a mixture of traditional community structures and the more recent emphasis on the mass organisations.

The disaster response was an example of the positive aspects of the high level of organisation with clear lines of authority in the Vietnamese society. The previous section discussed how this high level of organisation influences access to resources both positively and negatively. This following section further examines the relations between the state, households and local organisations. The mobilisation in disaster

response involved a high degree of 'civic engagement'. People did not just sit and wait for relief, but took active part in the mobilisation of resources and in reconstruction. How do we understand this 'civic engagement'?

Synergy effects in the coordination of disaster response between state and 'civil society'

Vatsa (2002) defines 'governance' as referring to norms, traditions and processes that impinge on the exercise of formal power and authority. Governance is discussed in terms of the relation between formal authority (government) and other actors in society at local level as well as in terms of structures with informal authority.

Wisner et al. (2004) summarise what they see as characteristics of social relations and governance that seem to explain successful disaster mitigation in a 'golden dozen' list (p.346)[227]. This list includes

- trust between the authorities and civil society;
- social cohesion and solidarity;
- good cooperation and information-sharing among institutions involved in disaster risk reduction;
- a political commitment to disaster risk reduction;
- investments in economic development that take into account the potential consequences for disaster risk reduction;
- investment in human development and social capital.

Tendler (1997) points to experience where good governance has contributed to the development of strong civil society, supporting norms of co-operation and networks of civic engagement among citizens. Putnam (1993) has highlighted how civic engagement nurtures good governance and vice versa. Evans (1996) uses the concept of "state-society synergy" for situations whereby government and communities actively enhance each other's efforts.

In a review of international experience Evans concludes that synergy is most often fostered in societies characterized by egalitarian social structures and robust, coherent state bureaucracies; factors which characterise the Vietnamese society, at least in comparison with many other countries. The Vietnamese society is complex, and is partly moving away from egalitarianism with increasing market orientation. There is however a political economic and cultural base of egalitarianism e.g. in the distribution of land in the north and central parts of the country (Kerkvliet 2006). (In the south it was never possible to reinforce an egalitarian land reform.) The relatively equal distribution of land makes it easier for a village to act as a

[227] Wisner has studied Cuba's management of the hurricane Mitchell 2001 as an example of good governance. The deaths in the hurricane in Cuba 2001 were limited to just five. This success has been attributed to thorough preparedness training and planning, an effective cadre of local personnel, effective communication of early warning and instructions, which people trusted and acted upon, and political commitment to risk reduction with attention to the most vulnerable people. (Wisner et al. 2004)

community, because people have relatively similar interests. There are however other differentiating factors, like knowledge and remittances, which lead to income gaps between the households. There is an ongoing differentiation between business oriented households and households who produce mainly for subsistence.

Tradition of disaster mitigation

The broad participation in reconstruction after the disaster floods in Hai Lang is based on a tradition and routine for urgent community action when there is a risk of flooding affecting the crop. During my previous work in the district I noted for example how the chairman of Hai Duong commune People's Committee proudly reported that he had been able to mobilise almost a thousand people in the commune within an hour, to mend and secure the dike when it threatened to give in to the high water level of the river in 1998.

According to Le Bach Duong et al. (2001), the high level of organisation in the Kinh villages originates in traditional structures like kinship networks, groups, guilds and associations of common interests. The codes of practice of these institutions (Hướng Ước) provided a basis for the regulation of agriculture needs, mobilisation against disasters, invaders etc. The present day village regulations build on these traditional codes of practice and are often important in mediating between the interests of the state and the village communities (Bui Xuan Duc 2003).

It was often difficult to distinguish what was the initiative of local government from other types of local action in the disaster response. Formal and informal institutions interact and intersect. Village practices are based on traditional village norms and practice, but they are also influenced by government policies. Adger (2001) calls it a Vietnamese 'synergy' between state and society, a hybrid of state planning and traditional Vietnamese collective action and culture. He notes the difficulties in distinguishing between the Confucian tradition of strong communities, which follow the guidance of local leaders, and the present day strong state.

Local organisations as mediators between state policy and village practice

The commune level is the lowest level of government administration, which leaves village level with some leeway in which policies they choose to integrate. The commune level government is obliged to anchor decisions through village leaders, mass organisations and village meetings as stipulated in the 'grassroots democracy decree' (Govt of VN 1998). The Vietnamese proverbs: "The emperor's rule stops at the village gate" and "the mountains are high and the emperor is far" are still valid as local leaders have always had (or taken) substantial margin for in practice to 'reinterpret' centralised guidelines in ways acceptable to the locality (see e.g. Jamieson 1993 and Adger 2001).

Vietnam does not have so much 'civil society' in the sense commonly used, as organisations independent of government, which can monitor government action. The civil engagement and high level of organisation at local level however, does

result in an interactive discourse on local development, where local policy implementation is adapted according to local conditions and local political debate.
Le Bach Duong et al. (2001) have likened 'civil society' in Vietnam to being a 'society of mediating organisations' whereby these groups serve to bridge the gap between the state and society. In Hai Lang and Hong Ha, the main organisations at local level are the mass organisations. They have close links with the government structures and are loyal to the government policies, but are also accountable to the community. The balance between these loyalties varies between different areas and different situations. The mass organisations have a strong role in the process of nomination of candidates to the Commune People's Council through which the community influences policies at local level.

The high level of integration between local government and local organisations may result in an individual having a negative relationship with one side which may spill over and affect relations with other local actors.

Apart from the mass organisations, the most important organisation at village level in Hai Lang is the cooperative, which will be further discussed below. There are also professional organisations and religious bodies. The Buddhist societies played a major role in mobilising and distributing relief supplies of basic necessities. In Hai Lang there are also several Christian groups, which were also active in the relief work.

The ethnic minorities in the mountains have traditionally been quite independent of the national structures in the Vietnamese society, and have their own community practices. I did not have the opportunity to spend the time needed to understand these practices in any depth. The structures of local government and mass organisations are the same as in the Kinh villages, but the villages tend to have less frequent contact with district and province level.

The relation between the public and private sector

Evans mentions a second factor that stimulates synergy, which involves the links between the public and private sector. This relation is quite complex in the Vietnamese context. There are few larger private companies in the rural areas. The private sectors in Hai Lang and A Luoi mainly consist of individual entrepreneurs. Many people employed in the public sector are also active in a private capacity, and informal relations play a significant role for market contacts. For example, it is common for individual district and commune staff to have private businesses producing seedlings, which are required by the public support programs and bought by the district authorities[228].

The linkages between the state and private capital are however not as developed in Vietnam as in China, where there are strong local ties which connect local state officials and entrepreneurs to joint projects of rural industrialisation. (Oi 1992)

[228] E.g. the forest staff of the Hai Lang Agriculture Section, June 2004

Evans cautions us that 'when individual officials are enmeshed in close relations with elites who command private resources, there is a high risk of rent-seeking behaviour. Unless such behaviour is constrained by powerful internal norms and a dependable rewarding system of long-term career benefits, corruption is likely to become the prime consequence of such 'embeddedness' '. In Hai Lang and A Luoi, my understanding is that a certain degree of 'kick-backs' are provided in the state-private relations, as staff salaries are low, but norms in society at local level prevent such 'kick-backs' from becoming too dominant.

In both Hai Lang and Hong Ha there tends to be a strong correlation between political and economic strength. People who are economically successful are admired by the villagers, which gives them credibility for leadership positions. This can be both positive and negative for the village, depending on the personal characteristics of the leaders in question. A case, in which the entrepreneurial force of an individual also benefits the village, is that of the cooperative chairman of Cau Nhi village, Hai Tan commune. Under his leadership the village produces high quality seed for sale to other villages. Cau Nhi is always first to try new economic crops and options, often successfully. They attract a lot of district investment in infrastructure and training and are praised by the district staff as being resilient in face of the floods. They had good storages of necessities, including seed and good commercial relations with blacksmiths, carpenters, construction companies etc. for quick rehabilitation of both community and household property[229].

On the other hand, there is the case of a successful farmer and businessman in Van Tri village who used to be in the commune leadership at the time of the 1999 floods. He was seen by many villagers as mainly using his position to promote his own business. During the 1999 floods, he failed to play the role that was expected of a leader in terms of paying attention to the welfare of all the villagers, and being generous in support. In 2000 he lost his leadership position. The cooperative leader of Xuan Loc village lost his position in 2003 due to prioritising his own economic interests before that of the village.[230]

The discretion of local government

Evans third point is that a strong state bureaucracy is an enabling factor for state-society synergy. Tendler's (1997) experience from Brazil suggests that an important factor behind the effectiveness of government programs was the creation of municipal councils, with broad representation from different sectors, which enabled co-ordination and monitoring of activities.

This agrees with the organisation of disaster response in Hai Lang, where the district authorities co-ordinated between the different sectors like agriculture, forestry, education, health and poverty alleviation programs as well as the activities of the

[229] According to staff of the district Agriculture Section, and my own contacts with Cau Nhi cooperative.
[230] comments by villagers, and staff of the district Agriculture Section.

Red Cross and mass organisations. The strength of Hai Lang district People's Committee is said by many actors[231] to be related to the leadership skills of the chairman, who is often called upon to mediate in conflicts between different interests at all levels in the district.

Hai Lang district had a broad mandate of decisions on resource allocation in disaster response, as actions had to be done urgently. There are disaster preparedness plans, which means that the district authorities know in advance what type of actions they have mandate for; for example calling the army to help with rebuilding houses, infrastructure and sanitation. The province authorities monitor the work of the district, but do not have to approve actions in advance.

The role of public staff

Lipsky (1980) discusses the importance of understanding the behaviour of the frontline staff. They mediate the relationship between the citizens and the state, and thereby influence the implementation and outcome of policy. In Hai Lang we could observe a high level of staff engagement and action in disaster response, as reported in chapter 5. How do we understand their motivations? Tendler suggests trust and responsiveness as key factors. She argues that the extent to which government programs are able to combine social capital formation with the delivery of services, is a strong factor behind success in development efforts. In her Brazilian example the local staff received strong recognition for their actions both from below and above. Evans also concludes that an important outcome of public-private cooperation is the social capital that is formed or enforced, and becomes an important factor in development.

In Hai Lang the social relations between district staff and the local population are often strong. Many of these relations derive from the fact that the district staff come from, and are part of the communes in the district. Even if they now live in the district town, their parents and relatives reside in the rural communes. Local officials have such strong linkages with the commune population that it is difficult for them to escape from public opinion about their performance. This is also the case in other areas of Vietnam as reported by Shanks et al. (2003). Shanks et al. refer to authors like Sikor & Dao Minh Truong (2001) who argue that commune and district officials function as intermediaries, who rather than directly implementing state policy, play an important role in negotiating it with the local communities.

Government staff, especially at commune level, may at times have a difficult balancing act in their role as representatives of the government in relation to the commune population, as well as representatives of the commune population in relation to higher levels of government. In Hong Ha commune, this is especially so, in the case of state policies on restricted land use and forest protection, where the commune authorities have different perspectives compared to province level government (see section 8.2).

[231] including staff of the province, district and commune organisations and villagers.

Evans stresses the importance of the day-to-day public-private interactions and the norms and loyalties that develop in that process. He refers to Lam's work on Irrigation Associations (IA) in Taiwan, in which he concludes that 'the dense network of social relationships which exist among IA staff and IA members is the key to the system's effectiveness at the local level'. 'IA's are overwhelmingly staffed by people who are born in the locality, have lived there all their lives, and in many cases also farm there'. Lam argues that officials who make their careers in the locality rely on the experience and knowledge of local farmers. Farmers and officials are engaged in a shared project to ensure that services are delivered.
Lam's experience echoes the situation in Hai Lang, where government staff and leaders of local organisations have strong ties with the village population. As Lam also concludes, this ensures a significant level of accountability by the staff and leaders to the community. This accountability, however, may sometimes not to the community as a whole, but focused on the more successful farmers and entrepreneurs.

The role of the cooperatives is continuously changing

Before the market reforms, which started in 1986, the cooperatives were almost like a level of government and were given duties accordingly. The old cooperatives used to collect government tax from the villagers, but this duty has been transferred to the commune authorities. The role of the cooperatives changed when the paddy land was allocated to the individual households, which was completed in 1993 in Hai Lang. The cooperative law of 1996 provided space for a new type of cooperative, emphasising their role as an economic association of voluntary members, and the autonomy of the household as the basic economic unit. From 1999 the role of the village head is being strengthened, which relieves the cooperative of part of its role as representative of the village. There is a division of responsibility, in which the village head is responsible for social issues in the village, and the cooperative responsible for production issues. Government policies and proposals for economic development in the commune are anchored and discussed through the cooperative, which organises village meetings. In many parts of Vietnam the village management of irrigation, drainage and flood protection suffered when the cooperative system was reformed. In some cases the cooperatives collapsed and new organisational forms for water management had to be created.

In the Mekong delta, the cooperatives never took root in the first place. Miller (2003) discusses why farmers in her fieldwork area in the Mekong delta resist the formation of cooperatives, although the intensification of agriculture production and more advanced water control systems would be expected to encourage such organisation. According to Miller the resistance is related to the fact that the modes of cooperation are perceived as government constructs. They are likely to be resisted as long as they are not based on the pre-existing rules, norms and relations. The relation between the state and the farmers is historically different in the south of Vietnam, with less state authority, compared to the rest of the country. Miller also sees constraints for cooperative organisation in the inequalities of access that exist in the current water control system in the Mekong delta, which she argues, undermines resilience to risk scenarios.

In line with Miller's analysis, my understanding of why cooperative management of irrigation, drainage and flood protection in Hai Lang functions better, is related to the more equal distribution of land and access to water, compared to that of the Mekong delta. In Hai Lang the perceptions regarding the collectivisation of land in 1975, as reported to me by villagers, were generally positive as unequal structures of ownership and political influence were dismantled[232]. The cooperatives were based at village level, which makes them smaller than in many areas of the north and south, where they often are based at commune level. This makes it easier for the villagers to feel that it is their organisation, which they control. The late introduction of the cooperative system, as compared to in the north, contributed to the cooperatives in Hai Lang seemingly becoming more pragmatic and ready to change with market reforms. However, I understand the system has a long way to go before the cooperatives really are 'economic organisations of voluntary members', as prescribed in the cooperative law of 1996. At present it is difficult to be independent of the cooperative, as access to resources is to a great extent mediated by them.

Staff of the cooperative union at province level are also concerned that it is a slow process supporting the cooperatives in their activities related to broader production issues and business orientation[233]. Although cooperative business development is said to be in the interest of the village as a whole, I see a risk that a shift in cooperative focus to business would mainly serve economically strong members.

To sum up:
The thesis draws on work by Evans (1996),Tendler (1997) and Lipsky (1980) who all emphasise the importance of understanding the relation between government staff and their clients, in the case of this study, the villagers. They point to the norms and loyalties that develop in the process of day-to-day public-private (household) interactions. Evans' analysis of state-society synergy lifts forward how government and communities can actively enhance each others' developmental efforts. He argues that such synergy is most often fostered in societies characterized by egalitarian social structures and robust, coherent state bureaucracies, characteristics which fit the study area. I argue that the nature of relations between government staff, local organisations and households in Hai Lang and A Luoi strengthen the resilience in the studied villages.

As argued in Lam's (1996) work on Irrigation Associations in Taiwan, the fact that the members of the district staff and their families come from the rural communities increases the engagement in collective efforts. This is also the case in Hai Lang, where there is a high degree of integration and interaction between local government and the village population.

The feelings of trust in staff-citizen relations are not unproblematic. Lipsky suggests that such relations may lead to favourisation of some clients over others. The staff members get more job satisfaction from working with people who they know and trust, which means that they focus on a few relations and hope that they in turn will

[232] according to comments from many people during my years in Hai lang
[233] Interview with staff of the Quang Tri provinces Union of Cooperatives, June 2004.

spread the communication. This is also a feature in the villages in this study, where the members of staff tend to have closer relations with leaders and successful farmers. The way the village institutions function in the spreading of information and access to resources is crucial. The cooperatives in Hai Lang have both positive and negative roles in this interaction. The strengths involve the organised access to inputs and water management services, which facilitates access to resources for the poor on equal terms with other villagers. The relation of the household to the cooperative leaders may however become too important, as so many resources and contacts are mediated through the cooperative, which can cause stress if the relationship is strained.

In the following chapter the content of relations between government, local organisations and households are discussed from the perspective of strategies to reduce risk.

8. Disaster mitigation, adaptation and risk management

This chapter looks at efforts of disaster mitigation and vulnerability reduction at household, commune, district and to a limited extent at national level. Government policies are touched upon, but not discussed comprehensively. 8.1 looks at actions for flood mitigation, mainly through infrastructure, and the trade-off involved between disaster mitigation and mitigation of seasonal risk. In 8.2 forest protection is discussed, and the balance between reducing vulnerability through environmental protection and through household access to natural resources for their livelihoods. This brings us to issues of resettlement in 8.3. Production strategies and attitudes to risk are discussed in 8.4 for Hai Lang and in 8.5 for Hong Ha. In 8.6 the role of community management in building resilience is commented on. Finally in 8.7 the relation between social protection and livelihood promotion is discussed, and the options available to strengthen social protection and reduce risk.

8.1 Flood protection and disaster mitigation

In this section I argue that disaster mitigation and protection against seasonal stress are strongly interlinked and need to be discussed in the same context. Risk reduction in production is vital to building resilience to disaster and to enable a quick recovery.

The Red Cross pays a major role for disaster preparedness

Disaster preparedness in Hai Lang and A Luoi, includes a twenty-four hour watch at the district and commune People's Committee's during the period of autumn storms. Boats are kept at strategic places for rescue operations. State and donor resources have been made available to the communes to construct two story school buildings, where people can take refuge during high floods.

The communes have disaster mitigation plans for organising rescue operations, with a network of access to boats and stores of food, blankets, kerosene and other necessities. Commune authorities however emphasise that it is still the household responsibility to keep stores of essentials in a high place.

The Hai Lang district Red Cross organises training courses for the village population in disaster preparedness and how to act in a disaster situation[234]. They also train school teachers in how to include disaster preparedness in the curricula. The Red Cross has made boat arrangements with the fishing communes about bringing the boats quickly to the flooded areas for rescue purposes.

[234] Red Cross documents and interview October 00

At household level, almost all of the households interviewed had built storage for the rice under the roof and kept stores of basic necessities during flood season. House construction was a major part of household efforts to protect themselves and their belongings against future floods. Almost all interviewed households spent significant amounts investing in their house. The loans taken to invest in house construction however, represent a risk to the household economy. Like with the consumption loans, it was mainly the low land households who took informal loans with high interest to invest in their house. In Xuan Loc and Hong Ha, people mainly used loans from relatives and sale of assets. (See previous chapters).

Protection against seasonal production risk is an important part of reducing vulnerability also to disasters.

In January and February 2000, there were heavy rains causing high drainage costs and costs for seed and fertiliser which had to be reapplied after being swept away by rains. The combination of the losses during the November floods and the repeated production constraints after the disaster, made the recovery difficult and prolonged.

Apart from the problems mentioned above there continued to be production constraints, which included that the autumn crop in 2000 in Hong Ha was damaged by insects, the spring crop in Hai Lang in 2001 suffered from heavy rains in May and the autumn crop in Phuoc Dien 2002 suffered from rat attacks. In February 2006 there were heavy rains and flooding in Hai Lang, which swept away the newly planted crop. It is unusual with flooding at that time of the year, and it gave rise to speculations in Hai Lang about what is perceived as the increasingly unreliable weather. In August 2006 there were again heavy rains two weeks before harvest, which damaged part of the crop.

In some cases, households would get frustrated and report that they had 'lost their crop' (mất mùa) when the harvest was reduced by 'only' 10-20 per cent. This is an indication that even a limited reduction in yield causes significant problems to the household economy. The costs of seasonal risk involve not only the crop loss incurred, but also pumping costs to try to save the rice, higher costs of harvesting, drying the rice and threshing of the wet rice. The rice cannot be easily stored and must be sold immediately, resulting in price losses.

To understand the threats to people's livelihoods, and the measures people take against risk, we need to discuss disaster and routine risk in the same context. We cannot understand the process of recovery from disaster without understanding the frequent seasonal stress, which can undermine people's livelihood as much as disasters. Lewis (1999) draws attention to this type of 'small disasters', which occur regularly and undermine the livelihood conditions of many people. How people cope with long-term stress largely influences their resilience and capacity to recover from sudden shocks.

Major infrastructure investments to reduce risk

After the 1999 floods there was a major initiative established by donors and the Vietnamese government called 'the Central Province Initiative to Mitigate Natural Disasters in Central Vietnam'(CPI). It is coordinated by the UNDP Disaster Management Unit and includes investments to reinforce infrastructure for disaster mitigation, and to support flood preparedness systems. According to a CPI report (UNDP 2000) the infrastructure for disaster mitigation involves the strengthening of water reservoirs, dams, dikes, drainage structures as well as new roads on higher land, higher bridges and concrete walls on the hill slopes to protect the roads against landslides. Non-structural initiatives include the improvement of systems of warning, emergency planning and village level disaster preparedness training.

The focus in the CPI is concentrated on mitigating the flood hazard itself. It does not discuss vulnerability in terms of which groups are particularly at risk, or the capacity to cope and recover. The proposed infrastructure investments do however implicitly impact on conditions for recovery. Many of the projects involving dikes and dams are perhaps even more important for the protection of production in the regular, yearly floods, rather than protection against disastrous floods. This is also disaster mitigation, as my data suggests that recovery from disaster is highly influenced by production conditions under 'normal' years.

Trade-offs between different types of risk

There are however certain trade-offs between controlling the seasonal floods and handling the disastrous floods. Hewitt (1997) draws attention to how human practices may reallocate the dangers to which they are exposed. Societal decision to invest in relation to certain risks may affect other areas of risk.

Infrastructure construction often affects water flows, which may lead to unintentional consequences. A historical example from Broucheux (1995) quoted in Miller (2003), concerns the public works designed by the French during the colonial era, which aggravated the flood problem when building roads perpendicular to the flow of the flood water. Construction of canals during the Nguyễn and French era allowed for drainage of floodwaters from some areas, but increased the floodwaters in other areas, previously little affected. Canals connecting the main waterways to the coast created new channels for the inflow of saline water.

The problem of dike protection of one area, causing increased floods in another area is also prevalent in Hai Lang, farmers and staff of the Agriculture Section told me[235]. Infrastructure development on the low land is part of a long process of creating and ensuring production and living conditions for a growing population. Dikes and canals have gradually been constructed to protect the crop against the heavy rains. The autumn flood storms overflow the dikes, and should do so in order to drain more quickly. The uneven development of the dike system can however make the

[235] The Quang Tri Rural Development Program worked among other things, with the strengthening of the dikes. In preparation for this, studies were made of the effect of the dikes for different areas.

situation worse for the communes that lag behind. The water 'bounces' on the dikes, which creates currents and backflow of water. When Hai Hoa commune built their concrete dike in the 1970's, it created problems for Hai Truong-Tho-Thien communes. The water back-flowed on their land, and their low mud dikes broke more often. Now they too have constructed concrete dikes. According to the chairman of Hai Thanh commune, the dike system in Phuoc Dien village and the whole commune is low compared to the neighbouring communes, which increases their exposure to heavy rains during crop season. When the dike was built it was the same height as the dike of the neighbouring communes on the other side of the river, but since then Hai Duong and Hai Hoa communes have raised their dikes, so that the water flows more easily into Hai Thanh[236].

Phuoc Dien village would need a very long and strong dike around their area as they are in a 'basin', the lowest lying area in Hai Lang, but this has not yet been possible. There are however plans for a dike protecting the whole low land area of the district, which would create more equal conditions between the different villages[237].

The government water management development plans mainly follow administrative boundaries, rather than watershed boundaries[238]. Investments have been made commune by commune, depending on the ability to mobilise funds. It was not until an ADB project initiated investments in Hai Lang in 2005 that the funding was substantial enough to address dike protection and drainage for the whole low land basin, not just for individual communes.

Another issue concerns the amount of money which should be invested in infrastructure protection, as it is easily damaged by the autumn floods and cost a lot to repair. Autumn storms caused a great deal of damage in 2004 and 2005 as well as in 2006. The district authorities try to mobilise extra resources for repairs, but unless they get external support the costs will burden the households through increased water fees.

To sum up: Infrastructure investments in dikes and drainage cannot prevent major flood hazards. Although infrastructure for drainage is vital to reduce the impact of floods, the function of infrastructure investments is also to mitigate 'normal' stress during the crop season, which again increases resilience to disaster. The water management plans by the province and district authorities are primarily development plans within their respective administrative boundaries. In cases were the watershed crosses such boundaries, there appears to be limitations in the planning and administrative processes. Direct disaster mitigation investments are related to

[236] Mr Quyen, chairman of Hai Thanh commune 23/11/01

[237] Such a dike is included in the UNDP-coordinated disaster mitigation plan

[238] One plan is developed by the Water Management University in Da Nang, contracted by the Hai Lang district authorities in the early 1990s, and another plan made by the province Department of Agriculture for the Thach Han river basin. The latter was made mainly for the irrigation system. 1997 the Quang Tri Rural Development Programme developed a plan for the low-lying communes in Hai Lang district.

strengthening the access to safe refuge for people and their belongings, through housing, boats, storage and preparedness. Enabling households to strengthen their houses by providing long-term subsidised credit is a local demand which has not yet been dealt with.

8.2 Management of Forestland

The development of production- and living conditions in the mountains also face trade-offs, with different perspectives on risk and vulnerability. The tension between risk reduction through forest cover and risk reduction through production development is also an institutional tension between different levels of government.

Forest protection policies increased the vulnerability of the mountain population.

Since the establishment of 'program 327' in 1992 the Vietnamese government policies have had a major focus on reforestation of the hill slopes. Watershed management policies prioritised comprehensive forest cover, with the aim of reducing the risk of dangerous flood levels on the low land. Forest management of major areas of A Luoi district was allocated to the Bo River Watershed Management Board under the province Department of Agriculture and Rural Development. Between 1994 and 2000 the Board organised the planting of a major part of the hill land in Hong Ha commune, mainly with acacia. Agricultural production has gradually been transferred to the river valleys instead of the hill slopes, in order to protect the forest. The immediate reaction of the government after the floods was to call for an intensification of tree planting. The Vietnamese newspaper Lao Động reports from a meeting for flood recovery on 15/11/99 where the prime minister announces the implementation of the 'five million hectare forest program' in the central provinces as being a priority[239].

The perspectives of the mountain population were not taken into account however. The settlements and production of Hong Ha commune are at greater risk to flash floods now that they are situated in the river valley. The lack of access to the hill slopes was perceived both by households and commune authorities as the main constraint for recovery from the 1999 floods. (as discussed in chapter 6). Limited access to land for food production is a general problem for the Hong Ha population. According to district statistics the land for food production in Hong Ha decreased from 135 hectares in 1996 to 104 ha in 1999[240].

According to the households, the previous mode of production with shifting cultivation on small plots in the forest was not at risk to floods, as it was protected by the surrounding trees. 'No one' is arguing for a return to shifting cultivation, but households and commune authorities argue that erosion control and protection is

[239] The Vietnamese newspaper Lao Động 17/11/99
[240] Meeting A Luoi Land management office 28/9/00

workable with agro-forestry production on the slopes, and in that way combining environmental and livelihood needs[241].

During the 1990s the relation between the Hong Ha commune and the Watershed Board was still perceived as beneficial to the households, because they received tree-planting contracts[242]. Now that almost all commune land is planted with forest, staff of the commune People's Committee comment that it is as if they have 'woken up' and have started negotiations with province authorities and the Board to diversify the land use, i.e. to harvest some of the trees to be able to intercrop with economic species and food crops[243].

Hong Ha commune People's Committee argues that household management of the forest would increase the effectiveness of protection if it represents an economic interest for the households.[244] Hong Ha commune chairman, Mr Hua[245] shows us the map of the development ideas for the commune. The low-sloping hill land close to the residential areas is presently planted with acacia trees. These areas could be harvested in order to make way for agro-forestry gardens with fruit trees, bamboo, vegetables and cassava for income generation and food security as well as soil protection. Mr Hua also argues that the households should be allowed to enrich the forest with indigenous species, as a lot of forest diversity was lost in the US chemical bombings. The commune made a proposal to the Province Department of Agriculture (DARD) in 2001 to harvest this forest. In 2005 they had not yet received a response. According to government directives, all land with a slope more than 25% should be covered with forest, but the area under discussion is only a 10% slope. According to the commune People's Committee, there are 100 ha of forest in the commune below 20 degrees slope, presently planted with forest[246].

The district People's Committee backs up the commune perspective[247]. The vice chairman argues that watershed forest could be allocated to households for protection as well as their economic benefit, if it is close to their settlements. Even the head of the Forest Protection Station in A Luoi argues that agro-forestry in protected forest should be allowed, as people do not have enough food[248]. Mr. Son from the district Agriculture Section is frustrated by the mismatch between forest protection and livelihood development strategies. He says: *We develop the forest in order to reduce the impact of the floods. But there is too little research into how to*

[241] Interviews and meeting CPC 23/2/01
[242] Interviews October 2000
[243] Meeting Hong Ha CPC 23/2/01
[244] ibid
[245] Mr Hua was commune chairman until 2004, when he became Party Secretary of the commune. The present chairman is Mr Thanh who was previously a member of the commune People's Committee.
[246] CPC meeting 10/6/04
[247] Mr Thoi A Luoi DPC June 04
[248] Mr Chau, 21/2/01

plant and in which areas to plant in order to be effective. People will destroy the forest if they do not have enough land for agriculture production.[249]

In 2004 the NGO project at the Hue University of Agriculture and Forestry brought the province, district and commune levels of government together with the Bo River Board in a workshop, whereby the province representatives for the Department of Agriculture acknowledged the need for more integrated land use in Hong Ha commune[250]. The Board, however, is reluctant to agree to harvest or allocation of the forest to the commune under their mandate[251].

Other examples of forest allocation to households in Vietnam show an improvement of crop production and living standards as well as forest cover according to Shanks et al. (2003) They refer to Sikor and Dao Minh Truong's (2000) study of Black Thai villages in the northern mountains, which shows experience of local adaptation of policies on land allocation. The village institutions were able to accommodate state policy within the framework of their own priorities and communal land management practices, with a fairly equitable distribution of land resources and benefits between households.

The head of A Luoi Agriculture Section argues that riverbed erosion is a more serious problem than hill land erosion, and that bamboo planting along the rivers should be encouraged[252]. According to household interviews, the people of Hong Ha commune had been planting bamboo along the river to protect the riverbanks from erosion during the 1980s. They also used to plant bamboo and indigenous forest species for protection of agricultural and residential areas. With the transfer of control of forest management to the Bo River Board, the incentives for community forestry initiatives decreased. There is also increased competition over land now when the villagers only have the river valley for cultivation. The riverbanks are thus still largely without protective bamboo planting, although some commune initiatives for bamboo planting have been started since 2004.

To sum up: Watershed protection policies have mainly related to the interests of protecting the low land from excessive floods. The vulnerability of the Hong Ha commune population has increased since most of the sloping land has been planted with forest. Commune and district authorities argue for limited harvest of protected forest to allow for agro-forestry production, with the aim of combining erosion control and livelihood security for the mountain population. Such efforts have been constrained by the province Bo River Watershed Management Board. The CIFOR study points at results that suggest that forest cover is overrated as a means of reducing flood impacts (FAO and CIFOR 2005). This speaks in favour of more attention to the livelihood conditions of people in areas under forest protection.

[249] interview 22/9/00
[250] HUAF staff June 2004
[251] ibid
[252] Interview 21/2/01

8.3 Resettlement

Permanent migration and resettlement has not been a major consequence of the floods in Hai Lang and A Luoi districts. Resettlement is common in Vietnam, but more out of economic reasons or lack of resources in the present location, than in response to flood risk. During the past four decades, many millions of people have resettled from the low land delta areas of the country to the inlands and mountains, and from the northern mountains to the Central Highlands coffee production areas[253].

The permanent relocation that occurred in Hai Lang and A Luoi after the 1999 floods has been over a short distance (a few kilometres). In A Luoi district a few villages have been resettled from being too close to the river on to higher land. In Hong Ha commune part of Pa Hy village has moved, a few hundred meters up from the riverside.

The head of Pa Rinh village Mr. Duong argues like this about the need to move: *We live close to the river in order to have access to water. If we moved higher up the hill slopes, access to water would be difficult. We also continue to plant close to the river, as we have very limited access to cultivation on the hills. We should have safe places to move animals and people higher up on the hills when there are floods*.

In fact, according to the commune People's Committee[254], Pa Rinh village will have to move anyway, as the Province authorities took a decision in 2004 to build a hydropower dam on the Bo River, which means that Pa Rinh village will be permanently flooded. Commune authorities have protested against the decision. In 2005 they had not yet been able to meet with province leaders to negotiate. The commune leaders are worried about the long-term livelihood possibilities for the Pa Rinh population, because the compensation is not enough to make a living from[255].

A few households from different villages, who lost land in the floods, have moved to the new production area along the Bo River, a few kilometres to the south east, but this area is mainly cultivated by households who have not relocated, they have just expanded their production area.

In Hai Lang district the authorities have invested in infrastructure to make it possible to resettle households in the hilly areas of Hai Lam commune. 300 families from risk-prone locations near the rivers have resettled there[256].

There are also groups of households from the low land communes who are resettling in the mountains of Huong Hoa district, about 60 km away. The government

[253] Dang Nguyen Anh (2003) estimates that 4.35 million people moved location between 1994 and 1999.
[254] meeting 10/6/04
[255] ibid
[256] District PC socio-economic development report 2001-2005

allocates land and 4.5 million VND in start-up capital for families who want to move to the mountains.

Mrs Hiep is one of 26 families in Van Tri village who has registered to move to Khe Sanh (Hương Hóa district). She says: *We will live in the same commune as the ethnic groups living there already, but in a separate village. There is a cassava factory in Huong Hoa, so I can have an income from selling cassava, and I can plant forest trees and other species. I will still keep the house in Van Tri as my mother has land for her grave here and wants to stay put*[257].

Resettlement schemes are often controversial. The most common critique regards the impact of the schemes on the existing communities, rather than the difficulties for the new-comers.

The areas of the mountains where people from the low land settle to start afresh are called New Economic Zones. These policies started already in 1963 in the north (resolution no.8/NQ/TW (4-1963) and after 1975 in the south and central parts of the country. Experiences from other resettlement areas in the mountains where low land people have settled are often complex. There have been conflicts over land when the government has allocated land to the newcomers, which has informally been used in other ways in the commune. In some cases there have become income gaps, when the newcomers have easier access to resources than the minority population. In other cases the newcomers lead a very difficult life, as they are inexperienced with the mountain conditions (Nguyen Van Chinh 2001). I do not have information from Huong Hoa district on whether or not the increased presence and activities by low land families in the mountain communes have resulted in tensions or conflict over resources.

Resettlement is a response to the whole livelihood situation of poor households, not only the floods.

Davies (1996) distinguishes between positive and negative adaptation. Positive adaptation, she argues, is by choice, can be reversed and is concerned with risk reduction. Negative adaptation is of necessity, tends to be irreversible and frequently fails to contribute to a lasting reduction in vulnerability. The households from the low land villages (10 from Phuoc Dien and 26 from Van Tri) who have resettled Huong Hoa district appear to have made a 'positive' adaptation. The interviews suggest that the households involved are not destitute, although they are poor[258]. They often maintain a link to their old village, and could possibly move back again. Resettlement does thus not seem to be done in desperation, but with the hope and ambition to improve the situation of the household, although this may not always be the final result. Seasonal migration does not appear to be done in desperation, but as an active income generation strategy.

[257] interview June 2004
[258] e.g. interview Mrs Manh in Phuoc Dien and Mrs Hiep in Van Tri June 2004

Resettlement is likely to be motivated by more factors than the flood risk. Adger (2000) notes that responses can be difficult to distinguish from each other as any given response is situated within a whole social economy of responses. The interviews suggest that there are many reasons behind household choices of resettlement and migration, not only adaptation to the floods, but the floods disaster may have been the trigger.

8.4 Production strategies and risk, Hai Lang district

This section discusses production changes in response to the flood risk. Government policies regarding production provide a strong framework for what households do in practice. Household production choices often follow policy guidelines quite closely, often encouraged by state subsidies. The main focus in district government production strategies is income generation[259]. Risk reduction does come in, but mainly as a tool to secure income generation. The interview results suggest a correlation between level of income and capacity to cope with flood shocks. This would support income generation as a general strategy to improve resilience. Among the poor the interviews also show that important factors for coping include access to minor forest products and access to labour opportunities. This suggests that it is important to focus on other aspects of people's income generation, as well as production. This section however restricts itself mainly to a discussion of production, while other options of income generation will have to be considered in future studies.

Rice production, a source of both resilience and vulnerability.

In the low land areas, the dependence on one source of income, rice, representing a large percentage of the household income is found to create vulnerability (see chapters 5 and 7). The head of the Hai Lang district extension service, commented that households who only have rice production have great difficulties getting out of poverty[260]. Policy efforts are focused on adapting the production system to make it more diversified (UBND 2005). Rice is however still the basis of the household economy and food security for the majority of the low land population, especially for the poor. Investments to secure rice production therefore remain a priority in the district budget (ibid). Many households commented that rice production is the base in food security. Without this base they do not perceive themselves to have the possibilities of investing in diversification.

The primary development priorities expressed by households and village leaders on the low land concerned risk reduction through investments in strengthened infrastructure for drainage and irrigation,
access to short-term varieties of rice seed and improved post-harvest processing and storage. According to the Van Tri cooperative leader, most people sold their rice

[259] DPC report on socio-economic development 2001-2005 and plan for 2006-2010
[260] Mr Van 3/4/01

immediately after harvest in 2001, partly to avoid the flood risk. The price was then 1500 VND/kg, compared to 1800 VND in November[261]. He argued for a system whereby the cooperative could store the rice before sale, in order to avoid the risky storage in the individual houses. This was also brought up by the district Agriculture section[262], which emphasised the importance of the cooperatives for processing and marketing. They also emphasised efforts to reduce dependence on seed from outside by improving local production of seed. Since 2001 the government policy has been to develop seed varieties according to quality and resistance to flood and drought, rather than according to quantity[263].

The allocation of paddy land is gradually being reorganised in order to increase the 'efficiency' of production, although access to paddy land is still seen as a basic right for everyone. In the 1993 allocation all households got several small pieces of land, spread out in different areas, so that everyone would have both good and poor land with both high risk and low risk. There is now a process of land consolidation in order for people to get coherent chunks of land in the same place. The process is slow and is done through internal negotiations between the farmers in the village. According to the cooperative leaders, they oversee the process to make sure that the poor do not lose out, but the principle that land resources should go to people who have the capacity to make the best use of it, is prevalent and may result in difficulties for the poor to defend their interests.

Agricultural diversification increases income, but remains at risk to floods

There are several types of diversification. It can be the broadening of the number of on-farm activities and it can include off-farm activities. The activities can feed into the farming economy or they can be alternatives to farming. All these types are common in Hai Lang, while in A Luoi the diversification is mainly agricultural. As Ellis (2000) notes, there are many different reasons behind livelihood diversification, including coping strategies, risk management or capital investments. Diversification is commonly seen as contributing to the spreading of risk. In Vietnam the term is also used in context of specialisation in new production, which may in fact concentrate risk to one major export oriented crop, as discussed in the next section.

Barrett et al. (2001) and other authors have found that livelihood diversification is often a preferred strategy for many rural poor to reduce household vulnerability, as it may both generate income and improve consumption. This, according to Barrett et al., has led development agencies to promote income and asset diversification in areas facing repeated income and consumption shocks.

Diversification is not a panacea. Many households may be too poor to be able to diversify. The risk of production failure is higher for poor households because of lack of resources and knowledge. More importantly, a production failure has a

[261] Mr Dao, Van Tri cooperative 22/11/01
[262] district meeting 15/5/00
[263] Hai Lang Agriculture Section 3/4/01 and Mr Quyen Hai Thanh CPC 23/11/01

relatively larger impact for the household economy of poor households, compared to the better-off.

The interview results suggest that agricultural diversification may increase resilience if it leads to higher income levels, but it does include significant risk. Members of staff of the district People's Committee see better knowledge of agriculture production as the most important tool to increase people's resilience to shocks[264].

Diversification into livestock is very common both in Hai Lang and A Luoi. Practically all households in Hai Lang raise pigs, and so do almost half of the households in Hong Ha. Livestock has the benefit of combining income generation, with a type of savings. Buffalo grazing in the hills was frequently mentioned by households in Xuan Loc as an important risk management strategy. There, buffalo is kept for the income from selling calves rather than for ploughing. This practice is perceived as less risky than other types of animal husbandry and crop production. Staff of the people's committee of Hai Chanh commune concluded that the poor who had used credit for buffalo had been successful, while those who invested in other types of animal husbandry and garden crops had faced more losses and risk[265].

According to the head of the Xuan Loc cooperative in 2001, 70 percent of households in the village had buffalo, compared to 50 percent before the floods[266]. He also claims that more than 50 percent of household income now comes from animal husbandry, but livestock are also at risk to major flood hazards, and takes longer to recover from than lost crops. The level of livestock disease is quite high and strengthened veterinary service at village level is a prerequisite for income generation in animal husbandry, according to the district Veterinary Station. 2004 Van Tri village expected a village veterinary to come back from training, to work for the cooperative[267]. Xuan Loc and Phuoc Dien already had village veterinaries.

Crop diversification has included replacing part of the rice with beans, lotus and fish raising on the fields. Hai Thanh commune was preparing for 60 hectares of fish raising in paddy fields 2001[268]. Households who wanted to try this got state support with 1.3 million VND per hectare (85 USD). According to the Agriculture Section the market for fish is good[269]. In Van Tri village six hectares of paddy had been changed to dry land crops, like groundnuts and green beans[270]. Mushrooms, pepper and melons are other important crops, which are becoming more widespread.

Although decisions to diversify are taken by the household, they are highly influenced by the collective. Using paddy land for other production cannot be done on an individual basis, as the land has a common water regulation system. The

[264] District meeting 19/10/00
[265] meeting Hai Chanh commune 12/10/00
[266] Mr The, Xuan Loc 22/11/01
[267] Mr Quyet, Van Tri cooperative, 2004
[268] Mr Quyen, CPC 23/11/01
[269] District Agriculture section 3/4/01
[270] Mr Dao, Van Tri cooperative 22/11/01

changes from paddy production thus need to be done with larger groups of people and in agreement with the village and the cooperative. The efforts to move away from the mono-culture of rice are mostly done in local government campaigns where farmers on a coherent area of land are encouraged to plant for example beans. This 'encouragement' means that the government take on part of the risk of the new production, in the form of subsidised inputs. The risk of weather related seasonal stress is not less than in paddy production. Diversification still has the advantage of spreading market risks, and hopefully getting a better income.

Diversification not only spreads risk for the individual household. The homogeneity or diversity of the economic structure also influences the resilience of the community. A more diversified local economy has a better chance of providing opportunities of supplementary economic activities during crises.

There is sometimes a tension between different government policies, whereby the encouragement to diversify can lead to excessive risk-taking. When the government had secured the establishment of an industrial cassava processing plant in Hai Lang district in 2003, they needed to encourage as many farmers as possible to engage in production. Farmers were encouraged to grow cassava 'everywhere', including on ex-paddy fields, where the risk of inundation of water is very high. The cassava on the paddy fields was destroyed in the autumn floods 2004[271].

In the hill land village, garden crops are often the base of the household economy. Hai Chanh commune officials noted that in 2004 many households had expanded production of short-term crops, like green beans and groundnuts, compared to perennial plants, like pepper, tea and fruit trees[272]. A reason for this, they argue, is that beans and groundnuts have good market prices at present, but also that short-term crops represent less risk to the household economy in face of floods, compared to perennial crops.

Shifting investments to higher areas is mainly possible for the better-off households.

So far the residential areas and production of Xuan Loc village (hill land) have been concentrated close to the river in order to access water for irrigation. Mr Duoc says[273]: *I would like to plant pepper and fruit trees again, but then we should move to a higher area, where there is less risk from the floods. We have some garden land higher up, but I do not want to invest until we can build a house to live there and protect the garden, as well as drilling a well for irrigation. I still decided to plant some fruit trees, as the district Agriculture Section and Commune People's Committee supported the planting with 4000 d/seedling (25 US cents). 20 households in the village registered for planting and received training by the Agriculture Section and the Farmers Association.*

[271] Agriculture section, June 2005
[272] meeting June 2004
[273] interview 13/11 2002

The government offers credit and allocation of land to people who want to establish hill land gardens, with a combination of garden crops, forest trees and animal husbandry[274]. According to the manager of Xuan Loc co-operative, Mr The in 2002, it was only himself and Mr Toan and his brother who had established hill land farms. In 2005 it was said to be seven households. A constraint seems to be the need to build a house and have at least part of the family living at the hill land farm, in order to protect it. It is quite a large investment in irrigation as well as in the production itself. According to households in Xuan Loc there are some better-off households, with only slight connection to the area, who arrange for contracts for large areas of land. The result is that the land still available is quite far away, which makes people even more hesitant to move[275].

State allocation of hill land tends to prioritise households who have enough private resources to develop the land. Some donor projects have however secured that also the poor in the hill land communes have been allocated land for forest planting. A consequence of the allocation of hill land is that the free grazing area is restricted. Many households who had buffalo grazing in the hills, have to have them stalled on the farm instead. This requires more resources for feeding, and becomes less feasible for the poor, but a positive consequence of the forest investments may be that it provides local labour opportunities.

Non-agriculture diversification is increasing with growing rural welfare

Families in the most risk-prone areas, like Phuoc Dien village, dream of employment or other non-agricultural income, which could reduce their vulnerability to seasonal stress in agriculture.

A man in Phuoc Dien village says[276]:
We do not have any other sources of income apart from the rice. We would like to try the new breeds of chicken, but we do not dare to take the risk right now. There is not enough grazing and fodder for cattle raising. Animal husbandry in general is too risky. There is too much disease, even if we vaccinate. My mother has sapodilla (fruit) in her garden and we would also like to have fruit trees. My dream is to have employment in town, so that I could have a secure regular income. Then we could do the farming as a part-time occupation and not be dependent on it.

The interviews suggest that the above household is not representative for Hai Lang district as a whole. Most farmers tend to prefer agriculture to employment, but farming cannot provide income and sustenance to the entire coming generation, and migration for work is likely to increase.

In Hai Lang district development plans (UBND 2005) rural industrialisation is seen as important to 'take care' of the part of the population who are not able to make a living from agricultural production. Rural industrialisation is a centre-piece in state

[274] DPC socio-economic report 2001-2005
[275] Informal household conversations in Xuan Loc June 2005
[276] interview 15/11 2002

ideology at present, and is advertised on large signs by the roadside and in government speeches. In practice the process is slow and it is difficult to get industry to establish itself outside the urban centres.

Non-agriculture diversification into business tends to be a sign of growing welfare. Households with a higher income have a higher proportion of their income from non-agriculture activities, primarily business and trading, than low-income households[277].

As Start and Craig discuss in their India case (2004) agricultural growth and non-farm diversification tend to reinforce each other. It is not a matter of either growth in agriculture or non-farm rural economy,, the areas studied exhibit either healthy agriculture and non-farm growth, or stagnation in both. This can also be noted in Hai lang district, where diversification is increasing as the agricultural economy grows[278].

To sum up:
Diversification of production and other livelihood strategies are increasing among the majority of the population as a result of gradually higher income and therefore opportunity to invest. This diversification, I argue, reduces vulnerability because it reduces dependence on rice as the main source of income and food security.

In the hill land villages diversification within agriculture requires access to higher land. The cash crops presently viable on the market, like groundnuts and cassava are mainly suitable on higher land, which is also less at risk to floods. Better-off households can invest in farms on the plateau, with forest plantations and animal husbandry. The households who depend on low-lying gardens are more vulnerable. Access to higher land is thus becoming a differentiating factor between households.

8.5 Production strategies and risk in Hong Ha commune

The policies in the mountains since the 1999 floods have been to support the intensification of paddy production and cash crop production. This, I argue does not contribute to reducing vulnerability to floods. High investment in one cash crop also involves a significant risk of market failure. It occupies scarce land, which increases household vulnerability to food shortage in case of crop failure. Alternative strategies are argued for by commune and district authorities, pleas which have so far met limited response at policy level.

Food security strategies are based on more intensive rice production

From the way people in Hong Ha talk about paddy rice production, I realise that it has rapidly been included in the perceptions of basic needs. When interviewed about

[277] Quang Tri Rural Development Program evaluation 1998
[278] District People's Committee 2005

risks, households say that the lack of access to hill land leaves them no alternative, and therefore welcome the government investments in paddy. Since the 1999 floods the government has invested large sums of money to provide irrigation infrastructure, in order to expand the area of paddy cultivation. The upgraded irrigation system in the Khe Ca Te area enables them to cultivate eight hectares of paddy rice, compared to the previous four hectares[279].

There is however a tension in the paddy development strategies. In order to have sufficient food security, the output has to be raised. The government is encouraging the use of high yielding varieties, which require high inputs of fertiliser and pesticides[280]. Although many farmers are happy with the higher yields, the investment costs remain an unsolved problem as the rice is for household consumption, not for sale. [281] So far rice yields have been low, because people have been reluctant to invest a lot in fertiliser. Access to inputs from A Luoi town is cumbersome as few households have any transport. The commune is discussing plans on how to establish an input supply service at commune level. It would require a credit system, whereby the farmers can access inputs on credit and pay after harvest as people have very little cash. This however requires that the households have income from some other source, as the rice is only enough for consumption. Higher investments make people more vulnerable to seasonal crises and reduced harvest. The main attraction of the new varieties seems to be the shorter growing period, which reduces risk[282].

Government emphasis on cash crop development

The government development strategy for the mountains emphasises income generation through cash crops. There has been a series of efforts by the state to develop profitable export oriented crops. During the latter part of the 1990s investments were made in cinnamon and sugarcane, which failed due to insufficient market. From 2000-2002 the Department for Fixed Settlement encouraged production of pineapple and pepper, which has now also been more or less been dropped due to low market prices. During 2004-2005 all effort was put into encouraging rubber production. Rubber has previously not been grown in A Luoi district, only in the neighbouring district of Nam Dong, so Hong Ha commune is a 'trial area'[283].

In June 2005, at least half of all households in Hong Ha were planting rubber trees according to the commune People's Committee**.** Inputs for planting are provided as credit in kind. Labour costs are paid for but adds to the credit, which is to be paid back by the households as a percentage of the harvest every year, once the trees give harvest after 7-8 years. According to staff of the Hue University of Agriculture and Forestry, many people did not have a clear idea of the credit conditions, and some

[279] Commune People's Committee meeting 24/11/02
[280] Staff of the Agriculture Section March 2001.
[281] Household interviews and Commune People's Committee, June 2004
[282] Pa Rinh group meeting 22/2/01
[283] A Luoi district People's Committee and HUAF June 2004

were not even aware that they were meant to pay back the money they received for their labour. It is not clear what happens to the credit if the project fails to give the expected returns.

I expected people in Hong Ha to be sceptical about government cash crop campaigns after several backlashes when they have failed to give an income. Interviewed households did say that they were sceptical at first, but because inputs were provided, they said they would still give it a try. As planting the 'government cash crops' is practically the only way to access land, this is also a strong incentive to take part. If nothing else, as many villagers commented, at least it provides land where they can plant cassava in between the rubber trees for the first two years. The commune party secretary[284] was critical of the government 'campaign crops' in 2001, and stressed the importance of supporting households to develop different strategies depending on their different situations and conditions. The high prices on rubber at present however, encourage many people to want to join in the project.

Cassava is still considered by households in Hong Ha to be the most important crop for food security. Now it is also a cash crop since the Thua Thien Hue cassava processing industry was established in 2004. The state has established a guaranteed price of 300 VND/kg (2 US cent/kg). Production of cassava has expanded greatly both on the lower and the higher land areas, i.e. both with and without flood risk. The main production however, is still in the river valley, where the risk of inundation and risk of roots rotting is high. Cassava is also used for pig raising, which is especially important for the poorer households. Many households put their hope for income generation in animal husbandry, but the risk of loss due to disease is still high.

Risk taking is a bigger problem than risk aversion

Many authors, (Aliber 2001, Dercon 2005 etc*.)* suggest that being poor also manifests itself in risk aversion, which further exacerbates vulnerability and poverty. Benson (1997) sees the risk of vulnerability leading to poverty, because of the use of risk-minimising coping strategies that become a poverty trap. According to these theories, the poor constrain their own development because they do not invest in risky, but profitable lines of production.

Risk aversion does not seem to be the main problem in Hong Ha. My impression is rather that people take too large risks, which often lead to failed investments and increasing debts. Farmers, especially the poor, reduce their own risk assessments when the state provides subsidised inputs in campaigns to encourage the production of new crops or animals. The reinvestments after the floods in Hong Ha suggest that people do not avoid investments because of the flood risk. In group discussions in Pa Rinh village[285], Hong Ha, many lines of production were considered to be difficult for the poor because of lack of knowledge and lack of resources to invest in inputs. The discussions suggested a need for more extension support in order to

[284] Interview 4/3/01

[285] Pa Rinh group meeting 22/2/01

reduce production failure. Many projects have however failed; not only for the poor, due to market problems. The extension system is not well equipped to deal with market issues.

In the same group discussion, the main line of argument to reduce vulnerability is to spread risk. Ways to spread risk include cultivation in different types of places, with different risk pictures and cultivation of many different crops. Traditionally people have responded to high production risks by not investing so much in any one area of production. The present development strategies require higher investments, and it seems to be difficult for people not to necessarily follow that trend.

Hill land gardens, a middle way

The suggestions for agricultural development that are argued by the commune authorities and district agriculture section[286] is a middle way between low intensive hill land food production and intensive cash crop production. The district People's Committee chairman argued for more trials on sloping land agro-forestry already in 2000 along with demands for a new government land use plan[287]. This was still an issue in 2004[288]. The commune and district authorities argue for hill land gardens, with cash oriented trees (like fruit, rubber, cinnamon etc) intercropped with food crops on a long-term basis (not just the first two years until the trees have grown). This would make use of the available land resources and improve income and food security, without compromising environmental protection and with reduced risk of flood damage. The Pa Rinh group meeting mentioned above also argued that this was the only viable long-term strategy, as they expected the river to gradually erode the river banks and undermine the conditions for paddy production[289]. The practice of grazing cattle on the hill slopes is also considered to be an income generation strategy that is not too much at risk to floods and markets[290]. The district Agriculture Section stresses the need for processing industry in order to reduce market risk.

To sum up: The households, commune- and district authorities argue for reduced vulnerability to floods by developing hill land gardens for both cash crops and food security. The province level authorities have not yet enabled such a development strategy. Instead they put focus on intensification of paddy production and intensive production of one export product, rubber. Paddy, as we have seen in chapter 4, is at high risk to floods, and investment in one export product is at high risk to market failure. Households however follow the province investment policies as they are dependent on these for access to land and credit.

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[286] Commune meeting 20/9/00 and Mr Dai, head of Agriculture Section 21/2/01
[287] Mr On, 22/9/00
[288] Mr Thoi, DPC vice chairman June 2004
[289] Pa Rinh group meeting 22/2/01
[290] Commune leaders 5/5/04

8.6 The role of local management for resilience

The district and commune People's Committees expressed an ambition to increase self-reliance in recovery from disaster. Dependence on outside support increases the feeling of stress in the disaster situation. The need for humanitarian assistance to cope with the immediate crisis is difficult to avoid. Local 'insurance systems' of different kinds could however be an important supplement to national support in the rehabilitation of production, (see next section).

Hai Lang district People's Committee documents (UBND 2005) recognise the role of the cooperative in village level services including drainage capacity, veterinary services, savings & credit services and seed production. Strong local services of this kind are expected to increase local resilience to stress and disaster. Local government organises training and capacity building to strengthen cooperative capacity for such services.

The government is however reducing its back-up of the cooperatives in terms of credit guarantees, in order to reinforce the policy emphasis on the cooperatives as independent economic member organisations[291]. Until 2000 seed supply to the cooperatives was organised by the Hai Lang Agriculture Section. From then on the cooperatives are responsible for the purchase of seed according to farmer requirements. Staff of the Agriculture Section expressed concern that the difference between the cooperatives in terms of contacts with research centres and seed producers may lead to inequalities between the villages[292].

Local organisation of services in the mountains

The physical distance between Hong Ha commune and the district centre results in a lower level of district services at commune level, compared to Hai Lang. The importance of commune and village level capacity in credit management, extension, veterinary services and input supply is even greater for Hong Ha. In principle this is supported in government policy through 'program 135'(Govt of VN 1998). So far the '135' funds have mainly been used for infrastructure in the commune. Hong Ha does receive support from international NGOs, partly through the Hue University of Agriculture and Forestry, to build up capacity for local services including a commune revolving credit fund.

Commune managed credit funds are expected to increase access to credit for the poor, as the banks are reluctant to deal with the small loans that are relevant for the poor. District level bank staff do not have the capacity to monitor and follow-up credit to the poor[293]. Community managed savings and credit schemes are more

[291] District meeting October 2000
[292] ibid
[293] Interview with the vice director the A Luoi district Bank for Agriculture 21/2/01

flexible than the bank in adapting to the conditions of each household, according to the Hong Ha commune People's Committee.

8.7 Social protection and livelihood promotion

Livelihood promotion involves measures to support poor households to get out of poverty, while social protection measures are meant to protect people from a decline in well-being, with the effect of reversing former gains. Conway and Turk (2002) differentiate between two types of social protection. The first being social assistance to the destitute and the second being social risk management for households who otherwise would suffer a decline in well-being as a consequence of risk.

The disaster response of the Vietnamese government, (see chapters 5 and 6) can be seen as a combination of social security and livelihood promotion. The mobilisation of food relief was both social assistance and risk management. The credit for rehabilitation of production was meant to emphasise livelihood promotion, but as a major part went to covering losses, the character of risk management was more dominant. As argued in section 7.3 on poverty, the disaster response seemed to be adequate enough to prevent the non-poor becoming poor. However, the policies did not include additional social assistance to the chronically poor, which I argue have resulted in this group of people probably falling deeper into poverty as a consequence of the disaster.

Christoplos et al. (2006) argue that synergies between the concepts of social protection and livelihood promotion potentially provide a means of achieving greater convergence of purpose across relief and development. Social protection can promote growth in a number of ways including enabling risk-taking livelihood strategies, helping to correct market failures and facilitating investments in human and physical assets.

Christoplos et al. argue that the synergies between social protection and livelihood promotion could be developed further, by for example, infusing agricultural development programmes with risk and vulnerability objectives, or advocacy for reforms that have the potential to address vulnerabilities. They refer to Devereux (2002) and Sabates-Wheeler (2004) who use the term 'transformative social protection' for addressing social risk and vulnerability through empowerment of the poor and transformation of the conditions in which they struggle to construct viable livelihoods.

Examples of interventions which have both social protection and livelihood promotion functions are credit and insurance systems that allow people to take risks, and a buffer against the negative consequences of risk. This section looks at such means of combined social protection and livelihood promotion.

Informal insurance against risk is often insufficient.

In Hai Lang and Hong the informal insurance mechanisms are often part of social relations, where generous contributions e.g. at weddings, bring an expectation of receiving help in times of need. Cook refers to studies by Morduch (1999), who finds that informal insurance mechanisms are a relatively costly and inefficient way for households to self-insure or deal with risk. They are unlikely to withstand covariate crises and recurrent shocks.

The relief supplies covered basic needs for the population in the study area for the first few months after the disaster, while individual networks subsequently became more important. (See section 7.2) The interviews suggest that these informal insurance mechanisms were insufficient for poor households, especially on the low land, who resorted to taking expensive loans from money-lenders.

Pantoja refers to a World Bank study (2000) which concludes that while informal or market-based risk management instruments are usually effective in dealing with idiosyncratic risks, they tend to break down in the face of covariate risks such as disasters. The study therefore argues for a strong state role in covering covariate risks, while idiosyncratic risks could be handled by private providers. Dercon (2002) is critical against informal risk-sharing arrangements, and idiosyncratic risk, from the perspective that they provide only limited protection, especially for the poor. There would thus be need for state involvement to reduce risk for the poor also in cases of idiosyncratic risk. Dercon finds that public safety nets are beneficial, but can have negative externalities on households not covered by the safety nets.

This agrees with the findings in this thesis. I argue that the insufficient social security for idiosyncratic risk, like health problems, result in the reduced capacity of poor households to cope with covariate risk. Conway and Turk (2002) conclude that while improvements are possible, there are reasonably effective institutional arrangements for dealing with the covariant risk of natural disaster. They argue that it is most urgent to increase social protection against idiosyncratic risk.

A fundamental issue concerns which risks should be carried by the community, and which by the individual household. Twigg et al. (2001) raise the issue of the need for mechanisms to even out fluctuations and differences in vulnerability within the community. He discusses the possibilities of building up community funds for insurance purposes and refers to Conning and Kevane (2004) who argue for community funds that can be used as collateral to attract insurance or credit to the community. Community funds have not yet been discussed in the context of disaster response in Hai Lang and A Luoi, as the needs in these cases are considered to be too great for the villages or communes to cope with[294]. Households however contribute 10 000 VND per year to a fund at province level for disaster response. There is also an expansion of savings- and credit schemes at village level, which can

[294] Staff of the Agriculture Section and commune leaders in Hai Thanh June 2004.

be used in the context of lower levels of risk, according to staff of the Agriculture Section.

Reducing the risk of taking credit

Tim Conway (2001) emphasises the role of credit and insurance policies and conditions for reducing vulnerability. The risks of taking credit need to be reduced for the poor, as a production failure and thereby failure to pay back a loan may constrain the development of the household economy for a long time.

Dercon et al. (2005) argues the case for state subsidised insurance for the poor, as shocks seriously undermine their ability to grow out of poverty. They also argue that the lack of insurance creates a risk aversion, which constrains household economic development. Dercon (2005) proposes the development of credit products with some insurance element, to allow people to take risks in areas of high climatic variation and risk.

Dercon (2005) argues that it is important to recognise that the actions people take to avoid risk have poverty implications. He gives an example from a study in Ethiopia (Dercon and Christiansen 2005), which found that there would be a significant increase in fertiliser use, if some insurance was offered against risk of crop failure. This is a common view, especially among economists, that if only the poor had the opportunities to engage in entrepreneurial investments involving risk, their household economies would grow. The fieldwork results suggest however, that entrepreneurial risk has contributed to the indebtedness and difficulties in getting out of poverty for a number of households in Hai Lang and Hong Ha. The major investments in fertiliser, for instance, contributed to the debt burden after the floods. Even when the harvest is good, the input costs may outweigh the income from the rice if the sale price is poor. I cannot see that people are risk averse, but agree that insurance against production failure would provide a well-needed buffer against the consequences of the risks that the poor take, (see section 8.5).

Possible forms of insurance against major hazards

The insurance market in Vietnam is limited, but growing rapidly, according to Caster (2005). Crop insurance is offered by the Vietnam Insurance Corporation (Bao Viet) but has so far a limited outreach. In 2000, 315 000 farming households had such an insurance (Conway and Turk 2002). Government policy documents mention the importance of developing local property insurance programs including the improved access to insurance for livestock and crops (CPRGS 2002).

Most authors conclude that insurance against hazards like major floods is very difficult, because of its covariate nature. It would require too high premiums for an insurance company to insure large losses in one blow. Dercon et al. (2005) sees a future possibility of an international reinsurance market, which may provide the back-up needed to allow for local insurance companies to be involved in the insurance of disaster risk.

Dercon et al. caution us that insurance for the poor would be difficult to sustain commercially, without subsidies, because of the relatively high transaction costs involved. Products for the poor require small and frequent instalments in order to be feasible for the economy of a poor household. Products must be flexible to the higher risks that the poor face. Group insurance may counter some of the problems. Insurance premiums would supposedly reflect the differential vulnerability of people in terms of exposure and susceptibility to hazard. It requires that the community is prepared to pay the higher costs of insurance for people at higher risk.

Dercon et al. argue for a partner-agent model of providing insurance, where the direct contacts with the poor are handled by a local microfinance institution, with the financial back-up of a large-scale insurance company, or by public sector support. An option to reduce transaction costs is the use of so-called weather-indexed bonds, in which it is the source of loss, e.g. massive rainfall that is insured, not the loss itself. (Dercon, 2005)

Wisner et al. (2004) refer to experience from An Hui province in China, where recovery was financed through a government-organised agricultural insurance scheme. Premiums were very low and took the form of a provincial tax. Experiments with insurance schemes in Chinese rural areas show that they have a potential when payments are made from collective funds rather than being a direct cost to the farmers.

Insurance cannot be a full replacement for government support in a disaster, as it only focuses on the level of physical damage incurred by the hazard. My material suggests that capacity to cope and recover is not necessarily related to the level of loss. I argue that there will always be the need to supplement insurance by safety nets based on people's variable capacity to cope. It is important that an insurance system has the administrative capacity to insure even the small losses that may be of crucial importance to the poor.

Even if the state does not choose the option of subsidised insurance for the poor, I argue that an insurance market for those who can afford it could still be positive also for the poor. In a disaster situation, the insurance system would replace losses for the better-off, which would free government capacity to focus on the poor. This would be in contrast to the situation after the 1999 disaster, when the government had to provide subsidised credit for the rehabilitation of the entire production system.

Lewis (1999) ties together the concepts of relief, rehabilitation and development by arguing that resilience is strongly related to people’s normal livelihood- and production conditions. This agrees with the experience in my study area. As a consequence, the policies for disaster mitigation and adaptation involve a great deal of effort in order to reduce the ‘normal’ production risk and stimulate income generation. The focus can be said to be on livelihood promotion, rather than on social protection. The policies have been successful in that the general level of income in the study area has risen in recent years, but the level of risk continues to be high, especially in agriculture.

The need to expand the coverage of the social protection system is mentioned in government policy documents (CPRGS 2002). Conway and Turk (2002) differentiate between two types of social protection. The first being social assistance to the destitute and the second being social risk management for households who otherwise would suffer a decline in well-being as a consequence of risk. The policy documents stress the importance of developing local property insurance programs for e.g. livestock and crops (CPRGS 2002). My material supports the importance of insurance to reduce both idiosyncratic risk and covariate risk, especially for the transient poor.

I argue however that social assistance to the chronically poor should play a greater role in the context of disaster mitigation, to avoid poor households falling ever deeper into poverty. The insufficient social protection against idiosyncratic risk, like health problems, also result in the reduced capacity of poor households to cope with covariate risk, like flood hazards.

9. Concluding discussion

On November 2nd 1999 a tropical storm came in over central Vietnam and unleashed 2300 mm of rain in four days. In the mountains, the force of the rivers pulled away chunks of the riverbanks, bridges and houses close to the river, and uprooted trees. Sand and stone settled on the fields by the river and growing crops were destroyed. When the rivers reached the lowland the force of the water was still strong enough to sweep away houses and bridges. Belongings and food in storage were swept away and animals drowned. 592 people died. The 1999 flood was a major shock to the people in the seven provinces affected. It has been called the 'flood of the century' and was given great attention in Vietnam. Massive support was mobilised for relief and recovery. In order to understand the consequences of these floods three villages were studied in Hai Lang district, Quang Tri province (low land and , hill land areas) and two villages in A Luoi district, Thua Thien Hue province (mountain areas). The villages studied have different geographical, socio-economic and institutional conditions, which influence vulnerability and resilience.

During the fieldwork it became apparent that the Vietnamese society had great capacity to respond to the disaster and that a large proportion of the population were reached by the support which gradually enabled them to recover. Important factors for the communities and households to be able to 'bounce back' and recover from the shock include local organisations with the authority and credibility to organise collective action, an active local government with strong linkages to the villages and a relatively equitable distribution of resources. The homogeneity of the community is also an important factor for resilience. In line with Adger and Kelly (1999) it is argued that vulnerability to shocks is not just related to individually controlled resources, but also to the resilience of the community as a whole.

Although the level of resilience in general is high, there are several ways in which people are vulnerable (see chapters 5 and 6). The first few years after the floods were difficult for the majority of households in the study area. According to the assessment of the interviewed households it took three years before most of them had recovered a standard of livelihood similar to before the floods. Some households, however, had not yet recovered in 2004. Constraints to recovery included production difficulties due to continued heavy rains, disease of livestock, limited access to land, reduced labour capacity due to health problems as well as the limitations of the social security system.

Vietnamese society is changing from a situation where the state had a high degree of responsibility for production and livelihoods, to a market economy in which risk is increasingly borne by the household rather than the collective. This gives rise to new types of vulnerability, which require new types of mechanisms for social protection. Collective organisation of access to resources exists to a higher degree in the study area compared to the rest of Vietnam, and has played an important role in moulding the response to disaster. Long-term recovery, however, is influenced by the growing differences in the capacities and conditions of different households.

The research question is concerned with how vulnerability can be understood in the context of a society with a high level of organisation and an active disaster response. How do we understand the vulnerability and resilience that is determined by conditions common for a village, compared to conditions that have a differentiating effect between households?

This chapter ties together the findings of the study in chapters four to eight. In order to address the research question the following issues are discussed:

- Factors in the Vietnamese society that contribute to resilience.
- Factors that result in differences in capacity to cope and recover between the villages under study.
- The importance of different types of assets for coping and recovery.
- The role of institutionalised collective access to resources.
- The relation between poverty and vulnerability.
- Measures of adaptation and risk reduction by the households, the villages and the government.

The study draws on several disciplines including, agriculture economy, human geography, sociology and political science. It is recognised that there are a wide range of factors and conditions that influence the vulnerability and resilience of individuals, households and communities. All of these have not been addressed in this thesis. The emphasis is on household livelihood conditions, mainly from the perspective of agricultural production and household access to resources. The diversification of livelihoods is discussed, but deserves to be further investigated. The analysis of the institutional context also reflects the focus on production conditions. One of the conclusions of the study is that too much of the disaster response was focused on production, which suggests a broader focus for further research. While recognising that for example socio-cultural institutions strongly impact on resilience, this aspect has not been incorporated in the study.

The study focuses on the household as the lowest unit of analysis. Household conditions are discussed in the context of the village, commune and district they belong to. This means leaving out an analysis of the individual differences within households, while it is acknowledged that such differences, e.g. those related to gender, are important. The delimitations of the study are elaborated in section 1.2.

The concepts of vulnerability and resilience

As in Hewitt (1997) the study distinguishes between hazard and disaster. The results of the present study show a high degree of resilience despite the devastating magnitude of the flood hazard, which reinforces Hewitt's argument that there is not necessarily a relation between exposure to hazards and vulnerability. The definition of Wisner et al. (2004) is incorporated, in which vulnerability is '*the characteristics of a person or group and their situation that negatively influence their capacity to anticipate, cope with, resist and recover from the impacts of a hazard'*. The focus is on the vulnerability of households, in the context of the geographical, socio-economic and institutional environment at local level.

For the concept of resilience, the definition by Carl Folke et al. (2002) is followed here, where resilience is the capacity to '*maintain the functionality of a system, when it is disturbed. To maintain the elements needed to renew or reorganise the system in order to maintain its main functions.* It is partly the opposite of vulnerability and is used in the sense of the capacity of households and communities to 'bounce back' and recover after shock or disaster. The term also includes an aspect of adaptation, i.e. capacity to reorganise in order to reduce vulnerability to future hazards.

A resilient society

The response to the 1999 disaster was massive. The entire Vietnamese society including schools, industries, all kinds of organisations and individuals contributed relief to the people in the affected areas. Local level government played an active role in coordinating the response to the disaster. The interviews suggest that households perceived the distribution of relief as adequate and that basic needs were addressed during the first three months. The Red Cross, the Farmers' Association, the Women's Union and other local organisations are well anchored in the villages, and many village volunteers worked through these organisations in the distribution of relief and the re-construction of houses. In Hai Lang district the cooperatives organised the village repairs of damaged infrastructure with the help of the army sections at province, district and commune level. The district government provided guarantees which enabled the cooperatives to arrange for drainage pumps, draught power and production inputs on bank credit. The national government provided resources for bank credit to the households for the rehabilitation of production.

Protection against hazards has a prominent role in Vietnam as the country is exposed to frequent storms and floods. This involves dike protection, drainage capacity, early warning systems and the organisational capacity to respond with relief and rehabilitation when floods occur[295]. The efficiency of society in mobilising forces in response to disaster may partly be credited to a legacy of the war and the experience of joint action in response to crisis. The structure of authority and cooperation between local government, cooperatives, mass organisations and households was crucial for the disaster response to function smoothly.

Peter Evans (1996) argues that close state-society cooperation can result in synergetic effects in raising the capacity for collective action. Such synergy, he argues, may arise in societies with equitable distribution of resources, a strong role of the state in providing and coordinating resources and strong state-private relations. These are conditions that to a large extent can be seen to be characterizing the study area. The relatively equitable distribution of land in Hai Lang and A Luoi means that income differences in the villages are limited, compared to the urban areas, and the village population have relatively common interests. It can be argued that the homogeneity of the communities is an enabling factor for the strong collective action of the disaster response.

[295] Disaster Mitigation Strategy (Govt of VN 2001)

The strong roles of the state and the local collective institutions in Hai Lang and A Luoi appear to be mainly positive in coping with the floods, but with some aspects that may affect resilience in a negative way. The limited development of private actors in market relations may reduce access to resources that can be important for some aspects of recovery. Many households were hesitant about where and how to access inputs for production if these were not supplied through the cooperatives. The availability of private employment opportunities is limited, which reduces the possibilities for households to generate additional income in aid of coping and recovery.

In conclusion: The massive disaster response in society provided broad conditions for coping in the immediate disaster situation. The experience of the study suggests that community norms in Hai Lang and A Luoi supported attention to the well-being of all households during this phase. For long- term recovery, however, the households appear to be more dependent on their own resources and family networks. This emphasises the importance of the time perspective when discussing capacity to cope with and recover from disaster.

Differences in government support between the study villages

Initially, state disaster response in Hong Ha commune in the mountains seems not to have been quite as efficient as in the case of Hai Lang district. This was partly due to greater distances and fewer routines for flood response (see chapter 6). The government's preparedness to deal with disaster was mainly focused on low land conditions as can be seen by documents from the Centre for Flood and Storm Control (Govt of VN 2001). The interviews show however, that the commune level authorities and organisations in Hong Ha played an even greater role in mobilising support and relief compared to in Hai Lang. The attention paid by the province level government to aid recovery in the mountains, picked up and led to major investments in repairing and expanding infrastructure in Hong Ha in the years following the floods.

The state credit support for flood recovery that was provided in Hai Lang district was provided to households in Hong Ha to only a very limited degree. The justification was that Hong Ha has less market oriented production. The main household losses consisted of land, food crops and wood for construction. There were however losses of pigs and cattle reared for sale, and the destruction of fish ponds, which all failed to receive credit support. There was no support to recover the inundated fields, which constituted major flood damage for the households who spent months in manually recovering their land. The government did however support seed and fertiliser for the re-establishment of crops.

The impact of the 1999 floods on production in the mountain areas was greater than during previous floods partly because of changes in the production system. The cultivation in Hong Ha commune has been transferred from the hill slopes to the river valleys during the past 10-20 years, which means that it is more exposed to flash floods. There seems to have been a delay in government realisation of the

needs for support to recovery in these areas, but attention to the impact of flash floods has increased in more recent policy documents.

The government support for rehabilitation of production also differed between the low land and hill land villages in Hai Lang district. The government credit for this purpose was distributed to households according to acreage of allocated paddy land. This of course meant a bias towards the low land villages. The majority of people in Vietnam are low land paddy rice producers, and historically the state has 'always' prioritised securing paddy rice production (Kerkvliet 2005). This perspective appears to have dominated also in the disaster response. Hill land production has recently developed strongly in terms of perennial crops, including fruit trees and pepper, which constituted a major part of the losses in these areas. The support for rehabilitation of production, however, did not address these losses. The hill land population do have some allocated paddy land, which entitled them to at least some of the flood recovery credit. The fishermen do not have paddy land at all and were therefore unable to access the credit.

In conclusion: The thesis suggests that while policies focused on the support for the needs of the majority, the part of the population who do not have paddy rice as their basic means of livelihood got less attention. The importance of adapting policies for disaster response to the varying conditions in and between the villages leads to questions for further research. Such an area of research concerns the importance of the level of decision-making and its consequences for adaptation of policies to local conditions. This conclusion is reinforced by the circumstance of differences in means of coping as discussed below.

Differences in conditions for coping between the study villages

Government relief and credit support was not enough to prevent the poor households in the low land villages from taking informal loans at high interest rates for basic food needs. The food relief organised by the state lasted three to four months after the floods. In Hong Ha, in the mountains, the commune leaders continued to mobilise food relief for the whole commune population until the rice harvest in June. In Hai Lang the households depended on individual resources and social networks to secure food needs between March and June. The ways in which this period of food shortage was handled was critical to how households managed to continue the recovery process. It seems to have been more difficult for low land households than for people in the hill land villages. The latter had more access to income from minor forest products, day labour and small trading. In the low land economy there are fewer alternative sources of income during the months before the rice harvest. Poor households took informal food loans under conditions in which the loan should be paid back after harvest at 130-150 percent of the loan value. In many cases this caused debts that continued to burden the household economy for many years.

The period of recovery was prolonged by repeated seasonal stress and production risk in the crop seasons following the floods. The disaster which happened in November was in Hai Lang followed by continued rains, which led to high production costs for drainage and the loss of seed and fertilisers that were washed

away. The spring crop of 2001 was again reduced due to heavy rains just before harvest, as was the autumn crop of 2002.

Almost all interviewed households immediately reinvested in pigs and poultry to replace the animals lost in the floods, but the environment had become polluted by excrement, which resulted in a high degree of animal disease. Many of the newly purchased animals perished. This problem was greater on the low land, as the water inundation lasted longer there. Income from animal husbandry was crucial to pay back the 'flood-recovery-credit'. As the credit was used to cover losses rather than for new income generation it took at least two years before households were able to repay the loans.

The hill land households had a disadvantage, as they lost sources of long-term income generation like fruit trees and pepper, while government support focused on recovery of short-term production for the immediate coping requirements. Many hill land households faced several difficult years before they could recover a livelihood situation similar to that before the floods.

In the mountain commune, the months after the floods were dominated by efforts to recover the fields for food production, which required very hard work. This involved the manual clearing of deep layers of sand and stone from the paddy and dry land fields, uprooting the sugarcane to make way for food crops, clearing old swidden fields and grass land. Replanting cassava, which is the main food crop, takes 7-9 months to mature, resulting in a long period of 'coping' before food production was stabilised.

In conclusion: The experience of the study suggests that conditions for coping were more difficult on the low land compared to the hill land village. This highlights the vulnerability of households who depend mainly on one source of income for their livelihood. This, however, is not necessarily the case for long-term recovery, where the loss of perennial crops had long-term negative impact for the hill land households. The results also suggest the importance of attention to 'non-economic' losses, i.e. losses that 'only' affect consumption and not income generation.

The impact of the floods not only involved the immediate losses, but also the long-term negative impact on the productivity of the land and deteriorated sanitary conditions, which contributed to the difficulties in coping and recovery. This emphasises the importance of attention to post-disaster production conditions.

The importance of different types of assets for coping and recovery

In the Sustainable Livelihoods framework (see section 2.2) the household's assets are central to their livelihood possibilities. These are both tangible and non-tangible and include physical, financial, human, natural and social capital. Some authors add 'institutional capital', which is important in my analysis. Following Twigg (2003) the Sustainable Livelihoods approach is useful for analysing the role of different types of assets for coping and recovery. Also the 'access model' by Wisner et al. (2004) is helpful in analysing access to assets and livelihood opportunities which

may enable them to reduce their vulnerability (see sections 7.2 and 7.4). Both this model and the Sustainable Livelihoods framework focus on the agency of the household. They acknowledge that household decisions are made in an environment of policies, institutions and social and economic relations. Household access and livelihood decisions in the study area appear to be strongly influenced by this environment, which here leads to emphasising this more than household agency.

The focus on household access to resources for coping means that the analysis is different from the discussion of the 'normal' livelihood context of the households, as the latter often emphasises income generation. The assets required for coping require short-term, immediate outputs. For example, the collection of minor forest products was of great importance for coping in the hill land and mountain villages, while it was considered as demanding too much labour to be relevant in a non-disaster situation. The present development trend whereby forest land is individually allocated to households may have negative impact on the coping capacity of the households who lose common access to this resource.

Government support for recovery was specifically oriented towards agricultural production. The assets, capacities and opportunities required to make a living in the post-disaster situation, however, also involve other areas of importance. On the one hand, a support for paid labour opportunities in re-construction works may have enabled poor households on the low land to manage without taking informal loans. On the other hand, the interview results suggest a correlation between being poor and the lack of labour capacity in the household, which means that all poor households cannot be supported by increasing the opportunities for labour income.

Non-tangible assets, like human, social and institutional capital were important for coping in the study area. Labour capacity was a vital resource in the mountains in order to recover the land that was inundated with sand and stone, and clearing new land. Labour capacity was required for the collection of minor forest products and as day labourers for other farmers, which were important coping strategies in the hill land village. Households with surplus labour have family members migrating to other areas in Vietnam in order to supplement household income. The interviews show that households with only a small workforce, e.g. due to health problems, have greater difficulties in coping with shocks.

The above means of coping did not only require labour but also social and institutional capital. In Hai Lang, the access to minor forest products and day labour was mainly available to the hill land households. They had previous contacts for such access, as it is part of their 'normal' way of making a living, as a supplement to their farm income. Low land households also supplement their income through day labour for other farmers during rice harvest, but such opportunities were obviously not available during the critical coping period before the harvest. Young people in the mountains did day labour for other households in the commune, but such opportunities were limited as few households had resources to pay for labour. There are few people from Hong Ha who migrate for work to other areas. They belong to the ethnic minorities, and as such perceive more difficulties in making a living in the

'majority' areas of Vietnam (see section 8.3). Belonging to the majority can in itself be seen as a type of 'social capital'.

Start and Johnson (2004) stress the importance of the type of assets that are easily convertible into cash whereby households are in a position to solve urgent needs. Unlike the rice farmers in the plains, the households in the hill land village had more access to assets that provided a small daily income. This was important in order to avoid taking expensive loans, as was frequently done on the low land. According to the interviews, households did not sell productive assets in order to cope with the difficulties and their future possibilities of income generation were therefore not undermined. The better-off households interviewed had savings and support from relatives to a higher degree than other households. They also have a larger proportion of their income from business and trading, which was less affected by the floods, and contributed to better conditions for coping and recovery.

The economy in the mountain commune is not so monetised. The focus was not on assets that could be turned into income. Instead it was access to land for food production that was perceived by both households and local authorities to be the most important resource for coping and recovery (see chapter 6). Land however, is a limited resource, as large areas that could have been used for food production, according to the commune People's Committee, have been planted with trees in the efforts to protect the watershed. In order to solve their food needs, households therefore had to cultivate marginal areas with low productivity and high risk.

Access to common property resources sometimes fall outside of the analysis of assets. This is classified as institutional capital, which is an addition to the five 'capitals' normally mentioned in the Sustainable Livelihoods framework. Access to minor forest products was an important resource for the hill land households. The on-going formalisation of tenure rights to the forest may lead to reduced access for the poor. Policies on allocation of forest land in Hai Lang favours better-off households with resources to invest. Access to forest land is becoming a differentiating factor among hill land households. This also means increased differentiation in exposure to floods, as the forest land is higher and less risk prone. Devereux (1996) points to the tendency to formalise the control and management of natural resources in a way that can reduce the access for already marginalised groups. He argues that the individualisation of common property rights may destroy social cohesion and be economically stratifying.

In Hai Lang the role of credit was vital for recovery. The fact that the distribution of credit was based on household tenure of paddy land meant that poor households which normally had difficulties getting credit received it this time. Apart from the credit for rehabilitating production, the extension of the period in which households were obliged to pay back old debts, provided them with the space to recover. The extensions were granted on an individual basis, and could be for several years in the case of some households. From 2002 state allocation of credit increased significantly and the households interviewed reported an improved access. The establishment of the Bank for Social Policy in 2004 (replacing the 'Bank for the Poor') reinforced the state policy of subsidised credit as a tool for poverty reduction. In 2004 the manager

of the Hai Lang branch of the Bank for Social Policy reported that 20 percent of households who had old loans from before the floods had not yet been able to repay them, but were still allowed to take new loans for income generation (see section 5.4). By providing additional funding for the banking system, the state avoided a bank crisis such as the one which occurred in the case of the Bangladesh Floods in 1998, where the micro-finance institutions suffered a severe shortage of funds when their clients failed to repay their loans as a result of the floods (del Ninno et al. 2001).

According to the vice chairman of the Hai Lang People's Committee and the Hai Lang bank manager, it was seen as an important principle that state support should be provided as credit, rather than as grants, in order to maintain a discipline of repayment. The same argument applied to the principle that old credit should be prolonged rather than cancelled. This policy appears to have counteracted the risk of the credit system being undermined as a result of generous disaster response.

A stable house appears to be an asset that is highly valued in the study area. Almost all the interviewed households have invested in a stronger house since the 1999 floods. The investments have largely been made with informal loans which are now constraining the economic recovery for several households. They argue that official bank credits for house construction ought to be part of disaster mitigation policies.

In conclusion, the experience of the study points at the importance of non-tangible assets for coping with crises, especially labour and social and institutional 'capital'. The results highlight that the assets needed for coping may be different from what the households normally rely on for their livelihood. The demands put on the institutions for access to e.g. land, forest resources and labour opportunities are different in disaster response compared to during normal circumstances. The capacity of the 'normal' institutions for access to resources to adapt to situations of coping with disaster is an important issue for further analysis. The institutions for micro-finance did adapt as a consequence of the disaster, which appears to have been important for recovery.

The role of institutionalised and collectively organised access to resources

In Hai Lang a number of services are institutionalised through the cooperatives. It is argued that the cooperative organisation of resources for paddy production is more accessible to the poor, compared to resources for other lines of production, which are dependent on individual market contacts. Other authors have seen similar patterns in other contexts. For example, Bebbington's (1999) experience from the Andes suggests that institutionalised access to knowledge, credit, irrigation etc is an advantage for the poor farmers compared to access through the market and kin networks.

Adger (2001), who has studied areas in the north of Vietnam, is concerned about what he sees as an erosion of organisational culture, which in turn leads to an erosion of community capacity for disaster preparedness and response. Adger and Kelly (1999) argue that there is the risk that increasing disparities in wealth and

increasing levels of indebtedness and landlessness may weaken kin and community support mechanisms and put pressure on local institutions and cooperative structures. On the other hand he refers to authors like Malarney (1997) who sees a re-emergence of local level institutions associated with local collective action. In Hai Lang and A Luoi districts the economic reforms have not led to erosion of collective organisation, but the cooperatives in Hai Lang are likely to face challenges when the economy becomes more and more diversified. Their central role is in the management of irrigation and drainage, which seems likely to remain important. In the interviews the households emphasised the importance of a functioning collective organisation of water management in order to reduce stress. The cooperatives also focus on strengthening village level capacity for self-reliance with increased seed production, storage facilities, and savings- and credit schemes. These services, as well as input supply and marketing, are likely to face more competition from private actors in future. The cooperatives in Hai Lang are being encouraged by the government to change from being broad community organisations to be more specialised member organisations focused on village level business development. If the cooperatives become more business oriented there may be an increasing need for other forms of village organisation capable of attending to all households.

In conclusion: The thesis argues that institutionalised access to resources often improves access to resources for the poor, as compared to private market options. The cooperatives, however, are so intimately bound to rice production that they may have difficulties in establishing a role in facilitating diversification. While the cooperatives facilitate community resilience to shocks according to the existing pattern of production, the household resilience may be dependent on the extent to which these can be changed.

Linkages between poverty and vulnerability

Hulme et al. (2001) discuss in terms of the 'transient poor' as distinct from the ‘chronically poor’. Transient poverty is when people fluctuate above and below the poverty line and occasionally dip into poverty due to an extreme decline in income. A large number of people in the study villages are transient poor in that sense. The 1999 floods pushed them below the poverty line for 2-3 years after the floods, but since then they have improved their situation. I argue that government policies and community level action in the 1999 disaster response addressed the whole population as if they were transient poor. The insufficient insurance system meant that the government provided resources for rehabilitation of production for the entire population, in order to avoid households declining into poverty. While on the one hand this meant an ‘over-supply’ of resources to better-off households with more individual buffers, on the other hand it meant that there was a lack of resources for the chronically poor. The needs of the chronically poor are different from the needs of the transient poor as they struggle with additional difficulties, like health problems and debts, which constrain their capacity to recover. The interviewed households who said that they were worse-off in 2002 compared to before the floods, were most of them poor even before the floods, and would have required additional support to avoid descending deeper into poverty. I argue that neither the

system for humanitarian assistance nor the social security system was adapted to their needs.

In conclusion the study suggests that there is a linkage between poverty and vulnerability in that the factors which are impediments to recovery for the chronically poor are frequently the same as those causing poverty under 'normal' conditions. Some of these factors need to be addressed simultaneously with disaster response for the latter to be effective. An improvement of the health insurance system and a micro-finance system that can constrain the practice of high-interest money lending are important such factors.

Disaster mitigation and adaptation

A common critique against interventions in support of relief and rehabilitation is that they tend to lead to the reconstruction of pre-existing systems thereby risking the rebuilding of a livelihood context in which people continue to be vulnerable and exposed. (Christoplos et al. 2004).

This may be the case for the mountain commune (see section 8.5) where investments continue to be focused on production in the river valleys, despite the flood risk. Integrated agro-forestry production on the lower slopes would be a more resilient strategy, according to commune and district authorities. On the low land it is more difficult to avoid the exposure to disastrous floods, unless the whole population resettles, which is not feasible. A limited number of low land households have moved to the mountain district of Huong Hoa, in Quang Tri province, and are receiving government support to start up a new life there. The resettled households face a difficult trade-off between the risk of staying put in their exposed location or the risks involved in starting a new livelihood in an unfamiliar environment. Resettlement may also involve the risk of social conflict over resources, as has occurred in other contexts (N.V.Chinh 2001).

Investments in dikes cannot prevent major flood hazards in the study area, nor are the policies geared towards building dikes high enough to stop the autumn flooding. Drainage structures are however vital to reduce the impact of floods. Disaster mitigation investments also involve the strengthening of safe refuge for people and their belongings, through housing, boats, storage and preparedness (Govt of VN 2001). In the mountains there have been big investments in concrete covering of the hill slopes close to the road to avoid landslides.

Resilience to disaster is strongly related to people's normal livelihood- and production conditions. Mitigation of 'normal' stress during the crop season helps to speed up recovery. This principle seems to guide Vietnamese policy in that disaster mitigation and adaptation strategies also involves a high degree of effort which aims at reducing the 'normal' production risk and stimulate diversification and income generation. The approach to risk reduction is to a large extent focused on infrastructure in order to safe-guard production. Investments in infrastructural protection of the crop, however, involves the risk of high costs of repair when the

structures are damaged. During the autumns of 2004, 2005 and 2006 there were heavy storms damaging collective infrastructure.

The interview results show that people perceive both on-farm and off-farm diversification as a way of strengthening of resilience. According to the Hai Lang Agriculture Section the diversification has increased strongly since 2002. This is not only a risk reduction strategy, but a result of gradually higher household income and scope for more investment. Diversification is stronger among the better-off households as the investments are often associated with a significant risk. The interviews showed that some households had become worse-off, at least temporarily, because of failed investments e.g. in animal husbandry. Diversification thus needs to go hand in hand with measures to reduce and mitigate production risk.

Concerning non-agriculture diversification, the better-off households diversify more into business and trading, while the middle-income and poor households often migrate for work during shorter periods. As production risk is high, this is an important way of household 'self-insurance'. The district authorities have strategies to expand rural employment opportunities by attracting industries to their district (UBND 2005).

The so called diversification policies for Hong Ha commune are focused on the export production of rubber. Although there are chances of income generation, which reduces vulnerability, there are also the risks of flood damage and market failure. The mountain population have particular difficulties in diversifying as they are remote from markets and services. The access to land and production inputs are partly tied to participation in the government production 'campaigns'. There is concern that the strong policy influence may limit household responsibility in making risk assessments. Poor households tend to focus production according to which resources are supplied, rather than according to their individual assets and capabilities.

In conclusion, there may be a tension between a situation where diversification leads to a broader range of options in coping and recovery, and a situation in which the reduced homogeneity of the community has a negative impact on the motivation for collective action. Folke et al. (2000) emphasise that diversity is not just an insurance against uncertainty. The mix of experiences stimulates adaptation and learning, helps people to cope with change and facilitates innovation following disturbances and crises. The fact that the better-off are in a stronger position to diversify may lead to shifts in the priorities of the community. As in Adger (2000), it is argued here that adaptation and flexibility requires control over resources. If such control is concentrated within a smaller part of the community, the modes of adaptation may not necessarily be in the interests of the poor.

'Pressure and Release'

Wisner et al. (2004) use the 'Pressure and Release' (PAR) model to analyse household vulnerability. In PAR they trace the unsafe conditions back to what they call dynamic pressures and root causes. The latter must be addressed in order for the

pressures causing disaster to be 'released', i.e. removed. The 1999 floods was of such magnitude that it is difficult to imagine a society where it would not have caused disaster, but the concepts of pressures and root causes can be used in the discussion of how best to reduce the disaster, in terms of flood impact and the capacity to cope and recover.

In Hong Ha commune such pressures include the focus of production in the river valley, the limited access to land, the limited access to markets and labour opportunities and the limited access to health care. The root causes of these pressures include a policy discourse, and the structure of influence in Vietnamese society centred on the low land paddy economy. This leads to a development in the mountain district that focuses on forest protection to reduce low land flooding, on the introduction of paddy rice cultivation, and on export oriented crops which benefit the province economy. This development perspective may increase living standards for the mountain population, but it also involves increased risks. Commune and district authorities in Hong Ha and A Luoi argue for the development of the land and forest resources in a way that combines food security, income generation and environmental protection objectives, at the same time as spreading risks. This would be possible, they argue, through allocation of forest land to households and groups of households to develop forest gardens and enrich the forest with fruit trees, valuable species and food crops.

In Hai Lang district, the pressures include the insufficient social security system, especially the high costs of health care, which have resulted in that many poor households are indebted and thereby increasingly vulnerable to shocks. The dominance of only one crop, rice, in the economy of many households on the low land, especially the poor, increases their vulnerability as they have few other sources of income whenever the rice is lost. The frequent crop losses cause strain to the economy of most households in the district, which reduces the margins to cope with disaster. The root causes behind these pressures relate to high levels of health problems in both Hai Lang and A Luoi, believed to be related to the US chemical bombing (Agent Orange) of the area during the 'American War'. The limitation in the state budget for social security is also related to the war, as a large part of that budget goes to compensation to war invalids (see section 3.2).

Poor households who are dependent on rice production easily get stuck in a pattern where all resources go to ensuring rice production for food security and nothing is left to diversify in order to spread the risk. The protection against the risk of production losses is vital in enabling households to gradually build a surplus for supplementary forms of income generation.

In conclusion: Resilient society, vulnerable people

The title of the thesis suggests that society in Hai Lang and A Luoi has a high level of resilience to flood disaster. Relating to the terminology of Folke et al. (2002) 'the social system' has 'maintained its functionality' and the 'elements needed to renew or reorganise the system in response to the shock were maintained'. In general the living standard in the study area is higher today than it was in 1999, before the

floods, according to district People's Committee reports, and the level of poverty has decreased (see discussion in 5.4, 6.2 and 7.3). The general opinion of those interviewed was that resilience to floods is increasing gradually as society develops. As this happens, more people will have houses that can resist floods and more people will have assets and savings to bridge difficult times. The state and the local communities are also expected to have more resources to support coping and recovery.

The argument of the thesis is in line with Lewis (1999) who finds that the condition of a person, structure or community before a disaster has significant bearing on the capacity to recover. I argue that resilience to disaster is very much linked to the socio-economic and institutional conditions and capacities of households to improve their livelihood during 'normal' years. There are recent policy developments in Vietnam, which supports such capacities. Both agricultural and non-agricultural diversification of production and livelihood opportunities are being stimulated, in order to raise income and spread risks (CPRGS 2002). The infrastructure for drainage has been significantly improved in Hai Lang, which is important both to reduce the impact of major floods, but also to reduce seasonal stress and crop failure during 'normal' years. The thesis argues that reduced production risk during 'normal' years significantly increases resilience to disaster. The Comprehensive Poverty Reduction and Growth Strategy expresses the government ambition for a universal social security system. Since 2003 the health insurance for poor households has been improved and insurance against production failure has started to develop (Castel 2005), although these had not yet reached Hai Lang and A Luoi to any major extent at the time of the study.

The definition of resilience by Folke et al. emphasises reorganisation and adaptation in order to reduce vulnerability to future shocks. The above policy efforts represent adaptation, even though it does not involve reorganisation, as they are reinforcements of previous policy directions. Policies of forest protection have been adapted to allow for the allocation to households and communities, in order to increase household benefits from the forest (revised Land Law 2003). This, however, has not yet been implemented in Hong Ha commune. While households in Hong Ha argue for such allocation as a way to increase resilience, the allocation of forest in Hai Lang is perceived by villagers as more complicated, as it may reduce the access of poor households to minor forest products and grazing land (see sections 7.2 and 8.4).

'Vulnerable people' in the title of the thesis refers to the vulnerability of a majority of the population in the study area who face the continuous risks of crop losses and damage to property and lives, with the frequent storms. The thesis emphasises the specific vulnerability of chronically poor households. The material suggests that poverty is often connected to the lack of labour and to high health costs. The lack of labour and poor health reduces the capacity of these households to mobilise 'emergency income' to cope and recover. Instead they feel obliged to take informal loans with high interest in order to secure their basic needs. It is argued that this increases the risk of those households sinking deeper into poverty. As Davies and Hossain (1997) I also stress that vulnerability to hazards needs to be understood as a

downward spiral of increasing vulnerability rather than a one-off event. It is argued here that the measures of reducing vulnerability to disaster are very much linked to poverty alleviation and the improvement of social security.

List of References

Action Aid Vietnam 1999. *Ha Tinh. A Participatory Poverty Assessment.* Hanoi: Action Aid Vietnam.

Adger, N. and Kelly, M. 1999. Social vulnerability to climate change and the architecture of entitlements. *Mitigation and Adaptation Strategies for Global Change* 4: 253-266

Adger, N. 2000a. Institutional adaptation to environmental risk under the transition in Vietnam. *Annals of the Association of American Geographers* 90:738-58

Adger, N. 2000b. Social and Ecological Resilience: Are they related? *Progress in Human Geography 24(3).*

Adger, N., Kelly, M., Nguyen Huu Ninh (eds) 2001. *Living With Environmental Change: Social Vulnerability and Resilience in Vietnam.* London: Routledge

Bebbington, A. 1999. *A framework for analysing peasant vulnerability, rural livelihoods and poverty in the Andes.* London: International Institute for Environment and Development.

Beck, T. 2005. *Learning lessons from disaster recovery: The case of Bangladesh.* Disaster Risk Management Working Paper Series no. 11. The World Bank

Beckman, M. 2001. *Extension, Poverty and Vulnerability in Vietnam: Country Study for the Neuchatel Initiative.* ODI Working Paper 152. London: Overseas Development Institute.

Beckman, M. 2004. *Report from an evaluation of the Community-based Upland Natural Resource Management Project.* Hue: Hue University of Agriculture and Forestry.

Benson, C. 1997. *The economic impact of natural disasters in Vietnam.* ODI Working Paper 98. London: Overseas Development Institute

Benson, C. and E. Clay. 2001. *Bangladesh Disasters and Public Finance. Economic and Financial Impacts of Natural Disaster: An assessment of their effects and options for mitigation.* Country Study 2. Washington D.C.: The World Bank Disaster Management Facility.

Brown, W. and Nagarajan, G. 2000. *Bangladesh experience of adapting financial services to cope with floods: Implications for the microfinance industry*. Bethesda: Development Alternatives Inc.

Buchanan-Smith, M. and Maxwell, S. 1994. *Linking relief and development. An introduction and an overview.* IDS Bulletin Volume 24. Brighton: Institute of Development Studies.

Bui Xuan Duc 2003. Ancient 'Huong Uoc' and new 'Huong Uoc': Differences and similarities. *Vietnam Law and Legal Forum, September 2003.*

Castel, P. 2005 *Vietnam: Toward Universal Social Protection: Policy Issues and Research Implications.* Discussion paper 13. Making Markets Work Better for the Poor. Hanoi: Asian Development Bank

Chambers, R. and Conway, R. 1992. *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*. IDS Working Paper No. 296. Brighton: Institute of Development Studies.

Christoplos, I. 1998. *Sensemaking in Services: Perspectives from the Frontline in Relief and Development.* Ph.D. Thesis. Swedish University of Agriculture Sciences.

Christoplos, I., Longley, C., Slaymaker, T. 2004. *The changing roles of agriculture rehabilitation. Linking relief, development and support to rural livelihoods.*

London: Overseas Development Institute and Nairobi: International Crops Research Institute for the Semi-Arid Tropics.
Christoplos, I. and Bach Tan Sinh 2004. *Outcome evaluation of UNDP Capacity Building for Disaster Risk Reduction in Vietnam.*
Christoplos, I., Longley, C., Slaymaker, T. 2006a. *Agricultural Rehabilitation: Mapping the linkages between humanitarian relief, social protection and development.* HPG report 21. London: Overseas Development Institute.
Christoplos, I. 2006b. *Links between relief, rehabilitation and development in the tsunami disaster response.* London: Tsunami Evaluation Committee.
Conning, J. and Kevane, M. 2004. Chapter 15 in Dercon, S. *Insurance against Poverty*. Oxford: Oxford University Press.
Conway, T. and Turk, C. 2002. *Reducing Vulnerability and Providing Social Protection.* Hanoi: Poverty Task Force and World Bank Office Vietnam.
Cook, S. 2002. From rice bowl to safety net: Insecurity and social protection during China's transition. *Development Policy Review 20(5).*
Davies, S. 1996. *Adaptable Livelihoods: Coping with Food Insecurity in the Malian Sahel.* London: Macmillan Press.
Davies, S. and Hossain, N. 1997. *Livelihood adaptation, public action and civil society: A review of the literature.* IDS Working Paper 57. Brigthon: Institute of Development Studies.
Dercon, S. 2005a. *Vulnerability: a micro perspective.*
Dercon et al. 2005b. *Insurance for the Poor.* QEH Working Paper Series 125
Devereux, S. 2002. *Social Protection for the Poor: Lessons from recent international experience.* IDS Working Paper 142. Brighton: Institute of Development Studies.
Devereux, S. 2002. *Can Social Safety Nets Reduce Chronic Poverty?*, Development Policy Review, vol. 20, no. 5, pp. 657-675
Devereux, S. 1996. *Fuzzy Entitlements and Common Property Resources: Struggles over Rights to Communal Land in Namibia.* IDS Working Paper 44. Brighton: Institute of Development Studies.
Dương Phước Thu 2000. Bão lụt trên đất Thưa Thiên Huế, xưa và nay. (Floods in Thua Thien Hue, in history and today). In: Thưa Thiên Huế - Cơn Đại Hồng Thủy Năm 1999.
Ellis, F. 2000. *Rural Livelihoods and Diversity in Developing Countries.* Oxford: Oxford University Press.
Evans, P. 1996. Government Action, Social Capital and Development: Reviewing the Evidence on Synergy. *World Development* 24(6).
FAO and CIFOR 2005. *Forests and Floods. Drowning in fiction or thriving on facts?* RAP Publication 2005/03. Forest Perspectives 2. Bogor Barat: Center for International Forestry Research, and Bangkok: Food and Agriculture Organisation of the United Nations.
Feuchtwang, S. 1995. Social Support Arrangements among Households in Rich and Poor Villages: Some Preliminary Results of an Enquiry. In: Krieg, R. and Schadler, M. (eds) *Social Security in the People's Republic of China.* Hamburg: Mitteilungen des Instituts fur Asienkunde.
Fforde, A. (2003). Report on Residential Clusters Research in An Giang, Dong Thap and Long An Provinces in the Mekong Delta, Vietnam: CARE International in Vietnam.

Folke, C. et al. 2002. *Resilience and Sustainable Development. Building Adaptive Capacity in a World of Transformation.* Stockholm: Environmental Advisory Council.
Fritzen, S. 2002. *The 'foundation of public administration'? Decentralisation and its discontents in transitional Vietnam.* Asia Conference of governance in Asia: Culture, Ethics, Institutional Reform and Policy Change. Hong Kong.
Government of Vietnam 1998. *Decision no.135/QD-TTg (31/7/1998) approving the program for socio-economic development of the communes in most difficulties, mountainous and remote communes.*
Government of Vietnam 1998. *Decree No.29/1998/ND-CP, Regulations on the Exercise of Democracy in Communes.*
Government of Vietnam 1998. *Directive by the Prime Minister No.24/1998/CT-TTg on the compilation and implementation of rural conventions and rules of villages, hamlets and population clusters.*
Government of Vietnam 2001. *Second National Strategy and Action Plan for Disaster Mitigation and Management in Vietnam - 2001 to 2020.* Hanoi: Ministry of Agriculture and Rural Development.
Gulli, H. 1998. *Microfinance and Poverty: Questioning the Conventional Wisdom.* Washington D.C.: Microenterprise Unit, Sustainable Development Department, Inter-American Bank.
Gurenko, E. and Lester, R. 2004. *Rapid Onset Natural Disasters: The role of financing in effective risk management.* World Bank Policy Research Working Paper 3278.
Hewitt, K. 1997. *Regions of Risk. A geographical introduction to disasters.* Essex: Addison Wesley Longman Ltd.
Hobley, M. and Shields, D. 2000. *The reality of trying to transform structures and processes.* ODI Working Paper 132. London: Overseas Development Institute.
Hobley, M. 2001. *Unpacking the PIP box.* Unpublished.
Hulme, D., Moore, K. and Shepard, A. 2001. *Chronic poverty: Meanings and analytical frameworks.* CPRC Working Paper 2. Institute for Development Policy and Management. University of Manchester.
Hy Van Luong 1993. Economic reform and the intensification of rituals in two north Vietnamese villages 1980-1990. In Ljunggren, B. (ed.) *The Challenge of Reform in Indochina*. Cambridge: Harvard University Press.
IFPRI 2001. *Recovering from the shock of the 1998 flood. Household food security and nutritional status one year later.* Dhaka: International Food Policy Research Institute.
Jalan, J. and Ravallion, M. 2004. chapter 5 in Dercon, S. (ed) *Insurance against Poverty.* Oxford: Oxford University Press.
Jamieson, N. 1993. *Understanding Vietnam.* Berkeley: University of California Press.
Johnson, C. 1997. *Rules, Norms and the Pursuit of Sustainable Livelihoods.* IDS Working Paper 52. Sussex: Institute of Development Studies
Jorgensen, B. 2006. *Development and 'The Other Within'. The culturalisation of the political economy of poverty in the northern uplands of Vietnam.* Ph.d. Thesis. Department of Peace and Development Research. Göteborg University
Kelly, P. M., Hoang Minh Hien, and Tran Viet Lien 2001. Responding to El Nino and La Nina: averting tropical cyclone impacts. In: Adger, N., Nguyen Huu

Ninh. *Living with Environmental Change: Social vulnerability, adaptation and resilience in Vietnam*.. London: Routledge.
Kerkvliet, B. 2006. Agriculture Land in Vietnam: Markets Tempered by Family, Community and Socialist Practices. *Journal of Agrarian Change, Vol.6, No.3.*
Lam, Wai Fung 1996. Institutional design of public agencies and co-production: A study of irrigation associations in Taiwan. *World Development* vol.24 (6)
Le Bach Duong et al. 2001. *Civil Society in Vietnam.* Unpublished.
Lewis, J. 1999. *Development in Disaster-prone places.* London: Intermediate Technology Publications.
Lipsky, M. 1980. *Street-level bureaucracy; dilemmas of the individual in public services*. New York: Russell Sage Foundation.
Luttrell, C. 2001. Historical Perspectives on the Environment and Development. In Adger, Kelly, Nguyen Huu Ninh (eds) *Living with Environmental Change: Social Vulnerability, Adaptation and Resilience in Vietnam.* London: Routledge
Malarney, S.K. 1997. Culture, virtue and political transformation in contemporary northern Vietnam. *Journal of Asian Studies 56.*
McGrath, T. 2002. *Irrigated Agriculture in Vietnam: Responses to Policy Change 1975 – 1995* Ph.D. Thesis. School of History, Philosophy, Religion and Classics. University of Queensland
Mehta, L., Leach, M., Newell, P., Scoones, I., Sivaramakrishnan and Way, S-A. 1999. *Exploring understandings of institutions and uncertainty.* IDS discussion paper 372. Brighton: Institute of Development Studies.
Miller, F. 2003. *Society-Water Relations in the Mekong Delta: A Political Ecology of Risk*. Ph.d. thesis. Division of Geography, University of Sydney.
Morrison, J., Dorwood, A., Kydd, J. (2000) *Sustainable livelihoods and new institutional economics.* accessed on www.povertyfrontiers.org
Moser, C. 1998. The Asset Vulnerability Framework: Reassessing Urban Poverty Reduction Strategies. *World Development* 26 (1)
Nagarajan, G. and Brown, W. 2000. *Bangladeshi Experience in Adapting Financial Services to Cope with Floods.* Study supported by USAID. Bethesda, MD: Microenterprise Best Practices.
del Ninno, C., Dorosh, P., Smith, L. and Roy, D. 2001. *The 1998 Floods in Bangladesh. Disaster Impacts, Household Coping Strategies and Response.* IFPRI Research Report 122. Washington D.C.: International Food Policy Research Institute.
Nguyễn Ty Niên 2000. *Disasters in central Vietnam. Immediate and long-term issues.* Prepared for the conference "Integrated Program for Flood Prevention in Central Vietnam. Đà Nẵng March 2000.
Nguyen Van Chinh 2001. *Sedentarization and poverty reduction in Vietnam.* Paper for the workshop on the National Poverty Reduction Strategy at MOLISA Hanoi.
Oi, J. The Collective Foundation for Rapid Rural Industrialisation. In: Vermeer,E., Pieke,F. and Chong,W.L. (eds) 1998. *Cooperative and collective in China's Rural Development.* London and New York: M.E. Sharpe.
Okidi, J.A. and Mugambe, G.K. 2002. *An Overview of Chronic Poverty and Development in Uganda.* CPRC Working Paper 11. Institute of Development Policy and Management. University of Manchester.
Ostrom, E., Schroeder, L., Wynne, S. (eds) 1993. *Institutional Incentives and Sustainable Development*. Boulder, San Francisco, Oxford: Westview Press.

Ostrom, E. 1996. Crossing the Great Divide: Co-production, Synergy and Development. *World Development* Vol.24 (6)
Pain, A. and Lautze, S. 2002. *Addressing Livelihoods in Afghanistan.* Kabul: Afghanistan Research and Evaluation Unit.
Pantoja, E. 2002. *Microfinance and disaster risk management experience and lessons learned.* Provention consortium.
Prowse, M. *Towards a clearer understanding of vulnerability in relation to chronic poverty.* CPRC Working paper 24. Manchester: Chronic Poverty Research Centre.
Quarantelli, E. L. (ed) 1978. *Disasters. Theory and Research.* London: Sage.
Quarantelli, E. L. (ed) 1998. *What is a disaster? Perspectives on the question.* London and New York: Routledge.
Rambo, A.T. 1995. Privatization of communal land in northern Vietnam. *Common Property Resource Digest 33:7-9.*
Remmington, T. et al. 2002. Getting off the Seeds and Tools Treadmill with CRS Seed Vouchers and Fairs. *Disasters, 25(3).*
Ruggeri Laderchi, C., Saith, R. and Stewart, F. 2003. *Everyone agrees we need poverty reduction, but not what this means: Does it matter?* Paper for a WIDER conference on Inequality, Poverty and Human Well-being. Helsinki.
Scoones, I. 1998. *Sustainable Rural Livelihoods. A Framework for Analysis.* IDS Working Paper 72. Institute of Development Studies.
Shanks, E., Toai, B.D., Nguyet, N.T.K., Maxwell, O., Hung, D.Q. 2003. *Community Driven Development in Vietnam.* Hanoi: The World Bank and the Ministry of Planning and Investment.
Siegel, P. 2000. Towards and Integrated Appoach for Risk Management in Rural Areas: Guiding principles. Paper presented at the *Colloquium on Microfinance: Disaster Risk Reduction for the Poor.* The World Bank.
Sikor and Dao Minh Truong 2000. *Sticky Rice, Collective Fields: Community-based development among the Black Thai.* Centre for Natural Resources and Environmental Studies. Hanoi: Hanoi University of Agriculture.
Sinha, S. and Lipton, M. 1999. *Damaging Fluctuations, Risk and Poverty: A Review.* Background Paper for the World Development Report 2000/2001. Poverty Research Unit. University of Sussex.
Slovic, P. and Weber, E. 2002 Perceptions of Risk Posed by Extreme Events. Paper prepared for the conference *Risk Management Strategies in an Uncertain World.* New York: Columbia University
Socialist Republic of Vietnam 2002. *The Comprehensive Poverty and Growth Strategy (CPRGS). No. 2685/VPCP 21/5/2002.* Hanoi.
Sperling, L. and Longley, C. 2002. Beyond seeds and tools: Effective support to farmers in emergencies. *Disasters* Vol. 26.
Start, D. and Johnson, C. 2004. *Livelihood options? The political economy of access, opportunity and diversification.* ODI Working Paper 233. London: Overseas Development Institute
Tendler, J. 1997. *Good Government in the Tropics*. Baltimore: The John Hopkins University Press.
Tudawe, I. 2001. *Chronic Poverty and Development Policy in Sri Lanka: Overview Study.* Working Paper 9. Manchester: IDPM/Chronic Poverty Research Centre (CPRC).

Twigg, J. 2001. *Sustainable Livelihoods and Vulnerability to Disasters.* Benfield Greig Hazard Research Centre for the Disaster Mitigation Institute.
Twigg, J. 2004. *Disaster risk reduction. Mitigation and Preparedness in Development and Emergency Programming.* Humanitarian Practice Network No. 9. London: Overseas Development Institute.
UNDP 2000. *Central Province Initiative to Mitigate Natural Disasters in Central Vietnam. Progress Report number 1.* www.undp.org.vn/cpi
UNDP 2004. *Reducing Disaster Risk. A challenge for development.* New York: UNDP
Ủy Ban Nhân Dân Huyện Hải Lăng 1999. Dánh giá tình hình thiệt hại do lụt, bão. (Evaluation of the flood and storm damage. Hai Lang District People's Committee report number 60 17/11/99)
Ủy Ban Nhân Dân Huyện Hải Lăng 2000. *Báo Cáo Tình Hình PCBL Năm 1999. (*Report on the situation of storm and flood mitigation 1999. Hai Lang district People's Committee).
Ủy Ban Nhân Dân Huyện Hải Lăng 2005. *Báo Cáo Tình Hình KT-XH 5 Năm 2001-2005 và Kế Hoạch Phát Triển KT-XH 5 Năm 2006-2010.* (Report on the socio-economic situation 2001-2005 and development plan for 2006-2010. Hai Lang district People's Committee)
Vatsa, K.S. 2004. Risk, Vulnerability, and Asset-based approach to disaster risk management. *International Journal of Sociology and Social Policy*. Vol. 24, (10/11)
Walker, B. et al. 2002. Resilience Management in Social-ecological Systems: a Working Hypothesis for a Participatory Approach. *Conservation Ecology 6(1).*
White, P. et al. 2004. *Disaster risk reduction: a development concern*. Norwich: Overseas Development Group, University of East Anglia.
Wisner, B. 1993. Disaster Vulnerability: Scale, Power and Daily Life. *GeoJournal 30:2.*
Wisner, B., Blakie, P., Cannon, T., Davies, I. 2004. *At Risk.* London and New York: Routledge
The World Bank and DFID 1999. *Vietnam Voices of the Poor. Synthesis of Participatory Poverty Assessments.* Hanoi.
The World Bank 2000/01. *World Development Report.*
The World Bank et al. (2003) *Vietnam Development Report* 2004. *Poverty.* Joint Donor Report to the Vietnam Consultative Group Meeting. Hanoi

Appendix

1. Tables of number of interviews and some results

1.1 Number of households interviewed in each location:

Number of households Location	May 2000	Sept-Oct 2000	Nov-Dec 2001	Nov-Dec 2002	June 2004
Van Tri (low land)	16	10	12	5	3
Phuoc Dien (low land)		11	5	5	
Xuan Loc (hill land)	16	16	11	5	
Hong Ha (mountain)	5	19	14	7	3

1.2 Number of households interviewed in each wealth group:

	Poor	Middle income	Better-off
Van Tri	5	7	2
Phuoc Dien	8	3	
Xuan Loc	6	8	2
Hong Ha	7	9	3

1.3 Interview results in Hong Ha commune:

Means of coping	Number of households	Of which poor hh
Collecting minor forest products	6	3
Cultivating old swidden fields	3	1
Forest work (planting, tending)	6	3
Have state pension due to war injuries	6	2
Borrowed money from relatives	2	1
Government credit	3	0
Food relief	19	7

1.4 Interview results in Hai Lang district:

Means of coping	Number of hh	Van Tri	Phuoc Dien	Xuan Loc
Number of households interviewed		16	11	16
Collecting minor forest products		0	0	9
Working as day labourers		0	0	4
Income from tree planting		0	0	6
Took loans to repair the house		6	0	7
Remittances from son/daughter in HCMC		2	2	7
Small trade		0	1	2
Successful pig raising		2	2	13
Loan from relatives		3	1	6
Seasonal migration		1	4	2
Food loans		6	6	0
Government credit		12	11	16
Food relief		16	11	16
Rent extra paddy land		5	4	1

1.5 Difficulties to recover

(poorer now than before the floods according to household's own estimation)

Number of households	Van Tri	Phuoc Dien	Xuan Loc	Hong Ha
Not yet recovered in 2004	3	4	2	0
Poor also before the floods	5	8	6	7
Health problems	5	6	2	7
Informal debts	3	8	0	2
Have migrated	1	2	1	0

2. List over fieldwork meetings and interviews

Hai Lang district:

May 2000:

8: Meeting with Hai Tan commune People's Committee and representatives of the mass organisations.
8-10: Household interviews Van Tri village.
10: Meeting with the Hai Tan commune PC and mass organisations.
11: Meeting with Hai Chanh commune People's Committee.
11-13: Household interviews in Xuan Loc village.
13: Meeting with Hai Chanh commune PC and mass organisations.
15: Meeting with Hai Lang district People's Committee and branch organisations.

October 2000:
10: Meeting with Hai Lang district branch of the Red Cross.
11: Household interviews in Xuan Loc village.
12: Meeting with Hai Chanh commune People's Committee and mass organisations.
13: Household interviews in Van Tri village.
13: Meeting with Van Tri village head and cooperative leaders.
14: Meeting with Hai Tan commune People's Committee and mass organisations.
17: Interviews with household in Phuoc Dien village.
19: Meeting with Hai Lang district People's Committee and branch organisations.
20: Meeting with Hai Thanh commune People's Committee

April 2001:
3: Meeting with Hai Lang district Agriculture Section and Extension Station.
November 2001:
21: Meeting with Hai Chanh commune People's Committee.
22: Meeting with Xuan Loc village cooperative leaders.
22: Meeting with Van Tri village cooperative leaders.
23: Meeting with Hai Thanh commune People's Committee and Phuoc Dien village cooperative leaders.
December 2001:
10: Interviews with households in Xuan Loc village.
11: Interviews with households in Phuoc Dien village.
14: Meeting with Hai Lang district Agriculture Section.
14: Meeting with Hai Lang district Section for Labour and Organisation.

November 2002:
13: Household interviews Xuan Loc village.
14: Household interviews Van Tri village.
15: Household interviews Phuoc Dien village.

April 2004:
28: Household interviews Van Tri village and meeting with Van Tri cooperative leaders.
May 2004:
25: Meeting with cooperative leaders in Xuan Loc village.
28: Meeting with cooperative leaders in Phuoc Dien village.
29: Meeting with the head of the Hai Lang district branch of the Bank for Social Policy.
June 2004:
6: Meeting with staff of the Quang Tri province Union of Cooperatives.

A Luoi district:

May 2000:
17: Meeting with A Luoi district People's Committee.
18: Meeting with Hong Ha commune People's Committee.
September 2000:

15: Meeting with A Luoi district People's Committee and Agriculture Section.
16: Meeting with Hong Ha commune People's Committee and mass organisations.
16: Meeting with the village heads of Pa Rinh and Con Tom villages.
17: Group discussion with 12 people in Pa Rinh village.
18-19: Household interviews in Pa Rinh village.
20: Meeting with Hong Ha commune People's Committee and mass organisations.
22: Meeting with A Luoi district PC and branch organisations.
26: Meeting with Hong Ha commune PC.
26: Meeting with commune staff of the Bo River Watershed Management Board.
27: Meeting with Hong Ha commune organisations.
28: Meeting with A Luoi district level organisations.

October 2000:
23: Meeting with A Luoi district People's Committee
24: Meeting with staff of the Hue University of Agriculture and Forestry.
27: Meeting with Hong Ha commune PC and village heads.

February 2001:
21: Meeting with the A Luoi branch of the Bank for Agriculture and Rural Development, with the Agriculture Section, the Forest Station and the Land Management Section of A Luoi district.
22: Group discussion with households in Pa Rinh village.
23: Group discussion with households in Con Tom village.
24: Meeting with the Hong Ha commune PC and Land Management staff.
March 2001:
4: Meeting with Hong Ha commune People's Committee
28: ditto
29: Workshop in A Luoi district town with representatives of all related organisations plus Hong Ha commune leaders.
30: Meeting with staff of the Hue University of Agriculture and Forestry.

December 2001:
18: Meeting with Hong Ha commune People's Committee.

November 2002:
24: Household interviews Pa Rinh and Con Tom villages.

June 2004:
9: Meeting with A Luoi district People's Committee.
10: Meeting with Hong Ha commune People's Committee.
11-12: Household interviews Pa Rinh and Con Tom villages.