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Department of Geography

**CHANGING LIVES, CHANGING NATURE(S)**  
Socio-environmental transitions in the uplands of the Lao PDR

Guillaume Lestrelin

Thesis submitted for the degree of Doctor of Philosophy (PhD)

2008

## Abstract

This study debates the socio-political construction of the land degradation issue in the Lao PDR, the consequences of this construction for policy interventions in the uplands, and the social and environmental outcomes of these interventions. For that purpose, livelihood analysis is integrated into the theoretical framework of political ecology. The study adopts a ‘hybrid’ and locally-grounded approach that integrates methods from the social and ecological sciences and investigates recent livelihood and environmental change in two upland villages in northern Laos. From there, the analysis draws a number of causal links between local socio-environmental change, local ‘theories’ on land degradation, the wider political economy and the politics of the ‘environment’ at the national level, and various local contingencies (i.e. social differentiation, socio-cultural change and everyday resistance to ‘external’ interventions). The study argues that the current mainstream environmental discourse in Laos appears less based on solid empirical evidence than shaped by the subjectivities and political-economic projects of the state, the political elite and their international development partners. In turn, policy interventions supported by this discourse have significant impacts on upland livelihoods and environments. Importantly, they contribute to make traditional upland agriculture unsustainable and, hence, drive a general trajectory of livelihood diversification and deagrarianisation. Nevertheless and notwithstanding significant constraints linked to land degradation and wide-ranging state regulations, upland-dwellers retain a non-negligible level of agency which allows them to pursue their own, sometimes contested, economic and political objectives. Multi-local social networks and ‘village-local state’ alliances appear to play a key role in facilitating this process. These findings have important implications for the conceptualization of society-nature, global-local and state-society relations. They highlight a need to shift from simple dualistic models to more integrated perspectives accounting for the co-construction of society and nature, the co-production of global and local change, and the interpenetration of the state and society.

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## Acronyms

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
AusAID	Australian Government Overseas Aid Program
DAFO	District Agriculture and Forestry Office
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GLASOD	Global Assessment of the Status of Human-induced Land Degradation
GoL	Government of the Lao PDR
GTZ	German Technical Cooperation
IRD	France's Institute of Research for Development
IRRI	International Rice Research Institute
IUCN	World Conservation Union
IWMI	International Water Management Institute
LAK	Lao PDR Kip
Lao PDR	Lao People's Democratic Republic
LECS	Lao Expenditure and Consumption Survey
LPRP	Lao People's Revolutionary Party
LUPLA	Land Use Planning and Land Allocation programme
MRC	Mekong River Commission
MSEC	Managing Soil Erosion Consortium
NAFRI	National Agriculture and Forestry Research Institute (Laos)
NBCA	National Biodiversity Conservation Area
NGO	Non-Governmental Organization
PE	Political Ecology
SIDA	Swedish International Development Agency
SLA	Sustainable Livelihoods Approach
THB	Thai Bath
TLUC	Temporary Land Use Certificate
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WCED	World Commission for Environment and Development
WCS	Wildlife Conservation Society
WRI	World Resources Institute
WWF	World Wildlife Fund

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## Chapter 1. Introduction

“All ecological projects (and arguments) are simultaneously political-economic projects (and arguments) and vice versa. Ecological arguments are never socially neutral any more than socio-political arguments are ecologically neutral. Looking more closely at the way ecology and politics interrelate then becomes imperative if we are to get a better handle on how to approach environmental/ecological questions” (Harvey 1993: 25).

When I first arrived in Laos a few years ago, it was to work with an international research project called ‘Managing Soil Erosion Consortium’ (MSEC). Based on an interdisciplinary and comparative approach to the ecological and socioeconomic impacts of soil erosion in the upland watersheds of Southeast Asia, this project had as its ultimate objectives the development of sustainable land management systems and the production of scientific guidelines for improving land and water management policies. Thus, from the outset, soil erosion appeared to me as both an environmental issue, observable and quantifiable through field surveys, and a political-economic issue, potentially solvable by well-thought through policies and land management incentives. From this perspective, however, a nuance was missing that I would discover in the course of my research. In charge of strengthening the expertise of MSEC in the social sciences, my first activity in Laos was to place the biophysical and land use data collected at the catchment scale within the broader social contexts of the village and the country. At first, reviewing country reports of government and international development agencies, it seemed obvious to me that upland soil erosion, as an environmental issue, was significant enough to represent a threat to the development of the country and, for this reason, required wide-ranging political-economic interventions. Yet, my confidence was undermined some time later when, among the villagers that I questioned, very few actually mentioned soil erosion as an issue. It was further undermined when the biophysical measures aggregated by MSEC did not reveal the presence of the critical environmental damage suggested by official reports. Were the concerns of the authorities based on misinformation? Or did the mismatch between official discourses and local experiences suggest that other dynamics were at work in the construction of the upland soil erosion ‘issue’?

By way of a clue, I also found out that, in my two study villages, some of the main land degradation issues put forward by the villagers – including soil exhaustion, declining agricultural yields and increasing agricultural workload – were related to an intensification of the shifting cultivation systems which, in turn, was partly driven by policies and regulations precisely aimed at both improving livelihoods and protecting the environment. As a matter of fact, other researchers had observed similar causality linkages in many other upland villages of Laos (e.g. Chamberlain 2001; Ducourtieux *et al.* 2005; Evrard 2004). All these elements suggested that the significance of soil erosion in the uplands of Laos should not be taken for granted and that, besides environmental concerns, there were perhaps other motives underlying the official definition of the land degradation issue and ensuing environmental policy. In that sense, soil erosion as a political-economic issue and, hence, as a lever for policy making and intervention had perhaps taken precedence over soil erosion as an actual environmental issue. This reflection was the starting point for broadening the initial scope of my research and, importantly, considering land degradation not only as an ecological object involving various biophysical processes but also as a polymorphous socio-political object shaped by human activities, perspectives and concerns.

Therefore, while it almost inevitably covers a wider range of issues, this PhD study is primarily about land degradation, environmental politics, and the way these forces interact, both together and with the livelihoods of upland populations in the Lao PDR. In order to approach these complex interactions, the study builds extensively upon political ecology theory and methods. Over the past two decades, political ecology has proved a powerful tool for analysing socio-environmental interactions and, importantly, examining linkages between power relations, environmental knowledge and discourses and ecological dynamics (see Chapter 3, Section 3.2.1). Beyond a simple application, however, the study intends to contribute to the development of the political ecology framework through an examination of two conceptual linkages. First, between land degradation and political economy, or what may be called the ‘early political ecology’ nexus. Second, between political ecology and livelihoods.

### 1.1. (Re)connecting land degradation and political economy

As demonstrated by Blaikie (1985) and Blaikie and Brookfield's (1987) landmark studies, land degradation is shaped by and in turn reworks political economy with critical implications for communities and environments. Following Blaikie (1985), land degradation becomes a political-economic issue as soon as it involves a conflict of interests between different parties. This conflict may be explicitly about land degradation or its definition – e.g. foresters and farmers may have conflicting viewpoints on (and conflicting interests in) the conversion of forests into agricultural land, the first considering the change as degradation, the latter as an enhancement. It may also arise more indirectly – e.g. farmers experiencing land degradation may enter into conflict with foresters while attempting to gain access to more productive land. In both cases, land degradation becomes an object of discussion and debate, connected to the wider political economy through the influence of policy and economic forces on land use or through the interventions that land degradation issues may require or justify (e.g. land reform, credit arrangements). Therefore, land degradation cannot be treated separately from the political-economic context in which it is produced, experienced, defined, contested and acted upon. Building on these considerations, a key initial objective underlying the emergence of political ecology was to provide a sound theoretical and methodological framework for the analysis of the political-economic determinants and outcomes of land use and land degradation.

According to Jones (2008), however, if Blaikie (1985) and Blaikie and Brookfield's (1987) work has greatly contributed to the rise of political ecology, the attention of political ecologists to these connections between political economy, land use and land degradation has actually remained relatively limited<sup>1</sup>. Rather, following the post-structuralist turn in the social sciences, studies have tended to concentrate on issues of power and knowledge and, in particular, the politicization of environmental knowledge and the way power struggles are expressed or materialized in the biophysical environment (e.g. Blaikie and Muldavin 2004; Bryant 1996; Carney 1993; Escobar 1998; Forsyth and Walker 2008; Isager and Ivarsson 2002; Peet and Watts 1996; Peluso 1992; Rocheleau *et al.* 1996). The question posed by political ecology has thereby shifted from “what causes land degradation?” to “how [do] resource struggles play out

---

<sup>1</sup> A few exceptions include studies by Warren *et al.* (2001) and Lestrelin and Giordano (2007).

in the landscape”? (Jones 2008: 4). This renewed agenda has significantly expanded the field of application of political ecology and provided highly valuable insights as regards, for instance, human agency and creativity, the diversity of local ecologies and human perceptions, and the dangers of oversimplification and overgeneralization of socio-environmental models (see Chapter 3, Section 3.2.1).

At the same time, however, it seems that scientific attention has been largely diverted from the foundational focus of political ecology. Yet, as argued by scholars like Nygren (2004) and Jones (2008), a consequence of this is that ‘post-structural political ecology’ runs the risk of overlooking important causal linkages between local socioeconomic/ecological conditions and processes and broader scale political and economic systems. Socio-environmental interactions are made of “processes in which systems of production and systems of signification are intertwined” (Nygren 2004: 191; see also Batterbury 2001; Nygren 2000; Watts 2000). Power relations and resource struggles certainly play a role in shaping environmental knowledge and, in turn, engendering particular environmental practices and dynamics. Quite often, however, environmental practices are also constitutive of systems of production aimed at making and sustaining a living. Hence, environmental practices – including the very practices through which power relations and resource struggles are mediated – are also influenced by constraints and opportunities in the wider political economy (e.g. policy, regulation, market demand). An important concern for this PhD study is thus to integrate the two dimensions. In other words, the study proposes to renew scientific attention towards the political economy of socio-environmental change while remaining attuned to a critical approach to power struggles and the social construction of environmental issues.

## **1.2. A ‘political ecology of livelihoods’**

“There is a dialectic between ecological dynamics and livelihood decisions and possibilities, and [...] any analysis that understates this (even in these contemporary times) runs the risk of being at the very best partial” (Bebbington and Batterbury 2001: 371).

A second key conceptual linkage examined in the thesis connects political ecology to livelihoods. As introduced above, ‘early political ecology’ has tended to approach the



human dimension of local socio-environmental interactions primarily in terms of land use while its 'post-structural' sequel has essentially done so in terms of environmental discourses and struggles (Simon 2008). These are undoubtedly crucial research objects for examining the impacts of human activity and organisation (see Chapter 3, Section 3.2.1). By focusing on these two objects, however, political ecology may be criticized for providing a too narrow an analytical framework. Indeed, as Batterbury points out, environmental change is not merely a function and factor of land use and environmental politics, it is more generally "both an 'input' and 'output' of making a living" (2001: 456). Put differently, if they are certainly key elements constituting local socio-environmental interactions, land-based activities, environmental discourses and struggles remain embedded in the wider assemblage of economic, political and socio-cultural activities and strategies that makes up people's livelihoods.

A more comprehensive approach, therefore, would be to place the latter assemblage at the centre stage of the political ecologic analysis. As argued by Jones (2008), such an approach would enable political ecology to reflect on processes of rural diversification and de-agrarianisation (e.g. Bryceson 1996; Bryceson and Jamal 1997; Ellis 1998, 2000; Rigg 2000, 2006b) – two key processes, influenced by the wider political economy, with potentially significant implications for local land use, environmental discourses and struggles, and actual ecological dynamics. Furthermore, it could also contribute to renew the initial interest of political ecology for the political economy of environmental issues. As Blaikie pointed out in his seminal study on soil erosion, political-economic interventions aimed at solving environmental issues often entail "quite fundamental social change, sometimes involving people who live outside the affected area altogether" (Blaikie 1985: 2). In this regard, a comprehensive political ecological approach to the ways local livelihoods are composed, transformed and connected to other places and contexts can certainly provide valuable insights into the social outcomes of environmental policy. From there, it can also contribute to produce scientific findings that have direct policy relevance. For different reasons, thus, political ecology could benefit from more careful attention to the complexities of livelihood construction and decision-making and, hence, provide more comprehensive insights into the multiple socio-cultural, political and economic interactions that operate across scales and, ultimately, contribute to shape local socio-environmental interactions.

A number of studies have already paved the way for such reconsiderations and demonstrated the value to be gained from a broadened political ecology approach to livelihood change and globalization (e.g. Batterbury 2001; Bebbington and Batterbury 2001; Rocheleau *et al.* 2001). In line with these studies, this PhD study puts forward what Jones (2008) terms a ‘political ecology of livelihoods’ approach. This emphasis on livelihoods means that the overall approach adopted is broader in scope than a ‘conventional’ political ecology study. Thus, rather than focusing exclusively on environmental politics or the political-economic determinants of environmental issues, the approach aims to highlight and elucidate some of the main patterns of, and interactions between, socio-economic and environmental change that have characterized the uplands of Laos during the past decades.

For this purpose, the study adopts a ‘hybrid’ and locally-grounded research framework that combines approaches from social science (e.g. livelihood surveys, discourse analysis) and ecological science (e.g. measurement of soil erosion rates, monitoring of sediment yields). Implemented in two upland villages, this framework involves three analytical steps. A first step involves the analysis of relations between recent livelihood and land use changes, local perceptions and discourses in relation to environmental change, and ecological dynamics highlighted by field measurements. Somewhat ‘upstream’ from this local society-environment nexus, the second analytical step focuses on the causal links between local livelihood and environmental change and broader scale political and economic factors and processes. Here, the research combines ‘post-structuralist’ analyses – e.g. the influences of mainstream environmental discourse and resource politics at the central level on local socio-environmental interactions – with an examination of the political-economic determinants of local change – e.g. the impacts of government policy and economic forces on local livelihood constraints and opportunities. The third analytical step focuses on the local factors and drivers for socio-environmental change. In particular, it examines the influence of socio-economic differentiation patterns (e.g. individual access to land, labour and capital), socio-cultural change (e.g. changing norms and values) and the everyday politics of resistance and accommodation to ‘external’ intervention (e.g. resistance to government policy, integration of new economic behaviours). The core issues examined by the study can thus be summarized through the following research questions and sub-questions:

- **What are the recent trajectories of change in the interactions between Laotian upland populations and their environment?**
  - *How has recent livelihood change in the uplands of Laos been shaped by environmental conditions and processes?*
  - *Conversely, what are the environmental outcomes of recent livelihood change?*
- **To what extent have upland socio-environmental interactions been reshaped by ‘external’ factors and drivers?**
  - *What have been the influences of mainstream environmental discourses and resource politics at the national level?*
  - *What have been the influences of government policy and economic forces?*
- **To what extent have upland socio-environmental interactions been reshaped by ‘internal’ factors and drivers?**
  - *What have been the influences of local social differentiation patterns, socio-cultural change and the everyday politics of resistance and accommodation to ‘external’ intervention?*

As further discussed later in the thesis (see Chapter 3, Section 3.1), this ‘political ecology of livelihoods’ approach works across three main conceptual divides, namely, society-nature, global-local and state-society. By conceptualizing land degradation as both a biophysical process that impacts on human activity and organisation and as an object of political debate shaped by power struggles, environmental discourses and political-economic forces, the approach accounts for the social construction of environmental issues and puts forward a vision of society and nature as co-constructed. In addition, by analysing causal linkages between livelihoods, the wider political economy and environmental politics at both local and broader scales, the approach deals with the interpenetration of state and society and the co-construction of global and local change. As I was to discover, the uplands of Laos represent a rich and valuable setting for approaching these issues.

### **1.3. Laos and the uplands**

For many people, Laos is associated with images of mountainous landscapes covered by dense and pristine forests. In the collective imaginary, these landscapes are shaped by a diversity of ethnic minorities, all making a living through age-old activities and self-

subsistence economy and long insulated from the modern world by both a rugged topography and a peculiar ‘communist’ state. However, if Laos is indeed a ‘landlocked country’ (as pointed out in a fairly monotonous fashion by travel guides and country reports), for any critical observer who sets foot in the country today, lives and landscapes appear very much connected to, and shaped by, a wider international context. The most obvious symbol of foreign influence lies in the omnipresence of Thai television and music, the dissemination of which seems indeed to follow the rate of connection of remote villages to the electricity grid. The tourism sector is also developing rapidly<sup>2</sup> and tour guides have to venture to increasingly remote areas in order to provide foreign visitors with the experiences and images described in their travel guides.

Probably less visible to the newcomer, the economic influence of the Laotian diaspora is also widespread. Following the formation of the Lao People’s Democratic Republic in 1975 and ensuing policies of nationalisation, agricultural collectivization and population control, around 400,000 persons or 10 percent of the total population left the country between 1976 and the late 1980s. Many of these refugees were later resettled in the United States, France, Australia and Canada (Stuart-Fox 2001). The economic influence of this diaspora – through remittances and foreign investments – rapidly expanded after Laos’ economic and political reforms of the mid-1980s (see Chapter 4, Section 4.3.3). Finally, another element highlighting Laos’ connection to the wider international context lies in the very significant contribution of foreign aid and grants to the national budget and the long-standing involvement of international development agencies in policy advice and formulation (see Chapter 4, Section 4.3.3). Thus, in different ways, Laos represents an interesting setting for examining linkages between global political, socio-cultural and economic dynamics and local socio-environmental change.

In terms of looking at the co-construction of society and nature, Laos and the Laotian uplands more particularly also represent an interesting context. First, the ‘environment’ remains central to the livelihoods of the population. The economy of the country is still very much rural. Urbanisation is limited, with 73 percent of the population living in

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<sup>2</sup> Tourism arrivals increased by an average of 14.1 percent per year between 2002 and 2007. They are expected to reach 1.6 million in 2008 (ADB 2007).

rural areas (GoL 2006a). In 2005, agriculture represented the most important sector of the economy, engaging about 80 percent of the country's total population (GoL 2006a). While there are no disaggregated statistics available so far, the contribution of upland populations to these figures is probably very significant and it is generally estimated that upland livelihoods remain essentially based on land and other natural resources. In that sense, the interactions between society and nature in Laos can be considered more direct and 'operative' than in more industrialised/urbanized countries (e.g. in neighbouring China and Thailand) where significant sections of society have shifted towards non-farm activities and migrated to cities.

Second, Laos presents a particular situation for sustainable development thinking and associated policy. Indeed, as a developing country, ranked among the poorest of the world and, yet, considered remarkably rich in ecological terms, Laos represents a hotspot for sustainable development and an ideal 'laboratory' for policy experimentation aimed at both poverty eradication and environmental conservation. This is particularly true for the uplands where poverty and biodiversity rates are generally considered as reaching their highest values (see Chapter 4, Section 4.1.3). These considerations are reflected in the significant contribution of international development agencies to the formulation, funding and implementation of Laos' rural development policy and the influence of the sustainable development paradigm on Laos' legal framework (see Chapter 4, Section 4.3.3). In general, Laos and its uplands represent thus a valuable context for approaching the co-construction of society and nature, not only because nature and natural resources are central to the everyday life of a major part of the population but also because the articulation of society with nature is a core element of the political debate on national development.

The uplands of Laos also present an interesting situation for a study that deals with state-society relations. With a single party maintaining firm control over the state apparatus, the current political regime of Laos is often described as 'authoritarian' (e.g. Jönsson 2002; Stuart-Fox 2006). Furthermore, for various reasons (e.g. poverty and illiteracy, lack of social links with current political and economic elites) and despite the early efforts of the Lao People's Revolutionary Party to promote the political participation of minority groups, upland populations are still largely excluded from the formal political institutions of the country (see Chapter 4, Section 4.3.2 and Chapter 6,

Section 6.4). This particular situation raises questions as regards the actual agency of politically marginal upland populations in front of a ‘domineering’ state and the ways state authority and interventions are experienced and mediated in the everyday life of the upland-dwellers. These questions are not only important for their theoretical engagement with the scientific debate on ‘structure’ and ‘agency’ (see Chapter 3, Section 3.1.2). Paraphrasing Blaikie (1999), they also have a particular, practical interest for anyone willing to contribute to the promotion of a just, accountable, egalitarian and democratic future.

Finally, it may also be noted that Laos represents an interesting setting for academic research in general. In many scientific domains, the availability of academic studies on Laos is rather limited. Thus, for any motivated scientist, this means a whole new world to discover, understand, explain and situate in relation to other, more researched contexts. By way of introducing my own journey in this research process, the following section gives a detailed outline of the thesis.

#### **1.4. Outline of the thesis**

The thesis is organized in seven chapters. Following this introduction, the second chapter describes the specific context in which the study has been conducted. In particular, it highlights the way the study has been significantly motivated and influenced by two years of work with an international research project. The chapter describes the initial research project, the methodological approach developed in the early stages of the research and the ways it was refined subsequent to my engagement in the preparation of a PhD study. Finally, reflections are offered on the overall research process and, in particular, the positionality of the researcher.

The third chapter presents the conceptual framework of the study. Through a questioning of three ‘classical’ conceptual divides (i.e. society and nature, global and local, and state and society), the positioning of the study relative to a number of scientific postulates and conceptual challenges is clarified. The chapter focuses then on the two approaches – i.e. Political Ecology and the Sustainable Livelihoods Approach – that have been employed to develop the abovementioned ‘political ecology of livelihoods’. After a review of their main theoretical arguments and scientific critiques,

a potentially productive combination is proposed which allows important conceptual and methodological gaps in each approach to be filled while also permitting the three conceptual divides introduced above to be bridged.

The following three chapters – chapters four to six – constitute the core chapters of the thesis. Chapter four builds on recent debates related to environmental change and knowledge production and examines the social construction, political implications and policy outcomes of the current mainstream discourse on land degradation in the Lao PDR. It highlights that, despite an important lack of empirical evidence, land degradation in the uplands is represented by the Laotian authorities and many of their development partners as a major and imminent threat to the development of the country. The chapter also examines the way this perspective is translated into policies specifically aimed at resolving the upland ‘issue and proposes an alternative reading of this process where mainstream discourse and associated policy appear partly shaped by the subjectivities and political-economic projects of Laos’ policy-makers.

The fifth chapter of the thesis builds extensively on empirical material from two study villages located in the northern uplands of Laos. It examines recent livelihood and environmental changes, their interactions and their connections to broader scale political-economic factors and processes. The chapter highlights important variations between the official environmental discourse and the way land degradation is experienced locally. It also reveals that the two communities studied are engaged in an important de-agrarianisation process and draws a number of causal linkages between the latter process, land degradation, market forces and rural development policy. Finally, placing these empirical findings in the broader context of Laos’ environmental politics, the chapter argues that livelihood change in the two study villages is, to a significant extent, the result of local adaptations to both actual land degradation processes and the official discourse on land degradation.

The sixth chapter examines a number of local contingencies that have contributed to shape or prompt the socio-environmental transitions observed in the two study villages. It describes how differential access to capital, land, labour and education has determined individual livelihood opportunities, constraints and trajectories. It further highlights that, along with state policy and economic forces, local socio-environmental change has

also been prompted ‘internally’ – i.e. by an evolution of the local socio-cultural norms and values – and shaped by the everyday politics of resistance and accommodation to ‘external’ intervention. Hence, the chapter engages a discussion of state-society relations and argues that upland populations may still have a significant level of agency, even if they are subjected to powerful and wide-ranging state interventions.

The seventh and last chapter concludes the thesis by summarizing the results of the study. The chapter reviews the main empirical findings and discusses their relevance and scientific contribution relative to wider and more conceptual considerations on society-nature, global-local and state-society interactions. Finally, reflections are offered on the ‘political ecology of livelihoods’ approach, its main strengths and shortcomings and the ways it may be improved.

### **1.5. Summary**

As this chapter has described, the study intends to examine the land degradation issue in the uplands of Laos through a ‘political ecology of livelihoods’ approach. This approach combines ‘post-structuralist’ analyses of the politicization of environmental knowledge and practices with early political ecology’s analyses of the political-economic determinants and outcomes of land use and land degradation. Furthermore, it expands the field of application of political ecology by placing land use and resource struggles into the wider assemblage of economic, political and socio-cultural activities that makes up people’s livelihood.

As further outlined above, the core empirical chapters of the thesis – chapters 4 to 6 – propose a journey that starts in Laos’ corridors of power and policy making and ends in the everyday life of upland populations. This way, they are intended to provide insights into the ways upland social and environmental change interrelate and reflect a wide range of ecological, cultural, economic and political processes operating across scales and conceptual divides (i.e. society-nature, global-local and state-society). This is a guided tour, however, and, for the purpose of scientific accountability, the guide should make sure that the reader is aware of the practical conditions and particular subjectivities that have influenced the design, limits and actual outcomes of the journey. This is the main objective of the following chapter.



## Chapter 2. Research context and methods

This study is characterized by complex and changing research conditions over a six-year period (2003-2008). The first part of the research process was initiated within the framework of an international research programme called ‘Managing Soil Erosion Consortium’ (MSEC) – with the support of a team composed mainly of biophysical scientists and without PhD supervision. Fieldwork was undertaken during this period, from January 2003 to September 2004, in four rural villages of Southeast Asia, two in Laos and two in Thailand. Most of the work in Thailand was done, partly under my direction, by an MSc student. Due to a lack of academic support in the social sciences and poor access to academic literature while based in Laos, this stage of research suffered from important theoretical gaps which, in turn, impacted on the conceptual and methodological approaches taken to this portion of the data gathered and the information collected. In fact, even if it provided a valuable database on many aspects (see below, Section 2.2.2), the work undertaken in this phase can be considered as largely applied research. Responding to these shortcomings, fieldwork was discontinued during one academic year (2004-2005) that I spent at the Geography Department of the University of Durham. With the help of my two supervisors, I engaged further with theory and, hence, reconsidered my methodological and conceptual approaches in order to meet the academic requirements of a PhD study. Then, back in Laos in August 2005, I undertook additional fieldwork in the two Laotian study villages; during this time I also finally decided not to pursue the research in the Thai sites. This decision was motivated by the fact that, comparatively to Laos, the data previously collected in Thailand was rather limited; in addition, I was unable to meet the financial cost of additional field visits to the Thai sites.

Summarizing the complete methodological framework from the outset of the study to the last field visit, Figure 2.1 describes the articulation between research objects and scales, survey samples, data, sources, collection methods, and methods of analysis. The following sections of the chapter discuss this methodological framework in more detail. The first section describes the main objectives of the MSEC research project and gives a general overview of the two research sites in Laos. Following the history of this PhD study, the second section presents the methodological approach *per se*. First, it describes

the approach developed within the MSEC framework and, in particular, the main research objects studied and the various methods employed for collecting, analysing and integrating the data describing the research objects. Second, it describes the methodological adjustments and improvements consecutive to my engagement in the preparation of a PhD study and efforts made to reflect on and expand the theoretical significance of the previous research. The third section then reflects on the overall research process and, in particular, the positionality of the researcher. Finally, the fourth and last section summarizes the work conducted, its main drawbacks and advantages and the ways it has been influenced by various actors and factors.

## **2.1. The MSEC framework**

### *2.1.1. Objectives*

As introduced above, this PhD study originates from, and fits partly into, the framework of the ‘Managing Soil Erosion Consortium’ (MSEC) programme in Southeast Asia. MSEC is sponsored and coordinated by the International Water Management Institute (IWMI). It consists of national research agencies in five member countries (i.e. Thailand, Laos, Vietnam, Indonesia and The Philippines) and researchers from IWMI and the France’s Institute of Research for Development (IRD). One of the main objectives of this international research project is to evaluate the biophysical and socio-economic impacts of soil erosion on highly sloping lands. For that purpose, since 1998, measurements of soil erosion and related indicators have been undertaken and alternative land use practices experimented within upland areas of Southeast Asia. Recruited by MSEC in 2003, my involvement was aimed at strengthening the expertise of the research project in the social sciences and, in particular, developing its approach to the social determinants and outcomes of local land management practices. In this context, I conducted surveys on the socio-economic and political environments of the Laotian and Thai field sites and contributed to the integration of the project’s biophysical, agronomic and socio-economic databases. As further described below (Section 2.2.1), a significant part of the empirical material that is presented in this PhD study comes thus from fieldwork undertaken within the MSEC framework.

Figure 2.1: Articulation between research objects, scales, survey samples, information, sources, collection methods, data type and analysis.

Research objects	Scales	Samples	Information	Main sources	Collection methods	Main data type (analysis)
Political-economic context Environmental discourses	Country		Policies and regulations Economic indicators Official discourses...	Official, scientific and grey literature State agents	Literature review Interviews	Qualitative (discourse analysis) Qualitative (discourse analysis)
Environmental change	Watershed		Soil erosion rates Deforestation Crop yields...	MSEC biophysical team	MSEC measurements	Quantitative (descriptive & inferential statistics)
Resource endowment Local political-economic constraints and options	Inter-village Village		Demography Land tenure Education levels Infrastructures...	Farmers working on the MSEC experimental watershed State agents Village authorities Elders and early settlers Simple villagers	Questionnaire survey Group discussions Village and district registers Participatory mapping Interviews	Quantitative (descriptive statistics) Qualitative (discourse analysis, ranking) Quantitative (descriptive statistics) Qualitative (GIS mapping) Qualitative (discourse analysis)
Livelihood change	Household group Household		Livelihood activities Labour allocation Land use patterns...	Household heads	Questionnaire survey	Quantitative (descriptive statistics)
Social differentiation Power relations Environmental discourses	Social network Actor		Livelihood activities Individual aspirations Decision making Environmental issues...	Members of the 40 sample households Particular individual cases Members of existing social networks	Interviews	Qualitative (discourse analysis)

### 2.1.2. *Research sites*

For its biophysical experimentations, MSEC selected small watersheds in the uplands of five Southeast Asian countries (Laos, Vietnam, Thailand, Indonesia and the Philippines). Following this selection and bearing in mind basic constraints of mobility and cost, four research sites were selected in Laos and Thailand for the implementation of a socio-economic survey. As MSEC was interested in linking the existing biophysical data with socio-economic information, two sites in each country were first selected in order to cover partly or fully the experimental catchments. Then, in an attempt to take into account off-site effects of soil erosion on downstream farming systems, another village, hydrologically-linked to the initial village, located downstream, and presenting similar livelihood activities, was selected.

As pointed out in the introduction to this chapter, research in the two study villages of Thailand was abandoned in 2005. The empirical material presented in this thesis is thus focused exclusively on the Laotian cases. The two study villages, Ban Lak Sip and Ban Done Kang, are both located along the national road No. 13 linking Vientiane to the northern provinces (Figure 2.2). They are relatively recent settlements in the vicinity of Luang Prabang, the provincial and district capital. Along with common climatic conditions – i.e. a tropical monsoon climate with important variations in rainfall and temperature between rainy/hot (from April to October) and dry/cold (from November to March) seasons – both villages are located in the same narrow valley and their land stretches out over the overhanging steep slopes. The altitudes of Ban Lak Sip and Ban Done Kang are approximately 430 and 390 metres respectively, but parts of their land rise above 700 meters. In general, the two village territories can be described as mountainous with average slope gradients of 25-30 percent, ranging from 0 to more than 90 percent<sup>3</sup>.

The vegetation cover is mainly composed of mixed deciduous and dry dipterocarp forests on the hilltops and crests, forest regeneration mixed with grass (i.e. bush fallow), teak plantations, annual crops (e.g. rice, Job's tear, maize) and gardens (e.g. bamboo,

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<sup>3</sup> Calculated from a 50-m resolution Digital Elevation Model (Source: MRC dataset).

lemon grass, cassava) on the slopes, and banana plantations and vegetable gardens in the lowlands and along the streams. Soils are clayey, with depths ranging from 1.5 metres in the bottom land to 0.5 metres in summit areas and, following this distribution, a soil structure evolving from relatively deep organic top horizons to very thin organic topsoil (MSEC 2003). Several streams run through the uplands and feed the Xon River which passes through Ban Lak Sip (upstream) and Ban Done Kang (downstream) before combining with the Dong River, a tributary of the Mekong.

Ban Lak Sip and Ban Done Kang residents are involved in a variety of on-farm livelihood activities. Annual cropping takes place within a rotational shifting cultivation system, and plots are now commonly cultivated for one or two successive years before a two or three year fallow period. In 2003, the main crops included upland rice for subsistence as well as maize and Job's tear sold to Luang Prabang collectors. In addition to annual cropping, vegetable production (e.g. chilli, beans, coriander, lettuces, watercress and several grasses) based on a continuous cultivation system, collecting forest products (e.g. fuel wood, mushrooms, bamboo shoots, rattan, and grasses), hunting (mainly small rodents and birds), livestock farming (e.g. poultry, pig, cattle) and perennial tree production (mainly teak and banana) also form important land-based livelihood activities. In the two villages, the location of the on-farm activities varies by slope and elevation as stylized in Figure 2.3 and Figure 2.4<sup>4</sup>. In general, annual cropping as well as collection of forest products and hunting are concentrated in the high elevation, steeply sloping areas while livestock production is almost exclusively undertaken within the village and on gentle slopes. Vegetable crops and tree plantations are now found across the landscape. Of particular note in this spatial distribution are the high elevation, steep slope zones where a very significant number of livelihood activities are concentrated. In addition to these land-based farming activities, non-farm activities such as small-scale trading, craftwork or labouring – undertaken in the village and, to a minor extent, in Luang Prabang – contribute significantly to the livelihoods of many households.

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<sup>4</sup> Land use area by location was estimated using villager-derived information superimposed on a Digital Elevation Model of the village land (see below, Section 2.2.1).

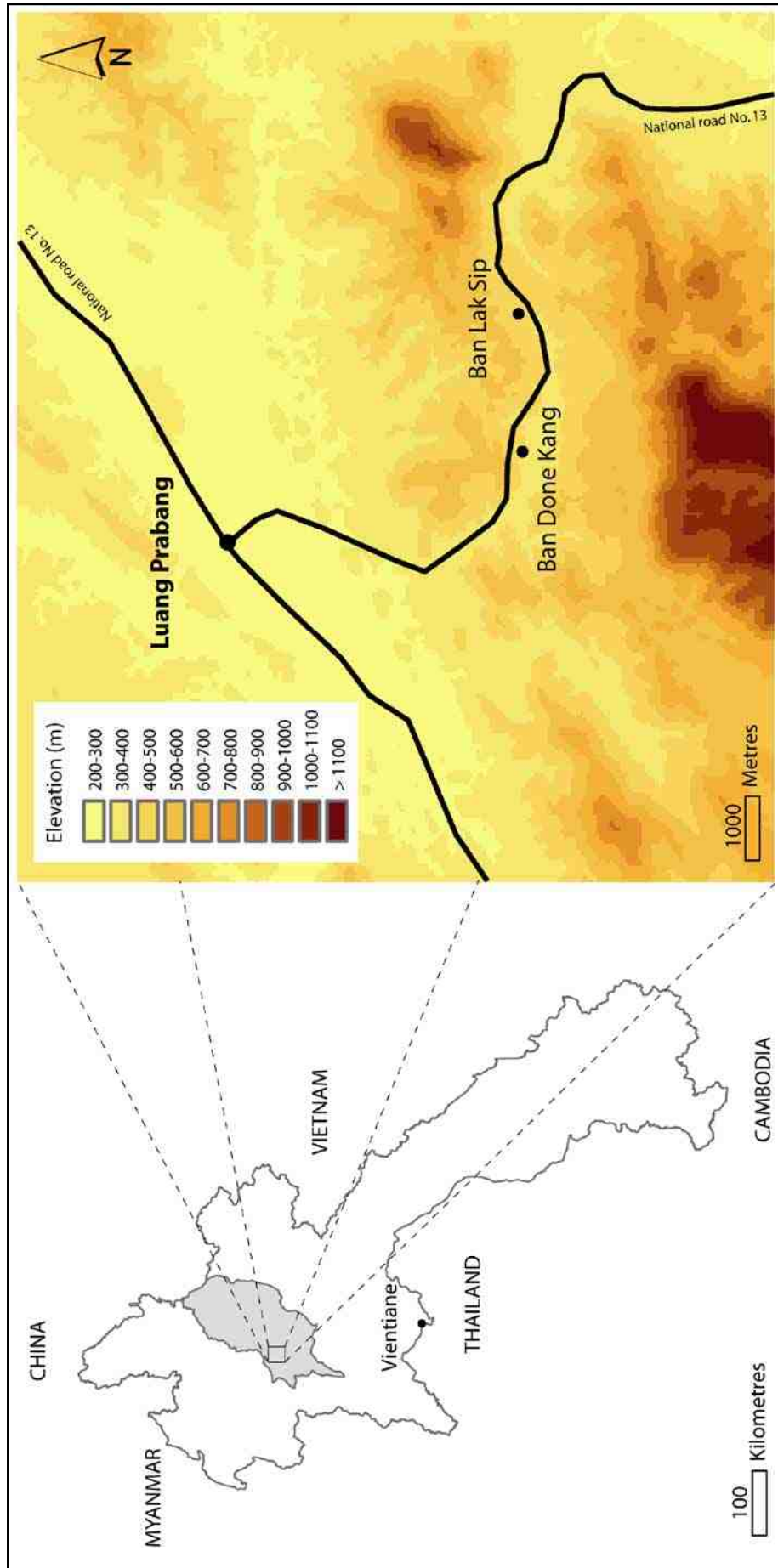


Figure 2.2: Location of the two study villages - Ban Lak Sip and Ban Done Kang.

Figure 2.3: Distribution of livelihood activities, by altitude and slope characteristics in Ban Lak Sip, 2003<sup>5</sup>.

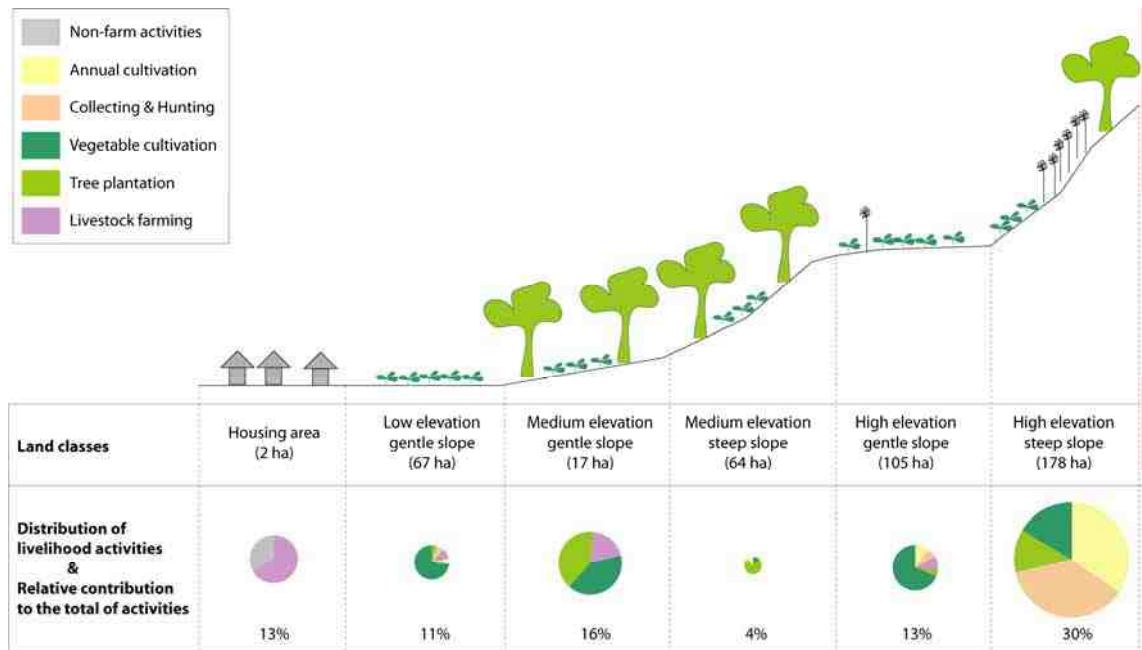
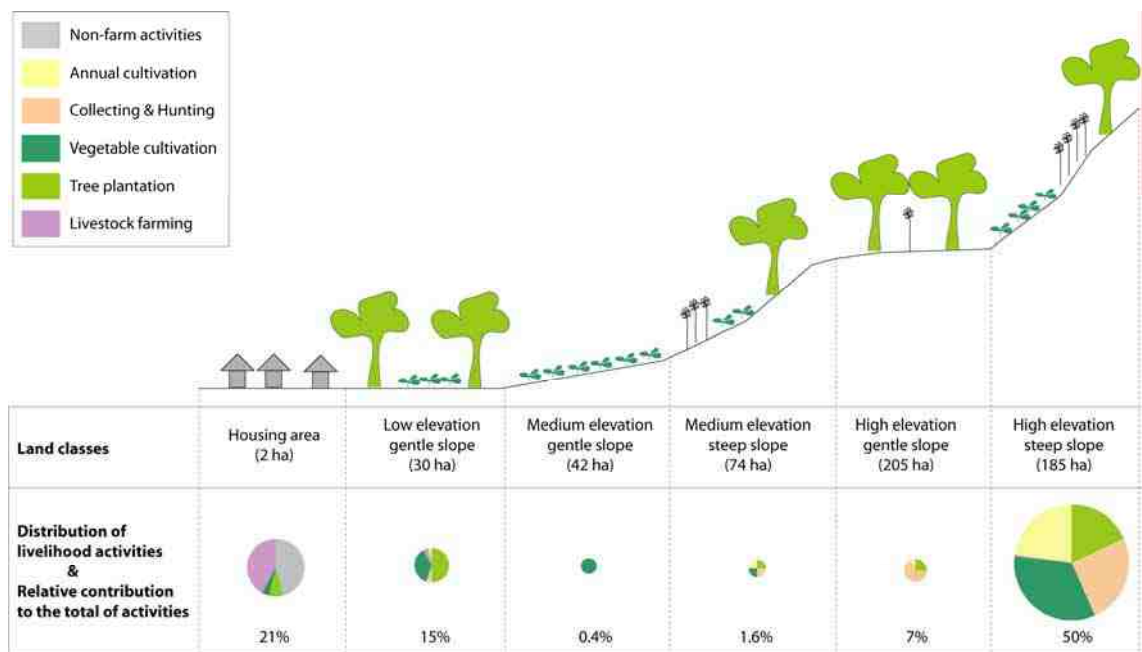


Figure 2.4: Distribution of livelihood activities, by altitude and slope characteristics in Ban Done Kang, 2003<sup>5</sup>.



<sup>5</sup> The pie charts represent the distribution of livelihood activities within an elevation/slope class. Their sizes are proportional to the contributions of a particular class to the total of livelihood activities.

Beyond these common grounds, the histories of the two settlements are different: one marked by significant external interventions (i.e. national resettlement schemes) and the other characterized by spontaneous immigration (Figure 2.5). Settlement of Ban Lak Sip land began in 1962 by three families, two from Udomxai province and one from the neighbouring district of Nan. The population increased slowly between 1962 and 1975 with the arrival of new families fleeing the war in the northern provinces of Laos. Then, as part of the national resettlement scheme (see Chapter 4, Section 4.2.2), the village underwent three important immigration waves in 1976-77, 1982-83 and 1996. In total, forty seven households from five neighbouring upland villages have been resettled in Ban Lak Sip. In 2003, the village community was composed of 503 inhabitants – 93 households – of which a large majority belonged to the Khamu and Lao ethnic groups, 86 and 11 percent respectively of the total village population (see Table 2.1).

Settlement of Ban Done Kang land began in 1972 when seven families arrived from Udomxai province to exploit the land acquired there by an acquaintance. In 1973, ten new families arrived from Udomxai to join their relatives. In 1980, after the owner decided to recover his land, four families among the first settlers left the village while the others bought land rights for housing. Since then, apart from five Hmong families relocated from a neighbouring village in 1996, Ban Done Kang has undergone a quasi-continuous immigration flow largely guided by kinship relations: families coming to join their relatives, and young men from surrounding areas marrying village residents and settling in the village, for example. At the same time, a number of civil servants from Luang Prabang also moved to the village, some employed at the waterworks located near the village, others working in town but attracted by the low costs of living and access to land. In 2004, the village had 321 inhabitants – 64 households – mainly belonging to the Khamu and Lao ethnic groups, 60 and 30 percent respectively of the total village population.



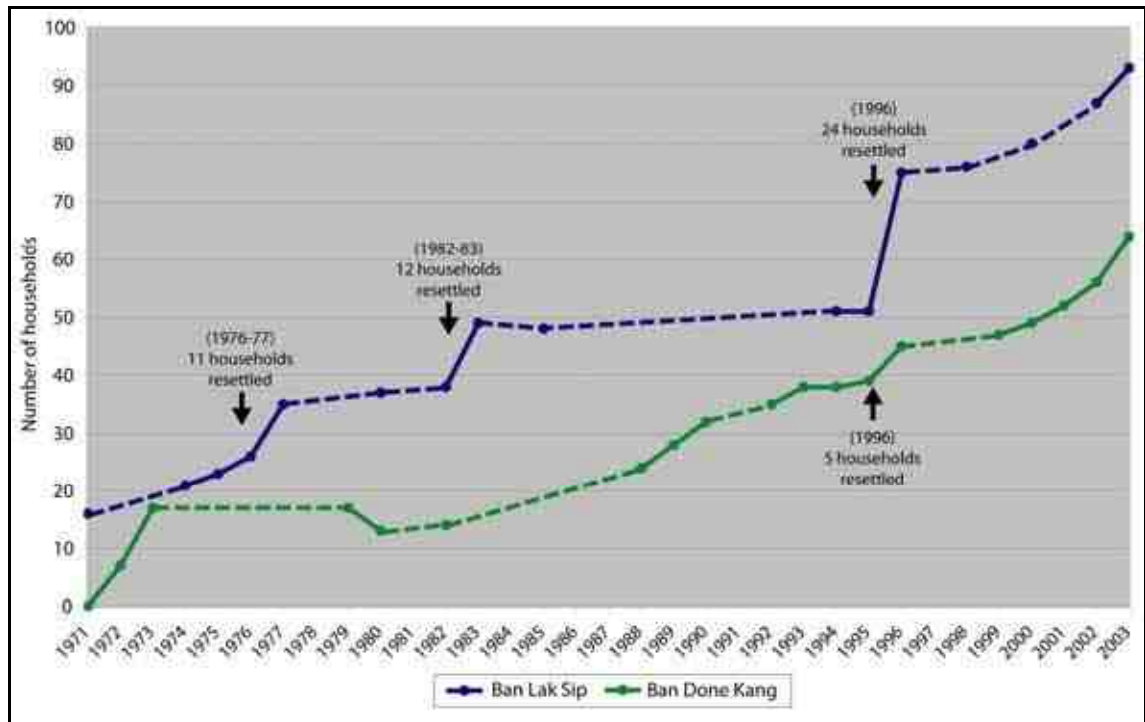
Figure 2.5: History of the settlement in Ban Lak Sip and Ban Done Kang, 1971-2003<sup>6</sup>.

Table 2.1: Population and ethnic distribution in Ban Lak Sip and Ban Done Kang, 2003.

Village	Ban Lak Sip	Ban Done Kang
Population (households (persons))	93 (503)	64 (321)
Ethnic distribution (% of village population)	Khamu : 86% Lao : 11% Hmong : 3%	Khamu : 60% Lao : 30% Hmong : 8% Tai dam : 2%

In terms of their physical geography, the two villages are typical settlements of the northern uplands of Laos. Although they have different settlement histories, Ban Lak Sip and Ban Done Kang present two communities largely composed by ethnic minorities and, in this regard, they are also characteristic of the social contexts of the uplands (see Chapter 4, Section 4.1.3). However, compared with more remote upland villages, their location along a major road and their proximity to an average sized urban centre is likely to have accelerated and/or amplified a number of socio-economic dynamics linked with the development of the country (e.g. rapid market integration,

<sup>6</sup> Points and continuous lines correspond to data from interviews, village statistics and a report from a FAO project active in the two study villages (Sharma 1988). The periods for which information is unavailable are represented by dotted lines.

adoption of non-farm occupations, rural depopulation, etc.). Furthermore, located within a short distance from the district and provincial administrative offices, the political pressure from the authorities, for the compliance with land regulations notably, has probably been stronger in the two study villages than in more remote areas (see also Chapter 6, Section 6.4.2). To some extent thus, it can be argued that villages like Ban Lak Sip and Ban Done Kang are situated in the front line of upland development policy and that what has happened over the past twenty years in these two villages is perhaps an ‘exaggerated’ version of what might be observed in more remote areas.

## **2.2. Methodological approach**

### *2.2.1. The approach developed with MSEC*

The research undertaken within the MSEC framework has been largely inspired by ‘agro-ecosystem analysis’ concepts and methods (Conway 1985, 1987)<sup>7</sup>. It focused on the livelihood system defined as the outcome of the decisions taken by households in the allocation of resources (e.g. land, labour and capital) to various activities (e.g. cropping, livestock farming and non-farm work). This system is conceptualized as lying at the intersection between village land and village community, two dimensions that determine limits within which livelihoods are physically possible (e.g. resource base accessibility, system productivity) and socially acceptable (i.e. suitable to the individual and community goals, institutions and beliefs). It is subject to some ‘exogenous’ conditions and constraints related to factors such as state policy (e.g. land regulation, rural development policy), population dynamics (e.g. density, migration), economic processes (e.g. market incentives), or cultural change (e.g. ‘modernisation’, resurgence of traditional values). As illustrated in Figure 2.1, approaching this diversity of research objects has required a wide range of data, data sources, methods of collection and analysis (see also Box 2.1 for a description of the different interview methods used).

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<sup>7</sup> The ‘agro-ecosystem analysis’ approach has greatly contributed to the development of the Sustainable Livelihoods Approach, notably through its definition of ‘livelihood systems’ and ‘sustainability’ (Chambers and Conway 1991; Scoones 1998) and its use of participatory research techniques (e.g. transect walk, diagramming, resource mapping).

**Box 2.1: Description of the interview methods**

*Semi-structured interviews:* This method involves the definition of survey grids used as guides to the interviews. For the purpose of making interviews sound like coherent conversations, survey grids are organized in a set of open questions structured by theme and, possibly, associated sub-themes. Following the thematic structure, interviews are then conducted with individual interviewees. During the sessions, the interviewer intervenes only to introduce new themes, develop sub-themes or redirect the interviewee towards neglected points if necessary. Overall, by maintaining an important freedom of speech, this method stimulates unexpected insights into issues raised spontaneously by the interviewees.

*Group discussions:* Similar to semi-structured interviews, group discussions are also based on survey grids. However, they are conducted with small groups of three to five interviewees. In order to avoid monopolization of the speech by a single interviewee and for the purpose of highlighting a potential diversity of opinions, interests and concerns, particular attention is paid to the gathering of individuals with similar social statuses and emphasis is put on provoking discussion among the interviewees. Again, this method allows the interviewees to develop potentially interesting issues that were not initially included in the survey grid.

*Participatory mapping:* This method aims at obtaining visual representations of spatially-distributed information and their perceived geographical context. Again, thematic grids may be used as a guide to the exercise. Conducted with individuals or small groups, participatory mapping usually starts by the interviewer presenting the different questions approached and asking the informant(s) to delimit the geographical context in which the information will be mapped. For instance, the interviewer may ask the informant(s) to draw a sketch of the village boundaries and represent major geographic features within these boundaries (e.g. housing areas, roads, streams, mountains). Then, the interviewer intervenes to introduce, one by one, the information to be mapped by the informant(s).

*Unstructured interviews:* Without any thematic guide or predetermined sets of questions, unstructured interviews consist of asking individual interlocutors to relate their own experiences (for instance, from their youth to the present days or during a particular period of time) and, that way, to describe, and situate in time, particular events or situations that have marked their life course. Ideally, the interviewer intervenes only at the start of the interview and later, only if necessary, for sustaining the speech of the interviewee.

*Structured interviews by questionnaire:* In contrast with the four methods above, interviews by questionnaire are largely based on a set of closed, quantitative and qualitative questions. When the structure of the questionnaire is followed step by step, this form of interview can become rather tedious for both interviewee and interviewers. Given its length, this was particularly true for the abovementioned questionnaire on livelihood systems. However, using as often as possible the structure of the questionnaire as a thematic guide provided the interviewees with a minimum of freedom of speech and contributed to make the exercise less monotonous.

In general, primary data describing the livelihood systems in the two study villages were obtained through structured interviews by questionnaire with sample households (see Appendix, Figure A1). The questionnaire survey was used for building a socio-economic database valuing, for each livelihood activity of each sample household, the evolution of different quantitative and qualitative variables (e.g. species planted, surface areas cultivated, labour usage) over the past forty years. In practice, one questionnaire per livelihood activity and per household equals with one entry in the database. In order to cover a forty-year period of change, four time steps were defined according to the main historical events identified by villagers during preliminary interviews (Table 2.2).

*Table 2.2: The four time steps defined for the questionnaire survey on livelihoods in Ban Lak Sip and Ban Done Kang*

1970 / 1980	1990	1995	2003
The first settlers arrived in Ban Lak Sip in 1962 and Ban Done Kang in 1972	Ban Lak Sip underwent two major resettlement phases in 1976-77 and 1982-83	Ban Lak Sip villagers have access to Luang Prabang by the paved road in 1992	Since the mid-1990s, several companies are established in Luang Prabang for promoting Job's tear production and NTFP collection in rural areas
	Ban Done Kang villagers have access to Luang Prabang by the paved road in 1990	The land use planning and land allocation programme is implemented in Ban Lak Sip in 1995	
	A land use planning is implemented in Ban Done Kang between 1986 and 1989		Ban Lak Sip and Ban Done Kang underwent a major resettlement phase in 1996

In order to gain information on land use, two maps drawn by the chiefs of the two study villages (in January 2003 in Ban Lak Sip and September 2003 in Ban Done Kang) were used to delimit village lands on a 50-m resolution Digital Elevation Model of the study area. The topographic maps of the villages were then used to delimit five elevation/slope classes, reflecting different levels of constraint related to accessibility and land use:

- Low elevation / gentle slope (distance to the road = 0-150m; slope  $\leq$  27%)
- Medium elevation and gentle slope (distance to the road = 150-300m; slope  $\leq$  27%)
- Medium elevation and steep slope (distance to the road = 0-300m; slope  $>$  27%)

- High elevation and gentle slope (distance to the road > 300m; slope  $\leq$  27%)
- High elevation and steep slope (distance to the road > 300m; slope > 27%)

Accordingly, interviewees were asked to associate their livelihood activities with these elevation/slope classes.

Sample households were selected using a stratified random sampling method based on land tenure. Land tenure is often one of the most easily accessible data sources that can be used for differentiating rural households engaged in farming and other land-based activities. Indeed, according to literature on rural livelihoods, access to land plays an important role in shaping livelihood constraints, opportunities and strategies of rural households (e.g. Ellis 1998; Scoones 1998). From a socio-political viewpoint, land tenure can also represent an interesting variable, for it partly embodies local wealth differences and, to some extent, reflects configurations of power within rural communities. However, when choosing land tenure as the main variable, it should be acknowledged that other determinants of social differentiation can be partially hidden or attenuated. For instance (and even though it does not impinge on the results presented in this thesis), it must be noted that the land tenure criterion appeared clearly more relevant in the Laotian study villages, still very much engaged in farming, than in the Thai study villages which showed much less engagement in farming activities, a more balanced land distribution and, possibly, different expressions of power and wealth (e.g. related to employment situation or education level).

In practice, four different classes of land tenure were determined on the basis of the land registers maintained by the village authorities. The questionnaire survey proved to be a highly time-consuming operation and, as a result, samples have been limited to twenty households per village distributed in accordance with the relative importance of each land tenure class and selected at random within each class (Table 2.3 and Table 2.4). Interviews were undertaken among the heads of the sample households, during several field visits in Ban Lak Sip – between January and April 2003 – and Ban Done Kang – between September 2003 and December 2003. While I participated to the first interviews in the two villages, most of this work has eventually been conducted by a Laotian research assistant employed by MSEC (see below, Section 2.3, for a discussion of associated ‘positionality’ issues). The information collected has then been entered in

a relational database using Microsoft Access and analysed using descriptive statistics and simple statistical methods such as counting, average calculation and cross-tabulation.

*Table 2.3: Land tenure classes and stratified random sampling in Ban Lak Sip*

Land tenure (ha)	Percentage of households	Random sample
0.8 - 1.8	21%	4 households
2 - 2.8	30%	6 households
3 - 3.8	40.5%	8 households
> 4	8.5%	2 households

*Table 2.4: Land tenure classes and stratified random sampling in Ban Done Kang*

Land tenure (ha)	Percentage of households	Random sample
0	18%	4 households
0.8 - 2.5	32%	6 households
2.8 - 3.8	30.5%	6 households
> 4	19.5%	4 households

One of the original purposes of the questionnaire survey was to allow for statistical analyses linking soil erosion data and land use change. However, due to various issues (including, elusiveness of the information, slowness of the survey, small samples and limited statistical significance), the information collected has instead been used as a simple descriptive and comparative dataset aimed at highlighting local livelihood change. Indeed, as pointed out in the Participatory Rural Appraisal-related literature (e.g. Chambers 1997; Inglis 1991) and as experienced during this study, questionnaire surveys have important limits (e.g. high costs in time) and biases (e.g. simplified or distorted reality, investigators' influence on the answers). In order to address these issues, the information on local livelihood systems drawn from the questionnaire survey has been complemented and questioned through interviews based on more participatory techniques (i.e. semi-structured and unstructured interviews with key informants, group discussions; see Box 2.1). During these interviews, descriptions of local and regional, political and socio-economic trends and constraints influencing access to, and control over resources (e.g. land tenure, infrastructures, population density) have also been gathered in order to illuminate livelihood change.

I conducted all these interviews in English with the support and translation of the same research assistant that was conducting the questionnaire survey on livelihoods. In January and February 2003, two semi-structured interviews and three unstructured interviews were conducted in Ban Lak Sip; one with the village chief, three with village elders, and one with a local middleman conveying villagers' productions to Luang Prabang markets. These interviews focused on the history of the settlement, major livelihood and land use changes since the creation of the village, land policies and regulations in the village, the development of the infrastructures (e.g. road, electricity), and the current market demand in agricultural and forest products. In March 2003, five new unstructured interviews and two semi-structured interviews were conducted; one with a former village chief, two with village elders, two with resettled villagers, and two with villagers working on the MSEC experimental catchment. Along with further information related to the various themes above, these interviews allowed gathering local perceptions on the main environmental issues in the village land and detailed descriptions of the actual implementation of resettlement policy.

Similar interviews were conducted in Ban Done Kang one year later. In March 2004, four semi-structured interviews were conducted; one with the village chief and the three others with village elders. Again, these interviews focused on the history of the settlement, major livelihood and land use changes since the creation of the village, land regulation and resettlement, the development of the infrastructures, and the current market demand in agricultural and forest products. During the same period and focusing mainly on recent livelihood and land use change in the village, a group discussion was conducted with three farmers. In addition to these interviews with villagers, between January and August 2003, five semi-structured interviews were conducted in Luang Prabang; four with officers from the District Agriculture and Forestry Office and one with a representative of an export company specialized in agricultural and forest products. These interviews allowed to gather information on regulations and policies related to land and other natural resources, their actual implementation (in general and in the two study villages), major livelihood and environmental issues acknowledged by local state agents, and emerging market incentives for commercial production in rural villages surrounding Luang Prabang.

In addition to this primary data, reports and publications by national agencies, international organisations and academics collected and reviewed throughout the six years of study have provided information on the broader socio-economic and policy environments. Discourse analysis has been used for both this literature and the transcriptions of the group discussions and individual interviews above. At first, using Weft QDA, a computer-assisted qualitative data analysis software, passages of the transcribed interview data were codified according to various themes interesting the study (livelihood change, land regulation, resettlement, etc.). These passages were gathered, theme by theme, in sheets of synthesis. In turn, passages of official reports, government publications and scientific literature corresponding to these themes were extracted and gathered in similar sheets of synthesis. This thematic aggregation of the information was then used, for instance, in comparisons of local perceptions and representations with official discourses. Unfortunately, the ‘qualitative database’ was entirely lost in April 2006<sup>8</sup>. After this date, unable to allocate the time required for re-transcribing the interviews in electronic format and rebuilding the database, discourse analysis, extraction and comparison have been undertaken directly during the writing up of the thesis, through a re-reading of both literature material and the interview data transcribed in the fieldwork notebooks. This process has been facilitated by the recollection of the main findings associated with the previous computer-assisted analysis.

In practical terms, if it had been used as a single data collection method, questionnaire surveys would have required a major input in terms of time and left uncertainties regarding the driving forces behind local livelihood change. Similarly, participatory methods alone would have been either dubious or very expensive methods for characterizing broad scale socio-economic and policy environments (Chambers 1995b) and would have provided only rough descriptions of local livelihood change. In contrast, mixing descriptive statistics based on questionnaire surveys and qualitative data based on participatory assessments and literature review has reduced the time needed to collect in-depth information. Importantly, participatory assessments have contributed to counterbalance the simplifications inherent in questionnaire surveys and

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<sup>8</sup> After my computer and hard disk backups were stolen in Vientiane.



their closed and pre-selected questions. In particular, they have allowed explaining local livelihood trajectories highlighted by the questionnaire survey and redrawing complex chains of causality linking livelihood decisions with local and broader scale socio-economic and political factors. It has to be noted that such techniques engaging the researched in the analysis of previous findings do not make this study a ‘participatory research project’, not least because local populations did not intervene in the definition of the research problematic (Pain and Francis 2003). However, the methods adopted did allow the research to place local knowledge, capabilities and complex realities at the centre stage. Such richness and depth in the information collected could certainly not have been achieved through a questionnaire survey alone (Rocheleau 1995).

Information related to the physical environment and the connections between land use practices and land degradation has been taken from MSEC field work and complemented by group discussions and interviews with farmers working on the experimental watershed. In March 2004, a questionnaire survey was conducted among 16 of the 27 farmers working in the MSEC experimental watershed. The survey focused on farmers’ perceptions in relation to soil erosion (e.g. rates, evolution and impacts on hydrological systems) and the recent evolution of the agricultural yields in the catchment. Again, this information was entered in a database and analysed using simple descriptive statistics. Then, in July-August 2004, three group discussions were conducted, involving three to four farmers working in the MSEC experimental watershed on each occasion. The discussions focused on the identification and sorting of local indicators and factors of soil erosion and land degradation. On this basis, the interviewees reconstructed different stages of land degradation representative of the evolution of the watershed. Finally, the abovementioned literature review (i.e. reports and publications by national and international organisations) and related discourse analysis provided another set of data on official (or mainstream) representations of environmental change and associated issues in the uplands of Laos.

In contrast with data on local livelihood change, integration of the different datasets on environmental change has not only involved ‘complementation’ but also ‘cross-checking’. Thus, farmers’ assessments of soil erosion in the MSEC experimental catchment have been confronted to MSEC’s measurements of soil erosion rates and

sediment yields. Similarly, mainstream environmental discourses have been confronted with local ‘theories’ on the main proximate factors underlying land degradation and MSEC’s statistical analyses investigating correlations between sediment yields and environmental factors (e.g. rainfall amounts, slopes, soil characteristics, land uses).

Two reasons motivated the use of such “‘hybrid’ research techniques” (Forsyth 1996: 388) combining *and* confronting biophysical measurements with human perceptions and discourses. First, as pointed out by various authors (e.g. Ericksen and Ardon 2003; Gray and Morant 2003; Murdoch and Clark 1994; Stringer and Reed 2007), neither scientific nor local knowledge of land degradation is complete. Science can provide very precise measurements of land degradation processes; scientific assessments, however, are often limited to a particular set of indicators and/or a short time scale and they frequently miss broader social, contextual information that is necessary to understand how and why degradation is occurring. In this regard, local knowledge can provide more comprehensive and often complementary perspectives on land degradation. However, the use of local knowledge is not straightforward. Practical experience and local perceptions can be quite different, even contradictory, from one individual to another depending on the social context in which he/she lives. In the end, environmental assessments based exclusively on local accounts may sometimes reflect changes in the concerns and expectations of local populations rather than actual land degradation dynamics. Hence, combining scientific measurements with an approach that draws on local knowledge allows information verification and complementation and can thus lead to a more accurate and comprehensive assessment of local land degradation issues.

Second, while it is now widely recognized that farmers possess an important body of knowledge concerning soils and their use for agriculture (e.g. Blaikie and Brookfield 1987; Chambers 1983; Wrinklerprins 1999; Zimmerer 1994), this local knowledge is often only partially exploited. As Niemeijer and Mazzucato (2003) point out, very few studies focus on the ‘theories’ that local populations have on soil formation and land degradation processes. Instead, most of the studies related to local soil knowledge “focus on either correlation and comparison of local classifications with scientific soil classification systems and methods or on agricultural adaptation and decision-making in relation to local soil classifications” (Niemeijer and Mazzucato 2003: 404). To some

extent, one might say that these studies are merely using local knowledge to support, reinforce and legitimate science. Indeed, rather than challenging the land degradation status and factors as they are established in mainstream discourses, they are providing ways to translate the latter discourses into soil and land degradation concepts understandable by local populations. The risk is that, instead of working towards empowerment of the local actors – one of the central goals of participatory approaches (e.g. Chambers 1995a) – these studies might only provide subtle avenues for strengthening and/or expanding the control mechanisms of more powerful actors. In contrast, confronting scientific evidence with both mainstream environmental discourses and local ‘theories’ can provide insights into the power relations embedded in human explanations for, and experiences of environmental issues (see Chapter 3, Section 3.1.1).

Overall, by information complementation and confrontation, the different methods and sources combined have resulted in methodological and data triangulations (Denzin 1970; Thurmond 2001). For the approach to livelihood systems, triangulation has allowed a comprehensive approach to local livelihood change, complementing quantitative assessments of social dynamics with the causal explanation of these dynamics by a diversity of actors. For the approach to local environmental change, basing the research on a ‘mixed-method/mixed-source’ design has not only improved confidence in the validity of some empirical findings but, in the face of contradictory results stemming from different sources, it has also provided a basis to discuss the existence of multiple realities (or interpretations of the same reality) and their underlying rationales (Kelle 2001; Olsen 2004). In turn, the identification of these multiple realities and rationales has provided an analytical link between actors’ environmental perceptions and discourses and livelihood decisions and, this way, contributed to the integration of the two broad datasets – on livelihood systems and local environmental change. However, subsequent to my engagement in the preparation of a PhD study, an important methodological shortcoming emerged that would call for additional field surveys.

### 2.2.2. *Methodological adjustments*

The guidance of my PhD supervisors, as well as theoretical engagement with political ecology and the Sustainable Livelihoods Approach, allowed for a questioning of the methodological approach developed within the MSEC framework. First, as further described in the next chapter (see Section 3.2), both political ecology and the Sustainable Livelihoods Approach call for studying socio-environmental interactions at multiple scales and from various social perspectives. In particular, approaching socio-environmental change requires, as some political ecologists advocate, the integration of measured biophysical dynamics with their perception by various actors. Through its variety of research units, scales, data collection methods and sources, the research undertaken with MSEC certainly allowed analysis across scales – from the cultivated field to the country level – how socio-environmental interactions are expressed in, and influenced by various processes ranging from plant-soil interactions to broad scale political-economic forces. In other words, it authorized a ‘progressive contextualization’ of concurrent social and environmental changes at various scales (Vayda 1983). Importantly, by combining qualitative and quantitative data from multiple, biophysical and human information sources, the previous research process could be used to contribute to the political ecology effort toward a ‘hybrid research’ agenda. Second, the Sustainable Livelihoods Approach, as well as recent literature in political ecology (e.g. Batterbury 2001; Warren *et al.* 2001), recommend a combination of ‘locally-grounded’ empirical research and comparative methods for analysing society-environment interactions. Again, based on a comparative approach to local case studies, the research undertaken with MSEC could meet the needs of the two theoretical approaches.

However, other imperatives – suggested by my PhD supervisors and underlined in both political ecology and livelihoods-related literature – did call for an adjustment of the methodological approach. During the early stages of fieldwork, most of the information collected on local livelihood change related to the combination of economic activities that people undertake, the techniques associated with these activities, the amount of land, labour and capital that they require, their economic purpose and the way these variables changed over time. Thus, following concepts put forward by the SLA, if the survey did consider people’s use of natural, physical, financial and human capitals,

social capital was largely excluded from the research. In fact, by defining the household as the elementary research unit, the MSEC approach overlooked the complex interactions between individuals and social groups and their divergent or conflicting strategies and discourses. By extension, processes of change occurring and determined at other levels of organization (e.g. between the genders and generations, and in terms of interpersonal networks) were excluded from the picture. Thus, in order to both complete the study of local livelihood change and allow a more comprehensive analysis of local political ecologies, the research needed to shift from a focus on the household to a more ethnographic, actor-centred perspective.

Accordingly, two additional rounds of survey were undertaken. The surveys involved semi-structured interviews with key informants selected, with some exceptions, among members of the forty households sampled during the previous research phase. The first round of these supplementary interviews was conducted in July and August 2004 among members of 10 households in each study village – including male, female, old and young members<sup>9</sup>. Interviews have been based on the analysis of the existing dataset on local livelihood systems and the identification of different livelihood trajectories at the household scale. These trajectories have been ‘de-constructed’ through actor-centred interviews focusing on intra-household scale differences (see Appendix, Table A1). Importantly, gender and generational differentiation in terms of livelihood activities and decision-making have been questioned in order to highlight the various individual strategies and the power relations that structure the household. In an attempt to evaluate the functions and importance of social networks, interviews also focused on the connections and alliances of local villagers with non-local actors (e.g. expatriate relatives, state agents, foreign development projects).

Conducted in November-December 2005, the second round of interviews concentrated largely on local environmental discourses. 17 villagers were interviewed in Ban Lak Sip and 13 in Ban Done Kang – including male, female, old and young interviewees<sup>10</sup>. In a

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<sup>9</sup> A total of 26 interviewees: 8 men aged more than 25, 5 men aged less than 25, 10 women aged more than 25, and 3 women aged less than 25.

<sup>10</sup> A total of 30 interviewees: 12 men aged more than 25, 2 men aged less than 25, 11 women aged more than 25, and 5 women aged less than 25.

similar vein to the previous survey round, interviews questioned gender, generational and occupational differentiation in terms of perception and representation of the village territory, local land use and regulations, and local environmental issues. During the same period, six new unstructured interviews were also conducted – with village chiefs, elders, district officers, and emigrants – in order to complete the existing dataset on local socio-economic and political constraints and recent livelihood change in the two study villages.

As described for similar work undertaken within the MSEC framework (see Section 2.2.1), discourse analysis has been used for these semi-structured and unstructured interviews. Some of this material has then been integrated as complement for explaining local dynamics highlighted by the database on livelihood systems. Other portions of this material have been integrated in the ‘hybrid research’ approach to local environmental change described above (see Section 2.2.1). Also integrated in the latter approach, a new questionnaire survey was conducted in the two study villages in November 2005. During this survey, 60 individuals<sup>11</sup> were interviewed on the recent evolution of the villages’ endowment in natural resources (e.g. soil and water quality, biodiversity, forest density) and the perceived causes for this evolution. Finally, contributing to the same ‘hybrid’ approach, four group discussions were organized in December 2006 (each time with four farmers working in the MSEC experimental catchment) and reiterated previous discussions on the local indicators and perceived factors of land degradation.

Overall, the methodological framework described appears less the result of a carefully designed research project than a ‘productive *bricolage*’<sup>12</sup> that has evolved as the conceptualisation of one of the core research object evolved – i.e. livelihood change was approached, first, at the household scale and, later, at the individual scale. Yet, this ‘productive *bricolage*’ – involving qualitative and quantitative material, derived from various sources, collected and analysed through various methods, and brought together as either complementary or comparative datasets – has been developed and adjusted over a six-year period. In that sense, time and labour costs can certainly be considered

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<sup>11</sup> 31 household heads in Ban Lak Sip, 29 in Ban Done Kang, all selected at random.

<sup>12</sup> Diverted from its original context, this term is used as an implied reference to the work of Batterbury (2001) on the political ecology of livelihood adaptation and diversification in West Africa.

as major drawbacks for the study. Most probably, if the methodological approach had been better planned and informed from the outset of the study, less time would have been spent reconsidering and completing previous work. In turn, however, the study has also significantly benefited from the process of going back and forth between field survey and data analysis over a relatively long period of time. Indeed, each additional field visit has been the occasion to question, confirm or invalidate conclusions drawn from previous data analysis and, for instance, to examine the durability and medium-term outcomes of social and/or environmental dynamics observed during previous stages of fieldwork. More practically, the repeated visits in the study villages have also contributed to build up a relationship of trust and respect between researchers and researched. As further discussed in the following section, this relationship has provided me with easy access to information that would perhaps not be given to a newcomer.

### **2.3. ‘Positionality’ and other reflections on the research process**

Along with complex and changing research conditions, this study is also characterized by complex interactions between a diversity of actors. While a comprehensive record of these interactions is an impossible task, in the ‘leading roles’ the research has involved: two upland villages populated by ethnic Khamu and Lao farmers, a research team working for an international consortium and mainly composed of Laotian and French biophysical scientists, two PhD supervisors based at the University of Durham, a young Lao male assistant-interpreter from a southern town of Laos with a BSc in agricultural sciences, and a young western white male researcher, non-Khamu speaking, with an academic background in ecology. The research process has been particularly influenced and reoriented, at different stages and in many ways, by these various actors. Highlighting and analysing these influences and their consequences on the data collected and the knowledge produced is an extremely complex, at times unachievable, exercise (Rose 1997). However, some of the issues encountered during the study and their associated methodological adjustments can help to position the research.

Logically, the first and major set of influences and constraints that one would expect to encounter is related to my affiliation with a larger research project. Even if the socio-economic research agenda of this project was only broadly defined, permitting scope for

manoeuvre, the MSEC programme indirectly had substantial influence on the methodological approach that was chosen for this research. Broadly described, the approach consisted of two successive steps. At first, a dataset has been built with the aim to identify recent farming system changes in the study villages. Then, the changes identified have been questioned in view of both local land degradation processes and broader political and socio-economic dynamics. Such a ‘top-down’ approach is not inconsequential. Using observations drawn from a dataset as a basis for investigation may sometimes lead to a reduction of the researcher’s perspective, to the detriment of a truly holistic approach. Analysed *a posteriori*, this methodological choice has, in part, been prompted by the MSEC project’s ‘philosophy’ which presupposed that the sites were undergoing a rapid agrarian transition, a view that I shared. It has also been influenced by MSEC’s immediate political needs at the time that I began my study. Being a multi-disciplinary project, MSEC wanted to be able to rapidly present a socio-economic dataset and, preferably, standard and ‘easily publishable’ data for the funding institutions. Obviously, other approaches could have been chosen. For example, one might have chosen a more ethnographic, ‘bottom-up’ approach by studying micro-local interactions in order to redraw broader scale changes, limiting thus any preconceptions. As a tempering note, however, MSEC’s political needs may well have influenced the choice of data collection methods but, in view of the empirical material collected, the assumption of rapid agrarian change proved to be a faithful account of the two study villages’ recent history (see Chapter 5 and 6).

The research has also taken place in some predetermined conditions and, in particular, in villages chosen for their hydrological links to the watershed monitored by the MSEC project. The initial objective of such a selection was to evaluate the impacts of soil erosion occurring in the experimental catchment on economic activities located downstream. Yet, even if the latter objective has remained unachieved, the villages selected have nonetheless constituted ‘first rate’ research sites for the present study. Indeed, working there has provided me with access to consistent biophysical datasets and expert knowledge, notably on local soil erosion processes and their relationships with environmental conditions and land use. The villages studied have also, fortuitously, proven to be valuable research sites from a theoretical point of view. While the MSEC experimental watershed was selected according to the criterion that it should enter a



relatively rough classification of land use transition (i.e. from shifting cultivation to pluri-annual cultivation and tree plantation), the villages surveyed revealed other interesting geographical, socio-economic and historical characteristics (see Section 2.1.2).

My affiliation with the MSEC programme has also had influences on access to information. In particular, the network of local informants built up by other MSEC team members before my arrival introduced some predetermination in my potential interlocutors. During the first field visits, I was almost systematically directed towards the same small group of villagers who had been interacting earlier with the MSEC team. Responding to potential issues of misrepresentation, a random sampling method was thus implemented for selecting the informants. The influence of the MSEC label has been more ambiguous concerning access to authorities. Indeed, stated or assumed affiliations “*influence* the research process, *disturb* power relations, and *permeate* everyday encounters” (Batterbury 1997: 89, original emphasis). On the one hand, if some officials proved relatively hard to reach at first, my affiliation to an international organization – with all the credibility it presupposes – has been a great asset, particularly among Asian elites rather sensitive to questions of rank. On the other hand, in a country like Laos where political constraints on official discourses are strong and the need for foreign projects and development funds is high, my affiliation has sometimes influenced the quality of the information collected. In order to avoid indirect criticism of the political regime with an assumed foreign representative and to appear as ‘good prospective partners’ for the MSEC project, officials have perhaps been more inclined to conceal some of the issues encountered during their work. Similar political constraints have perhaps also limited the ‘depth’ of answer of some villagers reluctant to discuss state policies that they consider sensitive.

Linked to the particular cross-cultural context of this research, another major issue of positionality has related to the various (re)interpretations of the information collected and its subsequent aggregation into a ‘composite knowledge’ co-constructed by both researchers and researched (Herod 1999; Reid-Henry 2003; Scott *et al.* 2006; Twyman *et al.* 1999). An event that occurred at the very beginning of my fieldwork period illustrates this point. Six months after arriving in Laos, I started my first week of

fieldwork by interviewing, with the help of my (English-speaking) Lao assistant, some informants in Ban Lak Sip. My purpose was to get a rough idea of the local livelihoods. I had begun to speak some Lao and, during the interviews, I was trying to understand the interviewees' answers before the translation of my assistant. During one of the interviews, I asked an elder Lao villager how many buffaloes he had. I understood the interviewee's answer affirming that he had eight buffaloes. While we both knew that there weren't so many buffaloes in the village, my assistant translated the answer by a surprising: "he doesn't know". Taken aback, I reiterated the question several times, but the interviewee kept answering the same and my assistant translating the same while, at the same time, I could feel a growing tension between us that made me shorten the interview.

After being, at first, rather irritated by my assistant altering the answers, I finally found our three behaviours to illustrate perfectly the 'hybrid discourse' that I would face during the rest of my fieldwork and that will constitute, for a significant part, the information on which I would base my research. Ownership of buffaloes is a symbol of power and wealth in Lao culture. So, while our interviewee was suggesting that he is an important man in the village, in a stubborn search for a Cartesian truth, I was violating the rules of precedence by challenging the affirmation of an elder. At the same time, by providing me with a false translation, my assistant was trying to defend both our interviewee and me from 'losing face'. In such a brief interaction, I still didn't know how many buffaloes the interviewee had, I had missed some information by shortening the interview, but I had learned certain essential things. I had learned that the interviewee is probably an important man in the village, that hierarchy is important in the village social structure, that social hierarchy is partly embodied in ownership, and, that, even if probably a particular case, I am part of the hierarchical structure. I had also learned that knowledge of the local language is a great advantage to gain potentially important insights. And most importantly, I had found out that the knowledge I intended to produce through my research will not only be determined by my own interpretations of the information collected but also by the multiple interpretations constituting the information itself.

Just as affiliations, hierarchical relations also contribute to shape researchers' access to information. As argued above, I have systematically been 'internalized' in the hierarchical structure of the communities researched. The research has greatly benefited from my particular position in this structure. The 'white western educated male' appears to have largely compensated the 'young' of my identity and, together with the MSEC label, has allowed me to earn the respect of a majority of villagers. In turn, respectability has provided me with relatively easy access to all categories of interlocutors without, it would seem, distinction of power, wealth, age or gender. This position has also been both reinforced by and reflected on my assistant who, while giving me even more credibility and respectability by his presence, has in turn benefited from easy access to the population. However, being a 'national young urban educated male' working for a foreign researcher (as considered by both the informants and my assistant himself), he has kept his position in the hierarchy, namely an average position where 'national young' is counterbalanced by 'educated' and 'urban'.

While they have seemingly improved my access to informants, researcher-researched relative positionalities have also influenced the nature of the information that was collected. On the one hand, a status of 'outsider' has allowed me to ask delicate questions without incurring excessive suspicion or offence on the part of my interlocutors. To some extent, it has thus allowed me to gain access to sensitive information among the local elites, in what a national researcher would have hardly succeeded (Messerchmidt 1991; Sabot 1999). On the other hand, as my abovementioned integration in the local social hierarchy suggests, I have also benefited from a status of 'pseudo-insider', reducing the social distance with my interlocutors and, perhaps, limiting the cultural 'interferences' during the interviews. In fact, rather than being either 'outsider' or 'insider', researchers often operate in a "continuum of 'outsiderness'" (Herod 1999: 326) which gives them access to different information according to the position they assume, voluntarily to some extent (Mullings 1999).

If being partly integrated in the local social structure and learning the local language surely overcame some cross-cultural issues of understanding (Smith 1996) and social distance (Watson 2004), the information collected has inevitably been shaped by the informants' perceptions of my position, affiliations and ambitions and by what they

expected from me and my affiliations (Mosse 1994). For instance, being integrated in the hierarchy means that power relations have pervaded the content of the information collected. During the fieldwork period, most of the interviews by questionnaire have been done by my assistant alone. So, following the hierarchical structure, information collected in this case has been given by an individual to his/her equal or inferior. This polarization of the interview from 'upper' to 'lower' may have led interviewees to conceal certain information, as a way of demonstrating or ensuring their superiority. Conversely, I have led all the semi-structured and unstructured interviews and group discussions. So, given my hierarchical position, information heard from the interviewees and translated by my assistant has been given by an individual to his/her equal or superior and translated by an individual to his/her superior. This polarization from 'lower' to 'upper' may have driven interviewees to tell me what they believed I wanted to hear and to express needs they believed I or my affiliations could address (Howard 1997).

Practically, acknowledging such research positionality has changed the methodological approach in several ways. For instance, during questionnaire surveys, more room has been given to the interviewees for expressing views and concerns that were not necessarily related to the list of questions posed. Practically, this has been translated into a more frequent use of group discussions and semi-structured interview material in this thesis. Moreover, the information collected through questionnaires has been used as indicative of some dynamics (e.g. changing farming practices, livelihood diversification), rather than as a statistical catalogue on livelihood systems. This information has then been complemented through semi-structured interviews and group discussions. In a similar fashion, partly in order to limit the risky practice of using exclusively the information collected and aggregated by a 'third party' (i.e. the MSEC biophysical team), two questionnaire surveys, as well as numerous group discussions and individual interviews, were undertaken to complement and compare with the MSEC data on local environmental change.

## 2.4. Summary

As this chapter has described, this research is the result of complex and changing research conditions, influenced by my own professional/academic course and the individuals and organisations I worked with. The methodological approach has significantly evolved in the course of the research. The collection of data on livelihood and environmental change – initially based on the field work of an international research programme (MSEC) and a questionnaire survey undertaken at the household scale in two study villages – has been complemented by interviews based on more participatory techniques and aimed at gaining insights into the local perceptions of, and explanations for local change. At the same time, information on mainstream environmental discourses, political-economic change, and the ways these wider contingencies are expressed locally has been collected through literature review and interviews with various actors (e.g. state agents, villagers, local economic actors).

Later on, inspired by scientific literature in political ecology and livelihood studies, additional interviews have been conducted in the two study villages with the aim to approach interactions between local, individual actors and their divergent or conflicting strategies and discourses. In turn, these various qualitative datasets – subjected to discourse analysis – have been used to explain local change highlighted by the questionnaire survey on livelihoods. In addition, combined with, and confronted to MSEC's environmental assessment, qualitative data has also been used to place local environmental dynamics in a broader socioeconomic and political context, to highlight inconsistencies between scientific evidence, local perceptions and mainstream environmental discourses and, hence, to question the power relations embedded in different explanations for, and experiences of environmental change. Field surveys and data analyses have thus spanned over a six-year period (2003-2008). If time and labour costs represent certainly major drawbacks for the study, going back and forth between field surveys and data analyses during a long period of time has also allowed for an iterative confrontation of the empirical findings to the 'field reality' and, this way, improved confidence in the final conclusions of the study.

My involvement with the MSEC project has contributed to shape the methodological approach above. For instance, the selection of the study sites and the initial project of building a database on livelihood change were largely motivated by MSEC's need to rapidly produce socio-economic data and characterize an assumed – and eventually demonstrated – agrarian transition undergone by villages hydrologically-linked to the project's experimental catchment. My affiliation with MSEC has also played a role in terms of access to information, introducing some predetermination in the potential interlocutors encountered during the first field visits, facilitating my access to state agents but, perhaps, limiting their willingness to share information on sensitive matters. Other interactions have contributed to shape the knowledge produced by this study. Positioned as a 'pseudo-insider', that is neither completely 'inside' nor 'outside' of the local social hierarchy, I have benefited of relatively easy access to all categories of interlocutors in the study villages and, perhaps, access to sensitive information from part of the local elite. In turn, however, information that has been given to me was shaped by my hierarchical position relative to the each interviewee – i.e. information was given to me by an individual to his/her equal or superior. Similarly, information given to my Laotian assistant – fully integrated in the local social hierarchy – was that given by an individual to his/her equal or inferior. In that sense, the study is largely based on a 'composite knowledge' shaped by power relations between researchers and researched.

Overall, if the early stages of this study provided much valuable empirical material, they were marked by a limited engagement with theory and, hence, important limits in the conceptual and methodological approach to society-environment interactions that was initially developed. The following chapter reflects the effort that was subsequently undertaken to better theorize the research, that is, to develop an appropriate theoretical framing of the research, to engage with recent debates in the field in geography and the social sciences, and, finally, to arrive at a renewed set of research questions and objectives linking more explicitly the empirical approach of this study with broader theoretical issues.

### **Chapter 3. Conceptual framework**

As introduced in Chapter 1, this study attempts to identify and elucidate some of the main patterns of social and environmental change that have characterized the uplands of Laos over the past three decades. For that purpose, the study adopts a comprehensive and locally-grounded research framework aimed at analysing trajectories of change (or transitions) in the interactions between two upland communities and their environment. Somewhat ‘upstream’ from this local society-environment nexus, the research takes a particular interest in the relations between broad scale political and economic conditions and processes (i.e. mainstream environmental discourses, state-making and environmental politics, economic globalisation and market integration) and the evolution of the role and position of the environment in upland livelihoods. In this regard, the political-economic context is considered as both a source of external driving forces for local development – e.g. from global environmental concerns to state regulation and its local implementation – and the cumulative outcome of local change – e.g. from increasing local ‘consumerism’ and engagement in cash-oriented activities to broad scale economic monetarization and market integration. Positioning the wider political economy at the centre of productive interactions between global and local phenomena allows an emphasis on the critical role played by local actors – individuals and social groups – in mediating ‘external’ interventions and shaping the emergence and reproduction of broader scale processes.

Overall, local socio-environmental trajectories are thus considered as positioned at the intersection between three main conceptual axes: one that links nature with society/culture, one that connects global and local change, and one that represents interactions between the state and society. The first section of the chapter reviews recent scientific thinking in relation to these three axes. Through this review, I argue that dealing comprehensively with local socio-environmental change in its political-economic context requires deploying conceptual and methodological approaches capable of working across common ‘society-nature’, ‘global-local’ and ‘state-society’ conceptual divides. In the course of this analysis, the first section of the chapter also defines a number of concepts that will appear recurrently in the next chapters, namely, ‘environmental discourses and narratives’, ‘actor’, ‘social structure’ and ‘human agency’. The second section focuses on two recent theoretical approaches dealing with

society-environment interactions – Political Ecology and the Sustainable Livelihoods Approach – that have provided valuable insights for developing the research problematic defined in the early stages of this study. Through a literature review, their core theoretical arguments are introduced, their main scientific critiques are presented and some ways forward are suggested. The third section of the chapter presents an attempt to develop a ‘political ecology of livelihoods’ approach (Jones 2008). On the basis of their relative strengths and shortcomings, a potentially productive combination of Political Ecology and the Sustainable Livelihoods Approach is proposed which allows important conceptual and methodological gaps to be filled in each approach. The way this combination may be employed for working across the conceptual divides introduced above is considered. In addition, the section presents the three main research themes that will structure the remaining chapters of the thesis. Finally, the last section summarizes the intellectual journey and the resulting conceptual framework for the thesis.

### **3.1. Questioning common divides**

#### *3.1.1. Society and nature*

Conceptualizing the interrelationship between society and nature appears as a timeless issue for scientific and philosophical questioning (Coates 1998; Demeritt 2002). For instance, since the seventeenth century, ‘modern’ thinking has generally considered society and nature as two separate spheres, the former being the subject – concurrently owner, user and guardian of nature – and the latter the object – a homeostatic ‘matrix’ regulated by universal biophysical laws and deprived of social reality or value except for a materialistic economy (Jelinski 2005; Latour 1991). Following recent developments in the social and ecological sciences, this viewpoint has been extensively reconsidered, creating a need for an epistemological repositioning of many academic disciplines. Arguments for such reflection have been brought about by both social and biophysical sciences. First, attention has been drawn to the symmetrical roles played by society in ‘shaping’ nature, materially and discursively, and by nature in ‘shaping’ societies, enabling or constraining social action and organization (e.g. Benton 1991; Castree and Braun 2001; Descola and Palsson 1996; Gerber 1997; Goldman and Schurman 2000). In that sense, the ‘modern’ divide between nature and culture appears as a simplistic, unrealistic view. Rather, society and nature must be viewed as co-created



(Scoones 1999). A second argument came from the ‘new ecology’ paradigm (Zimmerer 1994). Following the development of a general ‘Theory of Chaos’ (e.g. Gleick 1987; Lorenz 1993), ecology has shifted from a conception of balanced ecosystems toward a ‘new ecology’ that acknowledges non-equilibrium, instability and indeterminacy in ecosystem dynamics (e.g. Botkin 1990). Hence, nature must be considered as intrinsically dynamic and not necessarily homeostatic. Overall, as a sphere of partial, yet inherent uncertainty, influenced by increasingly far-reaching human activities and mediated through a multitude of social representations, nature becomes less a passive object than a hybrid subject, comprised of both human and non-human dimensions (Harraway 1991; Latour 1991).

The practical implications of a re-conceptualized relationship between society and nature are numerous. For instance, scientific attention has progressively been reoriented towards an integration of social and environmental histories (e.g. Batterbury and Bebbington 1999; Bryant 1997; McCann 1999) and attempts have been made to construct more comprehensive methodological approaches dealing symmetrically with socio-cultural and ecological elements (e.g. Batterbury *et al.* 1997; Forsyth 1996; Nightingale 2003). Inevitably, these reorientations have increased the complexity of the systems studied (Abel and Stepp 2003). In the social sciences, they have often led to a downscaling of research, with more detailed approaches of smaller organizational structures. In ecological anthropology, for instance, questioning has thus shifted from “ecosystems and populations to resources and actors” (Nyerges 1997: 2). Concurrently, in the light of post-structuralist thinking, the paradigmatic shift has changed the ways socio-environmental interactions are problematized. For instance, nature has come to be approached as a ‘political entity’. Indeed, on the one hand, nature may be considered as shaped by politics, for human impacts on the environment result from individual actions that are, in turn, determined by power relations (Bryant 1998). On the other hand, nature may also be instrumentalized through particular representations and discourses (see Box 3.1) and, thus, may contribute to political struggles (Escobar 1996; Peet and Watts 1996).

**Box 3.1: Environmental discourses and narratives**

Ethnolinguists define environmental discourses “as comprising the linguistic devices articulating arguments about the relationship between humans and the natural environment” (Mühlhäusler and Peace 2006: 428). In the field of political ecology, the conception of environmental discourse is often broadened to include not only ways of speaking and writing about the environment but also the cultural symbols and political claims that can be expressed through particular actions on the environment (Blaikie 1995). Besides a variety of diffusion channels, media and tones employed, environmental discourses are structured by narratives. These narratives are used to represent complex or uncertain phenomena through storylines on cause and effect interactions between human activities and the biophysical environment. As described by Forsyth and Walker (2008), in the case of northern Thailand, examples of such narratives include ‘deforestation causes water shortages’ or ‘upland cultivation engenders soil erosion’. As pointed out by numerous studies, however, environmental narratives may owe as much to the specific worldview and personal aspirations of their creators as they do to actual socio-environmental interactions that involve complex biophysical processes and highly diverse human perceptions (e.g. Armitage 2004; Fairhead and Leach 1995; Forsyth and Walker 2008; Hajer 1995; Thompson and Warburton 1985).

Besides providing a partial description of socio-environmental issues, narratives often position actors relative to each other and convey a message on their respective roles and responsibilities. In northern Thailand for instance, environmental narratives tend to place upland agriculture – and, indirectly, upland-dwellers – as responsible for the water shortage and sedimentation issues experienced by lowland populations (Forsyth and Walker 2008). On this basis, they suggest or advocate specific political interventions and, more generally, contribute to legitimating particular regimes of social and spatial organisation. In that sense, environmental narratives contribute to what Foucault (1981) calls ‘political rationalities’. By delimiting a discursive field in which particular configurations of power appear ‘rational’, environmental narratives can play a strategic role for one’s attempt to govern the conduct of others. Besides, by setting up the basic terms for approaching particular socio-environmental issues, such narratives are often self-reinforcing, for they define what can fit or not in the political and scientific debate and end up in some form of ‘problem closure’ (Dryzek 1997; Forsyth and Walker 2008; Hajer 1995).

Nature also plays a significant role in shaping human discourse and action. As Peet and Watts (1996: 37) argue, the “environment itself is an active constituent of imagination, and the discourses themselves assume regional forms that are, as it were, thematically organized by natural contexts”. In other words, environmental representations are situated as they emanate from particular ‘regional discursive formations’ generated in and by particular contexts (Peet and Watts 1996). Similarly, environmental representations vary from one individual to another, each with its own context, experience and perspectives. In fact, as Zimmerer (1996) describes using the example of

soil erosion in Bolivia, environmental perceptions and representations may sometimes diverge so critically that social conflict becomes inevitable. In the end, situated environmental knowledge shapes human actions in both proactive ways – i.e. particular environmental representations engender particular practices – and reactive ways – i.e. resistance to a particular environmental discourse provokes particular actions. Thus, in order to gain a more comprehensive understanding of the interrelationship between society and nature, one has to deal with power relations, knowledge and diversity. In fact, as the following paragraphs will show, power, knowledge and diversity also appear crucial issues for approaching global-local interactions.

### *3.1.2. Global and local*

Since the early 1990s, theoretical approaches to the production of ‘locality’ or ‘place’ have figured prominently on the geography agenda (e.g. Daniels 1992; Dirlik 2000; Massey 1993, 1994, 1997; Moore 1998). In part, they have arisen to confront a scientific orthodoxy that has largely focused the attention of geographers on a ‘top-down’ questioning of global-local relations. Indeed, if the discipline of geography was historically concerned with ‘place’ (e.g. the ‘regional geography’ puts forward in the first half of the 20<sup>th</sup> century by geographers like Vidal de la Blache and Alfred Hettner), this focus changed with the 1960s ‘quantitative revolution’ and its emphasis on statistics and modelling of spatial processes. Hence, to the extent that the ‘local’ has been considered by proponents of the ‘quantitative revolution’ and their followers, it has largely been in terms of investigating the local impacts of broad-scale processes. Framing the problematics in terms of impacts has thus masked the ways economic globalization and other dynamics occurring on a large scale (e.g. political liberalisation, agrarian transition) can be rooted in the local (Pred and Watts 1992; Rankin 2003). For instance, while economic globalization certainly engenders a multiplicity of local reactions – among individuals, social groups and cultures – that are worth examining (Long 2001; Schuerkens 2003, 2004), one should not essentialize economic processes and reduce them to simple external driving forces for local change. Local actors are not bereft of human agency (see Box 3.2) and, in that sense, local culture, economy and politics play an integral and active part in shaping not only the ways the market infiltrates and expands over new spaces but also the very emergence and reproduction of economic globalization itself (Bebbington 2000; Gibson-Graham 1996; Hefner 1990;

Kelly 1999a; Li 2002b). In fact, as stated by sociological, actor-oriented approaches, “all forms of external intervention necessarily enter the existing life-worlds of the individuals and social groups affected, and in this way are mediated and transformed by these same actors” (Long and Long 1992: 20). Hence, as expressed in recently flourishing work on the politics of scale (e.g. Dicken *et al.* 2001; Escobar 2001; Kelly 1997, 1999b; Marston 2000; Swyngedouw 1997; 2004a), there is a real need to approach the various local forms of mediation through which broad-scale socio-economic dynamics are propelled, sustained or transformed and to explore the power relations structuring the social space between the global and the local.

In line with the discussion in the previous sub-section, contemporary changes in society-nature interactions also call for an increasing interest in the global-local dialectic. Indeed, with the boundless expansion of the capitalist model, the transnationalisation of civil society and the emergence of global environmental concerns, nature is no longer a local matter (Latour *et al.* 1991; Serres 1990). If the more common and visible expressions of environmental change remain local, their causes, consequences and arenas of political negotiation are increasingly entangled in the ‘global’ (Chartier and Rodary 2007). Again, knowledge and diversity emerge as critical issues here. As Adger *et al.* (2001) describe, over the past two decades, international and national environmental policy and action have come to be dominated by discourses on ‘global environmental problems’ such as deforestation, climate change and desertification. Analysing these discourses, the authors identify two main perspectives – a ‘global environmental management’ perspective and a ‘populist’ perspective – which represent causality linkages between environmental issues, local activities and global processes in rather different fashions. Yet the authors further argue that, despite their differences, the two discursive strands both fall short of providing a satisfactory account of the diversity of situations within local contexts. With their study, Adger *et al.* (2001) illustrate the complexity that one has to deal with in approaching contemporary environmental issues. While the significance of the global scale for environmental knowledge and policy is increasing, ‘global environmental problems’ remain very much contingent on localized social and biophysical processes and, hence, on a diversity of local contexts.

**Box 3.2: Actor, social structure and human agency**

The points discussed in this section intersect with broader sociological and anthropological issues related to the tensions and contradictions between social structure and the agency of social actors. Actor-oriented approaches in sociology of development and political ecology (e.g. Bryant and Bailey 1997; Long and Long 1992; Long and van der Ploeg 1994) employ the concept of actor in order to analyse individual or social groups' experience of, and response to, external interventions (e.g. market forces, cultural flows, state policy, environmental change). In that sense, actors must refer to 'knowledgeable' and 'capable' social entities. In Long's words, actors are "active participants who process information and strategise in their dealings with various local actors as well as with outside institutions and personnel" (2001: 13). As Long further describes, building on the work of Hindess (1986), "single individuals are not the only entities that reach decisions, act accordingly and monitor outcomes" (2001: 16). State agencies, political and religious organisations or capitalist enterprises can also be considered as particular social actors since they all have their own, specific ways to formulate and carry out decisions. Although this will not be further developed in the present thesis, it has to be noted that Actor-Network Theory (Latour 1991) calls into question the actual sociological definition of actor by attributing some level of autonomy to collective and hybrid socio-natural actors.

At another level of social organization, sociology puts forward the concept of social structure. Recent theoretical approaches define structure in both relational and institutional terms (e.g. Lopez and Scott 2000). In the first instance, the concept of social structure relates to the patterns of relations established between different actors and the ensuing relative positioning of each actor. In the second instance, social structure refers to the socio-cultural values and norms shared by different actors and the role that these shared institutions play in conditioning actors' behaviour and maintaining enduring social groups. From there, social structure is considered as playing a critical role in setting up the conditions for human action. In fact, this relationship between structure and agency (or, in other words, between society and the individual) is a long-standing issue for social theory (Thompson 1989). According to Long and Long (1992), human agency must be understood as the capacity that social actors have to process social experiences and devise ways of coping with life, even under the most extreme forms of coercion. Access to information, uncertainty and other biophysical, normative or economic constraints restrict human agency within certain limits. Yet, considered through different disciplinary lenses, human agency is very much linked to the involvement of actors in social structures. Indeed, as pointed out by various authors and exemplified in the present thesis (see Chapter 6, Section 6.4), having the capacity to act upon external interventions depends very much on one's ability to build up and sustain a network of actors, all engaged in a common strategy (Allen 2004; Hillier 2000; Latour 1986; Long and Long 1992). In the end, thus, for social theorists like Giddens (1984), Roseberry (1988, 1989) or Sewell (1992), social structures should be considered as both the medium and the outcome of human agency.

In practical terms, the interconnectedness of heterogeneous local contexts with global processes raises particular methodological issues as regards the study of globalization itself. With globalization, individual livelihoods are increasingly embedded in, and affected by, extensive networks of social relations that operate across various scales (De Haan 2000a). In cultural terms for instance, as Hannerz describes, “the world system, rather than creating massive cultural homogeneity on a global scale, is replacing one diversity with another; and the new diversity is based relatively more on interrelations and less on autonomy” (1987: 555). Overall, the importance of local human agency, increasingly extensive social interactions and the dynamic diversity of local cultures make thus of globalization a rather complex object of study. As pointed out by some scholars, scientific efforts to deal with such complexity can benefit from approaches identifying actors in networks and the structural outcomes of their relations (e.g. Dicken *et al.* 2001) and from research frameworks where local or multi-local, bottom-up perspectives are used to explore and theorize broader scale dynamics (e.g. Bebbington 2003; Nygren 2004).

### 3.1.3. *State and society*

Notions of scale interconnectedness and networks operating across scales also appear essential for approaching state-society relations and problematics of government. Positioning the state relative to society represents a long-standing issue for social theory. Indeed, according to Mitchell (1991), while an unequivocal definition of the state would require distinguishing it from society, the boundary between the two concepts appears elusive, porous and dynamic. As Kerkvliet puts it, “state and society are important concepts in everyday life as well as in political analysis. But the concepts are elusive and hard to define. One of the most perplexing problems is distinguishing between the two. Where does the state ‘end’ and society ‘begin’, and vice versa? State and society are different, yet they are not entirely separate” (2001: 239)

Reviewing post-war political science thinking in relation to the state-society issue, Mitchell (1991) calls into question two popular approaches. In the first, he suggests, the difficulty of distinguishing clearly the state from society has led some scholars to attempt to replace the concept of the ‘state’ – deemed too evasive and too limited to serve a general political science – by the all-encompassing concept of ‘political system’

(e.g. Almond and Powell 1966; Easton 1953). For two main reasons, however, this conceptualization proves rather unproductive. Not only does it fail to provide a clearer account on the boundary between ‘political system’ and society, but it also contributes to discounting the existence of the state as a “sociocultural phenomenon” anchored in the everyday life of individuals (Nettl 1968 in Mitchell 1991: 77). Second and in contrast to this approach, other scholars have attempted to establish the concept of the state as a system of decision and policy making integrated with society (e.g. Evans *et al.* 1985). Yet, by attributing too much autonomy to the state phenomenon and focusing on one narrow, functional dimension, this approach tends to disembodify state politics from social life and does not account for the influence of wider social forces on state organisation and activity. In conclusion, Mitchell argues that the state should be considered as a structural effect of “processes of spatial organization, temporal arrangement, functional specification, and supervision and surveillance, which create the appearance of a world fundamentally divided into state and society”, and that approaches to the state-society issue should address the “producing and reproducing of this line of difference” (1991: 95).

As a theoretical approach to the project of government, ‘Foucauldian’ literature also points to the central importance of the producing and reproducing of boundaries between the state and society. For scholars like Allen (2004), Herbert-Cheshire (2003) and Murdoch (2000), the deployment and the exercise of state power rely on dynamic networks linking state and non-state entities<sup>13</sup>. As Rose and Miller put it, “to the extent that the modern state ‘rules’, it does so on the basis of an elaborate network of relations formed amongst the complex of institutions, organizations and apparatuses that make it up, and between state and non-state institutions” (1992: 176). In fact, in Foucault’s view, the state itself can be seen as a dynamic ensemble of political relations that is reconfigured as practices and project of government change (Jessop 1990, 2007). From there, the state does not only deploy networks linking state agencies to simple citizens in order to govern ‘at a distance’ (Murdoch 2000) but, as described by Lemke (2007), it also establishes and constantly remoulds a strategic ‘frontier regime’ between state and

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<sup>13</sup> In place of ‘network’, Foucault uses the concept of *dispositif* in order to describe nets of relationships that articulate, in strategic ways, actors, discourses, institutions, regulations, procedures and other social constructs across the state-society divide. For Foucault, power does not emanate from particular sovereign actors. Rather, power is a by-product of *dispositif* and, in turn, it is “employed and exercised through [such] a net-like organization” (Foucault 1980 in Eriksson 2005: 600).

non-state actors which, in turn, provides resources of power.

In a more empirical fashion, other approaches to state-society relations have focused on the ways state intervention is mediated by social actors and, ultimately, the ways mediation processes reflect tensions between state perspectives and particular ‘social realities’ (e.g. Kerkvliet 1995, 2001; Scott 1990, 1998). For Kerkvliet (2001), the state is embedded in society as a particular, if not the ultimate, socio-political organisation that attempts to set rules for social life and regulate human behaviour. Hence, considering the inextricable intertwining of state and society, he argues that, rather than attempting to delimit what is part of the state organisation and what is not, a more productive approach to state-society relations is to think about the domains of contention between, on the one hand, the state agenda and visions of society and, on the other hand, the actual organisation, practices and projects of the individuals within society.

This way of examining state-society interactions culminates in the work of Tania Li (1999b, 2005). Drawing on Foucault’s work and questioning the optic of Scott (1998) which, she argues, attributes too much coherence, unity and autonomy to the state, she suggests a more nuanced image of a differentiated state, constituted by a multitude of actors (with their own subjectivities, cultures, personal concerns, and so on). Thus, rather than a centre of power and unified source of intention, the state appears more as a strategic and dynamic social network linking particular actors, claims and practices. On this basis, she further argues that the actual outcomes of state planning and intervention are very much contingent upon everyday forms of social interaction – i.e. compromise and collusion – between actors located both ‘within’ and ‘outside’ state networks (see also Mood 2005; Robbins 2000). In general, thus, approaches to state-society relations – be that through an attention on the state’s structure (e.g. Mitchell 1991), on the project of government (e.g. Foucault 1991) or on the actual accomplishment of the latter project (e.g. Li 1999b) – suggest that, if there is indeed some sort of boundary between the state and society, this boundary is politically constructed, constantly remoulded by power struggles and permeable to all sorts of social forces.



### 3.2. Two theoretical approaches

The main conclusion of the previous section is that dealing with ‘hybrid’ research objects such as concurrent social and environmental change requires us to develop integrative approaches capable of working across ‘society-nature’, ‘global-local’ and ‘state-society’ conceptual divides. In this regard, two theoretical frameworks that have become increasingly popular over the past two decades – Political Ecology (PE) and the Sustainable Livelihoods Approach (SLA) – offer strong potential for the analysis of the complex and multi-scalar interplays between social actors and the environment and the way these interactions engender particular development trajectories and outcomes. PE allows a thorough examination of the ways through which social interactions (i.e. power relations, political struggles, discursive strategies) contribute to shape the ecological milieu while the SLA provides a comprehensive framework for the identification and comparison of local livelihood and land use change.

Recently, scholars like Jones (2008) and Simon (2008) have called for a better integration of PE and the SLA. According to these authors, while the two approaches have evolved in different academic traditions (i.e. the first in critical geography and the second in development studies), their respective fields of application intersect in many instances and suggest that a potentially fruitful combination is possible. However, some important conceptual differences remain. For instance, while both approaches emphasize that unequal access to resources is an essential issue for understanding socio-environmental change (e.g. Gray and Moseley 2005; Scoones 1998), their respective theorizations of the human-environment nexus differ. The following two sub-sections review the core theoretical arguments put forward by PE and the SLA and present the main scientific critiques that have been directed towards the two approaches.

#### 3.2.1. *Political ecology*

Numerous empirical studies have demonstrated indisputable links between human activities and environmental change. However, analysis of human-induced environmental change has often remained limited to proximate connections between natural and anthropogenic systems. With the emergence and development of PE over the past two decades, the scientific examination of society-nature interactions has become far more comprehensive. By making space for new and more socially-centred

narratives – including significantly notions of power, knowledge, discourse and actors – PE has significantly contributed to a deeper understanding of the subject. Arguing that ecological issues are social issues as well, PE seeks to examine socio-environmental dynamics in their political and economic context. For instance, in Blaikie’s seminal work on soil erosion, actors and erosion processes are contextualized in nested political-economic structures – “the household [...], the village or local community, the local bureaucracy, the bureaucracy, government and nature of the state, and finally international relations” (1985: 88) – determining the various incentives, constraints and opportunities for land use decision-making. Using such a perspective allows for analysing the means by which control and use of resources are defined, negotiated and contested within various political arenas (Peet and Watts 1996). Hence, it facilitates research on the social causes of environmental change.

A key contribution of PE to the study of society-nature interactions is the recognition that the environment is fundamentally politicized (Bryant and Bailey 1997; Peet and Watts 1996). Power emerges as a central theme in this conceptualization. As “a *relation of each to all others*, in their common relation to environment, which is both the product and the precondition of any activity” (Lipietz 1996: 222, original emphasis), PE acknowledges that (unequal) power relationships within society shape the environment, both materially and discursively, and that, concurrently, the environment contributes to shape power relationships and society. Thus, through its uses and representations, the environment appears as both result and means of political struggles. Building on these ideas, the materialization of unequal power relationships and political struggles in socio-environmental dynamics has been highlighted on many occasions by historical perspectives on the socio-environmental impacts of state policy and regulation (e.g. Peluso 1992; Watts 1983), gendered conflicts (e.g. Carney 1993; Rocheleau *et al.* 1996), social movements (e.g. Bebbington 2001; Escobar 1998), and cultural change (e.g. Steinberg 1998).

Along with power, another key theme in PE is the notion of multiple, situated, environmental knowledges (Blaikie 1995; Nygren 1999). For instance, Peet and Watts describe “environmental imaginaries” and “regional discursive formations” that “originate in, and display the effects of, certain physical, political-economic, and institutional settings” (1996: 16). Indeed, the environment is perceived and represented

in many different, sometimes contradictory and conflicting ways by social actors (e.g. farmers, scientists, politicians) who observe and experience it through the lenses of their culture, past experiences, projects and technological devices. In that sense, environmental knowledge is situated: it is generated in, and shaped by particular histories, environmental and socio-economic contexts and social structures. Besides these differences in individual human perception, environmental knowledge may also be considered as situated by politics. For instance, as illustrated by studies on the political ecology of deforestation and desertification in Africa, the existence of competing environmental discourses often reflects and expresses historical conflicts between social actors and their respective attempts to gain legitimacy (e.g. Bassett and Zuéli 2000; Fairhead and Leach 1995). In effect, through narratives expressing subjective visions of social and environmental issues (see Box 3.1), particular forms of environmental knowledge may be diffused and, in turn, may influence human activities. From that point of view, the environment represents a ‘political entity’ that social actors can mobilize through discourse in order to serve their interests – sometimes even unconsciously (Swyngedouw 2004b). Building on these ideas, a number of studies have revealed the instrumentalization of environmental knowledge and discourse, be that in the service of state projects (e.g. Blaikie and Muldavin 2004; Bryant 1996) or local/indigenous social movements (e.g. Isager and Ivarsson 2002; Zimmerer 1993).

Unsurprisingly, the concept of the ‘actor’ has become rather popular in PE (Bryant and Bailey 1997). Originally used by sociologists and anthropologists around the late 1960s–early 1970s and recently renewed by development sociology as a counterpoint to structural analysis, the actor-oriented approach seeks to explore the interactions between actors and social structures, their divergent/conflicting aims and their strategies for negotiating changes, conflicts and external interventions (see Box 3.2). Fundamentally focused on the (micro-) politics of social action, this approach represents a valuable instrument for investigating the ways in which actors’ power relations, discourses, strategies and interactions change the meaning and the role of the environment. Building on this approach, PE analyses the interplay between various actors combining different criteria such as political status (e.g. grassroots actors, state agents, NGO activists, development agencies), project (e.g. economic profit, nation building, environmental conservation), social position (e.g. class, gender, ethnicity) and scope of action (e.g. local, national, trans-national). Through these various perspectives, PE

attempts “to identify and study multiple spheres and social axes of power and difference” (Paulson *et al.* 2003: 210) that condition particular socio-environmental dynamics.

In summary, PE gives us an insight into the ways human and environmental forms of organization/interaction engender concomitant social and ecological dynamics that bring about new forms of organization/interaction. Through this process, the approach draws attention to the connections between socio-spatial (re)configurations of power, changing environmental discourses and patterns of environmental change. However, in line with recent interdisciplinary attempts to redefine the interrelationships between nature and society/culture (see Section 3.1.1), current geographic debates on globalization and locality (see Section 3.1.2) and post-structuralist theories on power and state-society relations (see Section 3.1.3), new concepts and methods could be integrated with PE for the purpose of providing a more comprehensive understanding of socio-environmental dynamics.

On the one hand, the place of the local in PE studies must be questioned. Indeed, some authors call for a more ‘locally-grounded’ political ecology (e.g. Batterbury 2001; Warren *et al.* 2001), arguing that, despite recent political trends to ‘localize’ development and emphasize the social value of local governance and local knowledge, our understanding of the diversity and complexity of the socio-environmental processes that lead to landscape production is often deficient. If, as stated by one of the core arguments of PE, environmental change can only be understood in its socio-political and economic context (Blaikie and Brookfield 1987), this context is so diverse from place to place and from time to time that only a real ‘local political ecology’ can provide insights into the fundamental issues. However, the same authors acknowledge that such an approach logically limits the possibilities of generalization and that the wider picture of concurrent social and environmental dynamics can not appear unless scientists engage in studying more and various social and ecological conditions in many more locations. As Bebbington suggests, a starting point to address this issue is “by ‘theorising up’ from place-based studies” and comparing “different causal processes and factors across place-based studies” (2003: 303).

On the other hand, on the basis of recent approaches in geographical political economy (e.g. Brenner 2001; Marston 2000; Swyngedouw 1997), some scholars suggest that PE should pay more explicit and careful attention to the politics of scale (Brown and Purcell 2005). They argue that, despite a long-standing engagement with scale as a methodological issue, PE studies have too often neglected the social construction of scale and ended up in a ‘local trap’ “in which political ecologists assume that organization, policies, and action at the local scale are inherently more likely to have desired social and ecological effects than activities organized at other scales” (Brown and Purcell 2005: 607). For these authors, PE studies have too often a questionable tendency to conclude that political devolution is the only logical way towards environmental sustainability and social justice. As they argue, rather than attributing uncritically some intrinsic qualities to local land managers, PE should seek to approach more comprehensively the agendas and strategies of those actors who are empowered by political devolution or centralisation and, on this basis, engage more explicitly with the politics of scale. In other words, if, as discussed above, the local scale represents a privileged methodological unit for gaining an in-depth insight into the proximate interrelations between social and ecological systems, PE should maintain a critical perspective on the potential outcomes of governance at any given scale. For that purpose, attempts to develop a more ‘locally-grounded’ PE would probably benefit from a simultaneous engagement with the political struggles and conflicts that rearrange or produce scales of governance, not least because, ultimately, these politics of scale contribute to reshape local socio-environmental interactions.

At the same time, the increasing interconnectedness of the local with extended social structures and wide-ranging processes raises a number of questions for the exploration of causality linkages in PE. In the past, local patterns of society-nature interaction have generally been approached and explained ‘vertically’, but in an era of globalization, “actors’ livelihoods are becoming increasingly multi-local, so that locations of livelihood are increasingly no longer connected to each other vertically by lines that converge at upper hierarchical levels” (De Haan 2000a: 366). Rather, various factors (e.g. increasing migration flows, increasing direct access to international markets, transnationalisation of social movements) converge to make actors’ lives more horizontally

interconnected. This relative increase in the horizontality of social relations has important implications for PE research<sup>14</sup>. In particular, it calls for an integration of new conceptualizations “linking the organizational attributes of various actors to their capacity to act in political-ecologic conflicts” (Bryant 1998: 90). In this regard, a rethinking of the ‘classical’ conception of power relations in PE could help. For instance, from a vertical viewpoint – e.g. Blaikie and Brookfield’s ‘chains of explanation’ (1987) – power relations and their polarizations could be re-conceptualized as organized along three-dimensional networks (Rocheleau and Roth 2007).

Integrating a more ‘Foucauldian’ conception of power and approach to the workings of government (see Section 3.1.3) may also provide interesting avenues for such a re-conceptualisation. In particular, it may allow PE to go beyond simple oppositions (e.g. between state and indigenous movements, agri-business firms and smallholders) and develop a more elaborate approach to the complex and dynamic social networks linking actors across state-society and global-local conceptual divides. To a significant extent, this point also addresses some critiques of the early approaches in PE. According to a number of scholars, PE has long had a tendency to emphasize the role of political-economic constraints and social structures over human agency and creativity (Jones 2008; Peet and Watts 1993; Warren *et al.* 2001). Yet, with globalization and the potential engagement of local actors in increasingly extensive social networks, human agency and local actors’ capacity to mediate external constraints and transform the social structures around them should not be underestimated (see Box 3.2).

Finally, recent literature also points out the need for a more ‘ecologically conscientious’ political ecology (e.g. Peterson 2000; Vayda and Walters 1999). Indeed, by tradition firmly centred on biophysical issues, PE has gradually shifted toward more – although never exclusively – socially-centred concerns (Walker 2005), raising important questions for the legitimacy and future of the field. This concern intersects with recent epistemological debates brought about by ‘Actor-Network Theory’ (Latour 1991) and the ‘Critical Realist’ paradigm (e.g. Forsyth 2001; Yeung 1997) in the social sciences. For instance, some scholars argue that PE should seek to develop new theoretical and

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<sup>14</sup> It has to be noted that, indirectly, horizontality contributes to minimize the abovementioned ‘local political ecology’ generalization dilemma as, more and more often, the local “incorporates the general as well as networks of connections that bind together different scales” (Hanson 1999: 138).

practical ways for integrating biophysical processes and dynamics with human perceptions of environmental change in a ‘hybrid research’ agenda (Batterbury *et al.* 1997; Forsyth 1996, 1998). In an effort to avoid environmental orthodoxies and to democratize the identification of environmental issues, hybrid research calls for a recognition of the agency of nature, the externality of environmental processes to human experience and the diversity of human perceptions of environmental issues. Thus, it recommends combining qualitative and quantitative data collection methods and multiple biophysical and social information sources for integrating environmental change and its perception by various social actors (see Chapter 2, Section 2.2.1).

### 3.2.2. *Sustainable Livelihoods Approach*

As another important approach dealing with socio-environmental interactions, the Sustainable Livelihoods Approach (SLA)<sup>15</sup> emerged during the 1990s in response to the increased recognition of the complexity of the poverty issue and the diversity of realities it embodies (Farrington *et al.* 1999; Warner 2000). Fundamentally ‘people-centred’ and largely inspired by the ‘agro-ecosystem analysis’ approach developed and tested by Conway (1985, 1987) in Southeast Asia, the approach combines theoretical and practical objectives, namely capturing the multi-dimensionality of rural peoples’ economic activities for designing more integrative development policies and interventions (Allison and Ellis 2001; Rakodi 1999). In their founding text, Chambers and Conway define a livelihood as “compris[ing] the capabilities, assets (stores, resources, claims and access) and activities required for a means of living” (1991: 6).

While there are a number of theoretical frameworks defining livelihood components and their interactions (e.g. DFID 2000; Ellis 2000; Scoones 1998), a shared position is that the solution to poverty resides in individual access and entitlement to a range of assets, both material and social resources, necessary to sustain or enhance a livelihood. Thus, inspired by Sen’s ‘entitlement’ approach (1981), these frameworks usually identify five categories of assets required for livelihoods defined as natural capital (e.g. natural

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<sup>15</sup> The following paragraphs refer interchangeably to actual ‘Sustainable Livelihoods’ literature – such as work undertaken by the Institute for Development Studies (IDS) and the Department for International Development (DFID) – and ‘Livelihood Approach’ literature – such as work by Ellis (1998, 2000). Indeed, these two different designations are more related to differing audiences than to fundamental theoretical divergences (i.e. the Sustainable Livelihoods Approach is originally directed at development practitioners while the Livelihood Approach represents its academic counterpart).

resource stocks, environmental flows and services), human capital (e.g. skills, knowledge), physical capital (e.g. exchange infrastructures, producer goods), financial capital (e.g. credit, financial flows) and social capital (e.g. interpersonal networks, trust relationships).

In order to build sustainable livelihoods, individuals must have access to a sufficiently wide range (and functional combinations) of assets. Asset portfolios must allow various livelihood options, both for coping with stresses and shocks (e.g. market changes, climatic events, land pressure) that might be experienced, and for improving the present means of living without undermining the natural resource base nor threatening the livelihoods of others, present or future generations (Chambers and Conway 1991; Scoones 1998). Following this definition, vulnerability appears as a central issue (Blaikie 1994). Access to assets determines the level of vulnerability of individuals and, as might be expected, the narrower asset portfolios populations have access to, the more they are vulnerable to potential shocks and stresses, and by extension, at risk of increased impoverishment. Through this concept, SLA extends the range of ecological concepts such as ‘sensitivity’ and ‘resilience’ to human systems (e.g. Conway 1987) and integrates ‘new ecology’ considerations, acknowledging that the environment can engender sudden and unpredictable events and dynamics that threaten livelihoods and restrain individual opportunities.

The approach is intended to be holistic and to encompass multiple actors and socio-economic scales, from the individual or the household to the international arena. Thus, the analysis starts at the micro level and builds upwards to the macro level in an attempt to contextualize local livelihoods within a broader scale institutional context. This context is often referred to as the ‘transforming structures’ (e.g. government bodies, civil society and private sector) and ‘processes’ (e.g. regulations, markets, societal norms) which determine access to assets, give them meaning and value, and by extension, drive individual choice for livelihood strategies (DFID 2000). Hence, SLA incorporates notions of socio-environmental variability. In other words, individual access to and control over assets vary in space and fluctuate over time due to both natural and social contingencies. And so does their vulnerability. Thus, the approach seeks to analyse the uneven distribution of capabilities, access to assets and livelihood options among individuals (Ellis 2000).



Through vulnerability and variability, livelihood research places an important emphasis on temporal change. Importantly, it seeks to identify processes linking institutional driving forces with livelihood change and associated local development trajectories. Such a dynamic and longitudinal perspective proves highly valuable for distinguishing structural causes from conjunctural causes of livelihood change and poverty (Gray and Moseley 2005). Indeed, while, at a particular moment in time, individuals, households or communities can show similar livelihood patterns and similar levels of poverty, the causes might be different. Their condition can be either a long term one due to unfavourable social circumstances (structural) or a short term one caused by external shocks (conjunctural). Only a “retrospective approach” can allow a comprehensive understanding of the circumstances and reasons for particular livelihood strategies and associated levels of poverty (Murray 2002: 490).

In summary, SLA gives us an insight into the various strategies employed by populations for managing different types of resources in order to reach particular objectives of well-being (e.g. food security, sustainability, accumulation). It seeks to identify the institutional and environmental factors determining the uneven distribution of assets and livelihood options between individuals. Such a multi-dimensional, non-sectoral approach may greatly benefit studies of rural diversification and deagrarianisation by approaching the connections between institutional arrangements and local development trajectories in a more comprehensive way (Ellis and Biggs 2001). However, as further discussed below, SLA proposes a rather limited theoretical and methodological basis for addressing a number of issues raised earlier in the discussion of the ‘society-nature’, ‘global-local’ and ‘state-society’ conceptual divides (see Section 3.1).

Importantly, SLA critically underplays the role of power relations within and between various social units. The institutional analysis suggested by the approach remains too focused on formal organizations and institutions (e.g. state agencies, NGOs) to the detriment of other, possibly more significant, social units, such as familial structures, communities or interpersonal networks, which engage individuals in informal and often concealed systems of power (Baumann and Sinha 2001; Farrington *et al.* 1999). Hence, the approach “assumes a rational choice model being operated as people choose livelihood strategies” (Toner 2003: 773) between the different options left by an

essentialized political and economic context. By adopting such an overly simplistic and mechanistic model which presupposes direct causal links between policy, economy and social action, the approach tends to discount human agency (see Box 3.2) and neglect the feedback processes – e.g. the political struggles – through which individuals and populations reshape institutions and social structures (Cleverly 2001; De Haan 2000b). With such limited accounts of power and human agency, SLA clearly lacks the conceptual tools for approaching the complex reality of socio-environmental governance and, in particular, dealing with dynamic and politicized networks of social actors that operate across state-society and global-local divides (see Section 3.1) and contribute to produce landscapes.

Another significant shortcoming of the approach relates to its conceptualisation of the environment. As described above, SLA merely integrates the environment in terms of biophysical stocks and flows. From there, institutional factors are considered as the main determinants of access to, control and use of natural resources, while culture and its role in situating environmental knowledge (see Section 3.2.1) appears to be either absent from the approach or merely integrated as one of the institutional factors (Cahn 2002). For instance, in an example given by DFID, cultural factors are integrated as one of the transforming processes that affect access to land through “household power relations and conventions on access to land” (2000: guidance sheet 2.4). While it acknowledges the role of power relations in shaping livelihood options (although, in this example, only at the household level), this conceptualization misses crucial notions of ‘perception’ and ‘representation’ of the environment which are at the core of socio-environmental interactions. Yet, people’s choice for livelihood strategies depends as much on the ‘means’ – i.e. the access to resources – as on the ‘meaning’ given to this access and to the ensuing livelihood activities (Bebbington 1999; Cooke 2004). In general, the approach appears thus to underplay significantly the social construction of nature, a bias which appears particularly critical considering that environmental sustainability represents a core issue for a number of livelihood frameworks. In conceptual terms, SLA tends thus to replicate uncritically the ‘modern’ divide between nature and society/culture (see Section 3.1.1).

Finally, in more practical terms, processes of globalization or multi-localization question the livelihood research methodology (De Haan 2000b). While populations rely

increasingly on extra-local assets (e.g. migration remittances, import and export channels), livelihoods are becoming increasingly connected to, and conditioned by, other places and contexts. Therefore, research has to shift from a traditionally local and micro-level focus to a multi-local and multi-level one (De Haan and Zoomers 2003). For that purpose, as noted above in the case of PE (see Section 3.2.1), SLA could greatly benefit from an increased use of comparative, multi-local perspectives aimed at exploring and theorizing broader scale dynamics (e.g. Bebbington 2003; Dercon 2008).

### **3.3. Integrating and questioning the two approaches**

Overall, the literature review above highlights important variations between PE and SLA in their respective approaches to the core objects of this research. However, rather than being simple ‘exclusionary rules’, these variations can potentially be used to build up a more comprehensive approach to socio-environmental change. In line with Jones (2008) and Simon’s (2008) abovementioned call for a better integration of the two approaches, the first part of this section presents an attempt to articulate PE and SLA in such a way that important conceptual and methodological gaps can be filled in each approach. The implications of the latter proposal for an approach to ‘society-nature’, ‘global-local’ and ‘state-society’ relations are also discussed. Then, the second part of the section identifies the specific research themes and associated meso-level research questions that will structure the remaining chapters of the thesis and, not least, allow the empirical analysis to feed back into theoretical discussions raised by scientific critiques of PE and SLA.

#### *3.3.1. Conceptual variations and integration*

This study is primarily interested in identifying multiple linkages between local patterns of livelihood and environmental change in two upland settings and wider political-economic driving forces (e.g. environmental policy, state project, market incentives). The two theoretical approaches discussed above can offer a potentially fruitful combination for dealing with this research problematic. As Simon (2008) suggests, even if PE and SLA differ by their origins, applications and conceptualisations, their integration should not necessarily be seen as methodologically contradictory. In line with this suggestion, the present thesis argues that a thoughtful articulation of the two approaches can effectively increase the comprehensiveness and depth of analysis of

socio-environmental change. First, as suggested by the literature reviewed in the previous section, PE can certainly provide the kind of subtle and detailed political-economic analyses that are crucially missing to livelihood approaches. Where SLA suggests an overly rigid structural model that overlooks the political arena, PE introduces a more critical, circumspect and nuanced view of power, policy and institutions. Besides, its emphasis on the concept of actor confers on PE the potential for integrating valuable perspectives on networking strategies (see Box 3.2) in the analysis of socio-environmental change. In particular, through an actor-oriented perspective, PE can effectively work across the abovementioned state-society divide (see Section 3.1.3) and, in line with the effort of scholars such as Ferguson (1994), Li (1999b, 2005) and Mood (2005), provide insights into the everyday politics of state building, governance and development intervention.

Second, PE can also provide comprehensive and critical perspectives on environmental issues. Where SLA integrates the environmental dimension in a rather simplistic way (i.e. in terms of environmental hazard and individual access to natural stocks and services), PE puts forward a more realistic conception of the environment. Indeed, the influence of poststructuralist thinking in the discipline has led to an increasing number of studies conceptualizing the environment through three concurrent dimensions, namely, the biophysical milieu, the way it is perceived by social actors and its role as a mobilisable political entity through discourse. In that sense, a particular environmental issue may owe as much to the discourses that define it than to actual biophysical dynamics. This symmetrical approach to the biophysical and sociocultural dimensions of environmental issues means that PE can represent an appropriate framework for moving beyond the ‘society-nature’ divide (see Section 3.1.1) and, in particular, that it can account for the complex interweavings of ecological, political and cultural factors that condition the existence of particular environmental issues (e.g. Nightingale 2003).

As further discussed by Simon (2008), however, if such an elaborate approach to the environment has certainly contributed to the success of PE in challenging mainstream or ‘orthodox’ environmental representations, it has “often resulted in a relatively superficial engagement with, or understanding of, the environmental/ecological dynamics of local people’s lives and livelihoods, assimilated principally into the discourse in terms of environmental rights, aspirations and struggles” (Simon 2008:

705). In turn, SLA can respond to this limitation and provide valuable instruments for enhancing the political ecology approach to the complexities of livelihood construction. For instance, as Jones (2008) argues, broad scale livelihood trajectories like rural diversification (e.g. Ellis 1998, 2000) and de-agrarianisation (e.g. Bryceson 1996; Bryceson and Jamal 1997) can have significant implications for environmental change and policy and, as such, they would require a more comprehensive attention from political ecologists. In this regard, the SLA “can lend political ecology a finer texture and an enhanced socio-cultural dimension, thereby helping to integrate different scales of analysis more efficiently” (Jones 2008: 16). Indeed, where PE generally engages with environmental practices, discourses and politics, SLA considers all the activities (e.g. farm and non-farm, production and subsistence, local and extra-local) and resources (i.e. material and socio-economic) that individuals combine to build up their livelihoods. More practically, through its detailed analytical frameworks, the SLA allows simple historical and comparative analysis of livelihood change and socio-economic trade-offs.

However, as discussed above (Section 3.2.2), SLA suggests a rather functionalist, if not ‘economistic’, approach to local livelihood decisions. Roughly described, this approach considers that institutional/organisational factors – such as state regulation, market forces, societal norms or engagement in particular social groups – determine the nature and the amount of resources accessible to individuals. In turn, according to their own needs and aspirations, individuals operate choices between the various options left open to them. Yet, while the approach certainly acknowledges that social institutions and organisations can be transformed by individual actions (e.g. Scoones 1998), in practice, the focus of a majority of SLA-related studies is often limited to the analysis of livelihood change and the identification of its structural determinants. In this regard, PE appears as a more realistic and flexible framework. With a central concern for the political struggles of actors in their (often broadly-defined) political-economic environment, PE gives more room for a consideration of human agency. The popularity of actor-oriented approaches in political ecology studies reflects PE’s acknowledgement of the capacity that individuals and social groups have to mediate external interventions and transform social structures. In that sense, PE can represent a valuable guide for ‘injecting’ politics and human agency into the livelihood debate. Hence, it can contribute to build up a comprehensive approach to global-local relations accounting not only for the local impacts of global forces but also for the various local processes –

i.e. local actors' socio-economic strategies, political struggles and cultural mediation – through which broader scale dynamics are propelled, sustained or transformed (see Section 3.1.2).

In the end, SLA appears as a pertinent framework for the identification of local trajectories of change in people's material interactions with the environment (e.g. land use patterns, resource management, etc.). However, by discounting actors' power relations and the politico-discursive dimensions of environmental change, it presents significant limitations in its approach to the sociocultural properties of human-environment interactions. Furthermore, by underplaying human agency, SLA overlooks the ways socio-environmental change can be shaped by everyday politics and local actors' mediation of broad scale dynamics. In contrast, the conceptual framework proposed by PE appears much more appropriate to confronting these issues. Hence, approaching the research problematic in its broadest dimensions (i.e. material-sociocultural and global-local) calls for positioning PE 'upstream' of SLA, in what Jones (2008) explicitly terms a 'political ecology of livelihoods'. Theoretically and methodologically, the research framework proposed here is thus very much in line with other efforts to draw on diverse research traditions, work across restrictive conceptual divides and document the existence of crucial and multi-level interactions between ecology, livelihoods and politics (e.g. Batterbury 2001; Bebbington and Batterbury 2001; Rocheleau *et al.* 2001).

### 3.3.2. *Emerging research themes*

The research presented in the next three chapters of the thesis is undertaken as a two-way process, going back and forth between empirical findings and theoretical discussion. Thus, the empirical analysis provides the basis for a contribution to recent theoretical debates in geography and the social sciences (e.g. as identified in Section 3.1 and 3.2), while, concurrently, the abovementioned proposal – i.e. integrating elements of SLA in a political ecology approach to livelihood change – is confronted with the 'field reality'. In order to clarify the intended scientific contribution of the thesis, three research themes can be identified:

- Theme 1 – Land degradation and the politics of the ‘environment’

This research theme relates directly to recent scientific debates on the social construction of nature brought about by poststructuralist thinking and the emergence of new paradigms in the social sciences – such as Actor-Network Theory (e.g. Latour 1991) and the Critical Realist perspective (e.g. Yeung 1997). With a particular interest in these debates, political ecology has seen the emergence of concepts and methods attempting to shed a novel light on the relations between society and the environment (e.g. Escobar 1996, 1999; Forsyth 2001; Zimmerer 1996, 2000). Developed by scholars like Forsyth (1996, 1998) and Batterbury *et al.* (1997) as a conceptual/methodological framework for questioning environmental issues, ‘hybrid research’ represents probably one of the most integrative and operational of these new approaches (see Chapter 2, Section 2.2.1). Starting from this premise, the study applies a ‘hybrid research’ approach to the land degradation issue in the uplands of Laos. Integrating symmetrically biophysical and sociocultural perspectives on the environment, it focuses on the following two questions: **To what extent does land degradation represent a socially-constructed issue in Laos? How does land degradation relate to particular socio-spatial configurations of power?**

Hence, in more practical terms, the empirical analysis involves unpacking Laos’ mainstream discourse on land degradation, that is, identifying its contributors as well as their main narratives, highlighting the roles and responsibilities attributed to various actors and processes in Laos’ land degradation issue(s) and, finally, suggesting potential political rationales for the main actors engaged in the creation, transformation and diffusion of the discourse. At the same time, the analysis also includes a critical review of the information on which the official discourse is based and, through localized biophysical measurements and surveys of human perceptions and practices, a questioning of its main narratives. Overall, this first research theme reflects key objectives of the thesis which are to evaluate the respective contributions of actual biophysical processes, actors’ power relations and resource politics to the production of mainstream environmental knowledge in Laos and, hence, to move beyond the classical conception of society and nature as strictly separate spheres (see Section 3.1.1). In turn, the empirical analysis is also intended to provide a critical basis for a discussion of conventional approaches to environmental issues.

- Theme 2 – Political economy and livelihood change

Through this particular theme the role played by broad scale institutional and economic factors (e.g. state policy and regulation, market incentives) in shaping local development trajectories will be examined. This perspective is rather common in the field of development studies, not least among those studies inspired by SLA. However, as a response to scientific critiques mentioned in Section 3.2.2 (e.g. Baumann and Sinha 2001; Farrington *et al.* 1999), the present thesis attempts to build a more politically-informed approach to livelihood change. For that purpose, the analysis described in the previous research theme is expanded towards an examination of the links between mainstream environmental discourse, state and policy-makers' resource politics, and political-economic factors such as national development strategies, environmental legislation, land regulation and economic incentives. From there, combining the research framework of SLA with the abovementioned 'hybrid research' approach, the study focuses on the following two questions: **What are the main patterns of livelihood and environmental change that have characterized two Laotian upland villages over the past three decades? How are the latter patterns linked to environmental politics and political-economic change at the national scale?**

To a significant extent, these questions meet up with the issues raised in the previous theme. By focusing on the nexus between livelihood and environmental processes, the empirical analysis is intended to provide a comprehensive insight into both institutional causes and biophysical impacts of livelihood change and, hence, to highlight another, more material, aspect of the social construction of the land degradation issue in Laos. Overall, this second research theme takes an explicit 'top-down' perspective – looking at the impacts of broad-scale institutional change on local socio-economic and environmental dynamics. Accordingly, the empirical findings associated with such a unilateral perspective need to be questioned through an approach accounting for the local factors and drivers of change.

- Theme 3 – Human agency and everyday politics

The third research theme relates precisely to the 'local dimensions' of socio-environmental change. Building upon different fields of scientific literature and, in particular, work on livelihood diversification and de-agrarianisation (e.g. Bryceson 1996; Ellis 1998, 2000), on the geographies of globalisation (e.g. Bebbington 2000;



Kelly 2000; Rankin 2003; Rigg and Nattapoolwat 2001) and on the everyday politics of state governance and development intervention (e.g. Li 1999b, 2005; Peluso 1995, 2005; Wadley 2004), the study focuses on the following question: **How and to what extent have local socio-economic differentiation patterns, local socio-cultural change and everyday state-society politics contributed to shape the recent development trajectories of two Laotian upland villages?**

In practice, the research included in this third theme follows two complementary analytical paths. On the one hand, the development trajectories identified in the two study villages are ‘de-constructed’ through an actor-oriented approach which examines the main factors for livelihood differentiation at the household and individual scales and discusses the consequences of the latter differentiation for environmental change and the evolution of the structure of upland societies (e.g. wealth inequalities, differentiated impacts of land degradation). Yet, in contrast with the functionalist perspective proposed by many livelihood studies (see Section 3.2.2), this study emphasizes human agency and attempts to highlight not only the processes of social differentiation that are driven by constraints (e.g. on access to land, labour availability, employment opportunities) but also the forms of differentiation that result from unforced individual strategies and actions. On the other hand, the study also attempts to introduce some ‘politics’ into the livelihood debate. For that purpose, the empirical analysis accounts for the local practices and socio-environmental outcomes of accommodation and resistance to state intervention. This research theme permits an engagement with the economic and political agency of Laos’ upland populations in the face of land degradation and the state project. It also allows a consideration of the concomitant question of uneven development as an effect of both unconstrained local actions and local actors’ mediation of ‘external’ constraints and incentives. More generally, complementing the institutional ‘top-down’ approach developed in the previous theme, the third theme engages thus a reflection on the nature and actual outcomes of global-local and state-society interactions in the uplands of Laos.

### **3.4. Summary**

As this chapter has argued, dealing comprehensively with local socio-environmental change and its political-economic driving forces requires deploying conceptual and

methodological approaches capable of working across common ‘society-nature’, ‘global-local’ and ‘state-society’ conceptual divides. First, nature and society should be conceptualized as partly co-constructed through human discourses, actions and power relations. Nature – defined as the physical environment – is an active constituent of human imagination and discourses. Yet, the physical environment is also transformed by human actions which are, in turn, shaped by power relations, culture and other social contingencies. Furthermore, nature and human actions on nature may be instrumentalized through environmental discourses and, thus, may contribute to support particular projects of society.

Second, similar to ‘society-nature’ interactions, global and local change should be approached as co-produced. Indeed, local populations are not simple reactors to macro-scale changes. Local culture, economy and politics play an integral and active part in influencing not only the ways global and broad scale phenomena like economic globalization and political liberalization infiltrates and expands over new spaces but also the very emergence and reproduction of these phenomena. Third, in order to account for the inextricable intertwining of state and society, the state may be better approached as a relational ensemble that connects particular actors, claims and practices, strategically – i.e. orientated towards the pursuit of particular social, political and/or economic objectives – and dynamically – i.e. created, reproduced and transformed through everyday social interactions and power struggles between state and non-state actors.

As further argued in the chapter, two theoretical approaches – Political Ecology (PE) and the Sustainable Livelihoods Approach (SLA) – can provide valuable bases for working across the three conceptual divides and answering the research problematic. The elaborate and critical approach to environmental issues put forward by PE means that it can represent an appropriate framework for moving beyond the ‘society-nature’ divide and approaching local environmental change through both material and socio-political perspectives. In addition, through its emphasis on the concept of actor, PE can effectively work across the abovementioned ‘state-society’ divide and integrate valuable perspectives on power networks and everyday politics in the analysis of socio-environmental change. Similarly, with a central concern for actors’ power and resource struggles in their political-economic environment, PE gives more room for a

consideration of human agency and, thus, can contribute to build up a valuable approach to the co-production of global and local change. However, through its multi-dimensional and non-sectoral approach to livelihood change, SLA appears more pertinent for the identification and comparison of local trajectories of change in people's material interactions with the environment. The study proposes thus to test a 'political ecology of livelihoods' that places local livelihood decisions and trajectories in a broader approach to environmental politics and the political economy of socio-environmental change.

Building on this proposal, the chapter has identified three main research themes. The first theme relates to the evaluation of the respective contributions of actual biophysical processes, actors' power relations and resource politics to the production of mainstream environmental knowledge in Laos. Research included in this theme intends to provide empirical material for feeding the discussion on 'society-nature' interactions. The second theme relates to the role played by Laos' mainstream environmental discourse and the wider political economy in shaping local livelihood and environmental change. The research included in this theme reflects an effort to combine political ecology and livelihood analyses and, importantly, 'inject' politics into the livelihood debate. Contributing also to the latter effort, the third research theme relates to human agency and local resistance to state intervention. Research included in this theme focuses on the role played by local social differentiation patterns, socio-cultural change and everyday politics in propelling and shaping socio-environmental change. It is intended to feed the discussion on the co-production of global and local change and the outcomes of state-society interactions.

The next three chapters follow the sequential order of these three main research themes. Chapter 4 contributes essentially to the first research theme. Building on a review of official documents, national statistics, project reports and academic literature, this chapter examines the construction and policy outcomes of the current mainstream discourse on land degradation in Laos. In particular, it identifies the main narratives structuring this discourse, examines the influence of this discourse on policy, highlights the central role played by some actors in the production and diffusion of this discourse, and suggests a number of political and economic rationales underlying discourse and associated policy. From there, combining a 'hybrid research' approach and livelihood analysis in two upland villages of northern Laos, Chapter 5 questions the local,

biophysical and social ‘realities’ of the official environmental discourse and examines major trends of livelihood change in response to land degradation, economic policy and state development schemes. In that sense, the chapter contributes to both the first and the second research themes. The case studies provide some empirical material to feed the analysis of Laos’ mainstream environmental discourse. At the same time, livelihood analysis allows drawing causal links between local socio-environmental change and broader scale political-economic decisions and dynamics. Finally, Chapter 6 provides some insights into the local driving forces for socio-environmental change and factors of uneven development. This chapter contributes thus to answer the questions posed in the third research theme and, importantly, engages a reflection on the agency of upland populations in the face of land degradation and state project.

## **Chapter 4. Land degradation: discourses and policy**

While environmental conservation represents a core objective of national development policy in Laos (e.g. GoL 1993, 2000, 2003), so far only a few studies have provided an in-depth analysis of the rationale developed by the Laotian authorities and their development partners for this approach. According to these studies, a key narrative in the official discourse represents shifting cultivation – widely practised in the uplands of the country – as a primary cause of deforestation (e.g. Ducourtieux *et al.* 2005; Fujita 2004; Ireson and Ireson 1991; Seidenberg *et al.* 2003). Further, as suggested by Aubertin (2003), shifting cultivation practices are represented as a threat not only to forests but also to biodiversity, lowland water supply and hydropower production. Behind these concerns, she argues, the Laotian authorities intend to strengthen their control over upland ethnic minorities (see also Goudineau 2000; Ireson and Ireson 1991).

These conclusions resonate with the work of Forsyth (1996) and Walker (2003) in the uplands of northern Thailand. As described by these scholars, a core element of official environmental discourse relates to the critical role played by upland populations in causing deforestation and, consequently, reducing downstream water supply, engendering significant soil erosion and lowland sedimentation. Showing that there is very little empirical evidence of links between forest clearing and downstream water shortage, Walker (2003) argues that Thai rural development policy puts too much emphasis on regulatory measures that threaten upland livelihoods without considering the increasing water consumption of lowland populations. Similarly, combining biophysical measurements of soil erosion with a survey of local environmental perceptions, Forsyth (1996) shows that upland farmers in his research area have developed soil conservation strategies and argues that most lowland sedimentation is likely to be of natural origin or arising from road construction. He then suggests that upland agriculture is probably overrated as a source of lowland sedimentation in Thailand and that “government policies aiming to reduce sedimentation and water shortages by reforestation and resettlement may not achieve these environmental goals, and may instead be reflective of traditional state concerns to gain control over remote land and minorities” (Forsyth 1996: 388).

Following a similar line of inquiry, this chapter intends to provide a critical and politically-informed perspective on environmental change in Laos. Importantly, it aims at highlighting possible knowledge gaps, uncertainties and contradictions as regards the actual extent, severity and causes of land degradation in the country and their implications for environmental discourses, policy and politics. In order to lay the foundations of this analysis, the following section of the chapter reviews recent scientific debates and discussions related to environmental change and knowledge production. Then, building on a review of official documents, national statistics and project reports, the section argues that mainstream environmental discourse in Laos is structured by two main narratives. On the one hand, deforestation and land use pressure generate a ‘chain of degradation’ that stretches from soil erosion in the uplands to wetland sedimentation, floods and droughts in the lowlands. On the other hand, in the uplands, ecological fragility and endemic poverty combine with rapid population growth and shifting cultivation to propel a ‘downward spiral’ of poverty and land degradation which, in turn, feeds the ‘chain of degradation’. The second section of the chapter highlights that, despite a lack of empirical evidence in support of the official environmental discourse, rural development policy in Laos is strongly influenced by the idea that the uplands are the ‘epicentre’ of land degradation and poverty in the country and that, as such, they require significant state intervention under the form of land use regulation and population resettlement. The third section proposes an alternative reading where environmental discourse and development intervention appear partly shaped by the political and economic interests of policy makers and current political elites. The fourth section gives a brief description of the recent evolution of the official discourse on the Laotian uplands and the potentially positive impacts that such change of perspective may have for policy and livelihoods in the uplands. Finally, the fifth section summarizes the main findings and highlights some aspects of the co-construction of society and nature in Laos (see also Chapter 3, Section 3.1.1).

## **4.1. Construction of the land degradation issue**

### *4.1.1. Facts and fictions*

Degraded land has been defined by the FAO as “land which due to natural processes or human activity is no longer able to sustain properly an economic function and/or the original natural ecological function” (ISO 1996 quoted in FAO 1998: 31). According to

the Global Assessment of the Status of Human-induced Land Degradation (GLASOD), 65 percent of the world's land resources are degraded to some extent (Oldeman *et al.* 1991). The more recent sequel of GLASOD, the Assessment of the Status of Human-induced Land Degradation in South and Southeast Asia, states that in Southeast Asia virtually all land is degraded and more than 80 percent is at least moderately degraded. The same study argues that erosion by water represents the most common case of land degradation with agriculture and deforestation as the two major causative factors (Van Lynden and Oldeman 1997). Drawing upon these two studies, the UNEP states that, in Southeast Asia, "land degradation problems are directly related to land-use practices, particularly agricultural expansion and intensification" (UNEP 2002: 75) and the FAO considers that all the land resources of Laos are degraded with 84 percent of land at least moderately degraded (FAO 2000).

The FAO definition raises two questions. First, the notion of economic function brings about a considerable relativity in the assessment of land degradation. While for some actors (e.g. conservationists, tourism workers and foresters) the conversion of a forested area into agricultural land will often be seen as an indubitable degradation of the land, for others (e.g. farmers and cattle breeders), the change will be a rather positive one. As pointed out by Johnson *et al.*, land degradation is "a term whose meaning reflects our perceptions, view points, timeframes, and value attachments" (1997: 583). Second, the ecological perspective implicit in the definition is being called into question. As argued by the 'new ecology' paradigm (see Chapter 3, Section 3.1.1), ecosystem dynamics are partly characterized by non-equilibrium and indeterminacy. Therefore, definitions of land degradation based on concepts such as 'original natural ecological function' appear particularly weak. If the economic function of a piece of land is a relative notion and if ecosystems are not necessarily homeostatic, establishing firmly that any landscape is beyond its level of economic and ecological resilience seems a rather uncertain project. Furthermore, the exact extent, severity and causes of land degradation – both locally and *a fortiori* globally – remain vigorously disputed. Many studies suggest that 'global' assessments of land degradation lack appropriate methodologies to deal with the complexity of the issue. Land degradation is indeed strongly scale-sensitive and has multiple spatial and temporal dimensions depending on the biophysical, economic and cultural context in which it is defined (e.g. Brookfield 1999; Fresco and Kroonenberg 1992; Warren 2002). Therefore, measurements made at a particular scale may be

contradicted by other measurements at different scales (Gray 1999). As a matter of fact, sponsors of ‘global’ environmental assessments often acknowledge the limited reliability of their results. For instance, about a recent study of the world’s land resources (based on the GLASOD data and widely used in international development agencies’ country reports), the FAO states that “there are a number of inherent limitations to small-scale global studies of this kind, presented at regional and country levels. [...] For small countries, results tend to be unreliable, whereas for large countries, the data are likely to represent averages across several agro-ecological zones” (2000: 2).

In fact, while they may have some value as international references, macro-scale environmental assessments can also contribute to produce simplistic models which discount the complexity of socio-environmental interactions and/or provide a biased vision of land degradation issues. For instance, often misled by aggregate, macro-scale data, much of the early literature related to poverty-environment interactions posited a ‘downward spiral’ of poverty and environmental degradation (Scherr 2000). In this neo-Malthusian model, population growth, limited access to land and lack of resources for conservation investments drive rural poor people to intensify their pressure on the environment. The resulting environmental degradation further limits natural resources availability and increases poverty. One of the most famous examples of this kind of simplistic representation relates to what has come to be known as the ‘Theory of Himalayan Environmental Degradation’ (Ives and Messerli 1989). Appearing during the 1970s in academic publications (e.g. Eckholm 1976) and quickly echoed by international organizations (e.g. World Bank 1979), the Theory described increased sedimentation and flooding in the Ganges and Brahmaputra lowlands as the direct consequences of the Nepalese uplands’ extensive deforestation. Deforestation was presumed to result from rapid growth of the poor upland populations largely dependant on forest resources for their subsistence. It was then assumed that cleared land, steep slopes and heavy rainfall were causing increased runoff and soil erosion, resulting in land slides and catastrophic sediment discharge and floods in the lowlands.

Fifteen years later, empirical studies – based on biophysical measurements and/or local perceptions – discredited the thesis, highlighting that upland-dwellers had a different perception of the actual land degradation and different theories on the causality



linkages, that rates of deforestation and erosion were not as serious as supposed, and that many upland farmers had developed effective conservation measures (e.g. Ives and Messerli 1989; Metz 1991; Thompson *et al.* 1986). Since then, many micro-scale and longitudinal studies have reiterated this point in a number of different contexts (e.g. Forsyth 1996; Mazzucato and Niemeijer 2001; Ravnborg 2003; Templeton and Scherr 1999; Tiffen and Mortimore 1994; Tiffen *et al.* 1994). Clearly, none of the studies mentioned here denies that accounts of land degradation processes and issues such as those provided in the Theory of Himalayan Environmental Degradation are partly based on actual empirical facts. However, they indicate that, depending on their scales and methods of observation, assessments can reach different conclusions regarding the causes and extent of land degradation. Perhaps more importantly, they indicate that the inclusion of different actors and viewpoints in the debate often leads to contradictory assessments. Hence, they highlight the way certain empirical observations are used to support environmental narratives and legitimate particular political interventions (Guthman 1997).

According to Forsyth (2005), two main bodies of work can be identified in the literature analysing the construction of environmental narratives (see Chapter 3, Box 3.1). Influenced by the Cultural Theory perspective, some scholars have focused on the role played by social structures in shaping environmental discourse (e.g. Roe 1991; Thompson *et al.* 1986, 1990). For instance, challenging the Theory of Himalayan Environmental Degradation, Thompson *et al.* (1986) highlighted a number of different, sometimes conflicting environmental discourses which, they argued, are the reflections of different social groups (e.g. state agents, upland farmers, NGO workers) and their different worldviews. Although gathering actors in ‘sociocultural boxes’ may be viewed as reductionism, the approach proves valuable for gaining insights into the links between human organization and political behaviour. For instance, even if the abovementioned ‘downward spiral’ perspective has become increasingly difficult to sustain in view of micro-scale studies, it still represents an important frame of reference for policy-makers. This is particularly true among international organizations where the temptation to link directly poverty and environmental degradation seems recurrent (e.g. Dasgupta *et al.* 2005; Durning 1989; UNEP 1995; WCED 1987; World Bank 1992, 2006). To some extent, the simple and easily generalisable ‘downward spiral’ model reflects the large scale planner’s standpoint of international organizations. It also fits

rather well with their macro, uniform approaches to alleviating poverty and environmental degradation (Forsyth *et al.* 1998).

Taking a different perspective, other scholars have focused on the role of discourse in modelling biased visions of socio-environmental history which, in turn, influence research, policy-making and development intervention (e.g. Bassett and Zuéli 2000; Fairhead and Leach 1995; Leach and Fairhead 2000; Leach and Mearns 1996). For instance, looking at the deforestation issue in West Africa, Fairhead and Leach (1995) highlighted the persistence of a ‘catastrophist’ narrative conveyed through authoritative international environmental assessments. Structured by accounts from the colonial period and assumptions regarding the past existence of a regional socio-environmental equilibrium (i.e. where West African populations and their ‘traditional’ lifestyles integrated harmoniously with an ‘original climax vegetation’ of primary forests), this discourse represents the region as having experienced dramatic forest loss during the last century as a consequence of population growth, social dysfunction and changing land use practices. Accordingly, it advocates strong conservation policy and state interventionism. Yet, as pointed out by the same authors, this representation of West African landscapes does not exactly concur with empirical evidence. In many instances, local land uses appear rather different and rates of deforestation lower than what is described in the ‘catastrophist’ narrative which, in addition, tends to overlook long-term, climate-induced dynamics of transition between savanna and closed forest.

By misrepresenting complex causality linkages and/or understating local experience, such discursive simplifications or falsifications not only limit our understanding of the socio-environmental interactions, they can also have important implications in terms of policy. For instance, a conclusion of the West African narrative challenged by Fairhead and Leach (1995) is that, if local populations are unable to preserve their environment, the responsibility for managing natural resources must be transferred to – or, at least, shared with – external actors such as state agencies, international organizations or NGOs (see also Bassett and Zuéli 2000; Goldman 2001). In other words, protection of the ‘public interest’ and reduction of local actors’ control over their environment often go hand in hand. Hence, as argued by Guthman, “the *facts* about environmental deterioration [can] become subordinate to the broader debates on the politics of resource use” (1997: 66, original emphasis). For instance, we may observe situations where powerful actors attempt to strengthen or expand their political influence by being both

producers and beneficiaries of a particular environmental discourse. In this regard, Adger *et al.* (2001) highlight the role of international organizations in, concurrently, producing assessments of so-called global environmental problems, advocating global environmental management as a solution and supporting/supervising international agreements and regulations. By defining the problems and suggesting technocratic solutions in which they play an essential role, international organizations are legitimizing their own existence and actions, even if the suggested “solutions do not necessarily reflect ecological realities of the human utilization of the environment” (Adger *et al.* 2001: 709).

In that sense, the production of environmental knowledge can be a means for some actors to ‘infiltrate’ political spaces usually dominated by others. As Goldman puts it in the case of the World Bank’s actions in Laos:

“[Environmental] impact assessments also act as important levers to open up the countryside for investigation and intervention. Since so little data have been collected on Laos, any data that are generated become important elements in the struggle over the particular meanings and values of nature and the environment. No matter how much controversy erupts over the reliability of the knowledge-production process, these assessments effectively enable a platform for claims-making by transnationalized development officials” (2001: 514).

Hence, from a redefinition of the environmental conditions emerge new ecological rationalities and new solutions to environmental ‘problems’ which, in turn, require new or restructured institutions, new regulatory regimes and, accordingly, a re-organization of land and natural resource management. Through this process, local socio-environmental interactions may be radically transformed.

By looking at the social construction and political implications of Laos’ mainstream environmental discourse, the next sections of the chapter provide empirical arguments to the scientific discussion above. These sections identify the main narratives structuring the official environmental discourse, examine some of the links between discourse and policy, and suggest that discourse and policy are partly shaped by the particular viewpoints and individual interests of Laos’ policy-makers and political elites.

#### 4.1.2. *The 'chain of degradation' narrative in Laos*

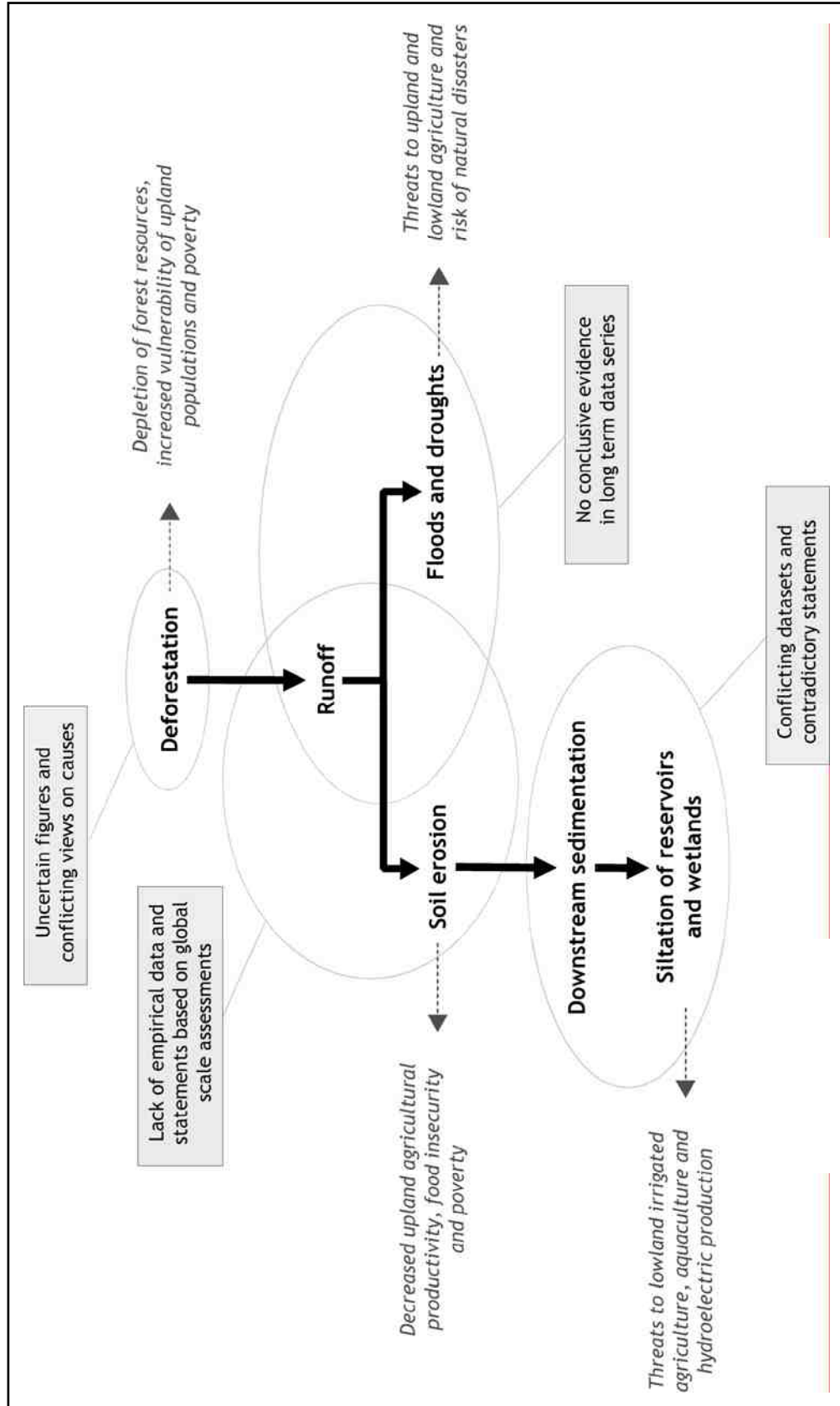
Since the late 1980s, the state of Laos has placed environmental preservation at the core of its rural development strategy and emphasized the importance of natural resources for economic growth and poverty reduction. Although assessments differ in terms of the exact extent and significance of the issue, the Laotian government and major international development agencies with a presence in the country (e.g. United Nations, World Bank, Asian Development Bank, Mekong River Commission) agree on the fact that Laos' development is threatened by a 'chain of degradation' stretching from deforestation to soil erosion and related downstream impacts (Figure 4.1). It is argued that forest clearing increases rainfall runoff which, in turn, fosters soil erosion. Increased runoff also alters hydrological regimes and increases the frequency and intensity of floods and droughts while, at the same time, eroded sediments accumulate in the streams and silt up wetlands and reservoirs. As presented by the Laotian authorities:

“Lao PDR's abundant natural resources, especially water and forests, provide a strong foundation for national development. However, careful stewardship is needed to sustainably develop these resources. [...] Rates of deforestation threaten to deplete many valuable forest resources over the next few decades. [...] The major effects of deforestation include: increased rainfall runoff and flooding; reduction of underground aquifer recharging; soil erosion and the accompanying downstream siltation of rivers and wetlands; biodiversity losses due to habitats destruction; and climate change” (GoL 1999a: 19).

Similarly, for the United Nations:

“Forest cover is believed to be declining rapidly due to land clearance for farming and shifting cultivation, illegal and unsustainable logging practices, fuel collection and forest fires. Deforestation and the loss of forest cover around villages lead to declines in soil fertility and increasing rates of soil erosion, in turn necessitating the clearance of more forest areas for production [...] Declines in soil fertility, increases in the number of weeds, and increasing rates of soil erosion have reduced agricultural productivity, whilst the continuing loss of forest cover has reduced the stability of water catchment areas, increasing surface runoff and the vulnerability of lowland areas to flooding and habitat destruction” (UN 2000: 53-54).

Figure 4.1: The 'chain of degradation' narrative and its limitations.



This sequence of consecutive environmental degradation processes is commonplace in the official literature dealing with Laos' natural resources, either explicitly as in the two quotations above or more implicitly by presenting, in ordered sequences, the state of various resources (i.e. first forests, then land and water) along with their respective and interlinked threats (i.e. first deforestation, then soil erosion, siltation, floods and droughts) (e.g. ADB *et al.* 2006; GoL 1993, 2003; MRC 2003; UNEP 2001). Yet, many scholars call into question perspectives which link upstream and downstream processes in simplistic cause-and-effect models (e.g. Bruijnzeel 2004; Ives and Messerli 1989; Walker 2003). In fact, little indisputable evidence is available regarding the extent and processes of land degradation in Laos and, thus, the prevailing environmental discourse appears partly based on a combination of assumptions coupled with, as we will see, economic exigencies and political desires.

- Deforestation

The core premise of the 'chain of degradation' narrative is that the forested areas of Laos have decreased from more than 70 percent of the country in the 1940s, to 64 percent in the 1960s and 47 percent at the end of the 1980s (GoL 2005a; UNEP 2001; World Bank *et al.* 2001). Regarding more recent figures however, opinions are divided (Table 4.1). In its State of the World's Forests, the FAO presents optimistic figures with a forest cover of 53.9 percent in 1995 (FAO 1997). In contrast, the MRC estimates that forest cover has steadily decreased since 1989 to represent 39.7 percent of the territory in 1997 (MRC 1997)<sup>16</sup>. Close to the latter assessment, the Laotian authorities estimate that forested land currently represents 41.5 percent of the country – i.e. 98,270 of the 236,800 square kilometres making up the country (GoL 2005a). Regarding annual deforestation rates, estimates also vary from one actor to another (Table 4.1). Officially, some 70,000 to 220,000 hectares of forest are cleared every year (GoL 1999a). However, based on a comparative study of satellite imagery between 1993 and 1997, the MRC found a lower rate of 54,000 hectares per year (MRC 1997). Four years later, the UNEP based its predictions on official figures from the 1980s to state that, with a deforestation rate of 300,000 hectares per year, "the country's last remaining forest areas will disappear over the next 38 years" (2001: 37).

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<sup>16</sup> It must be noted that the distribution of reports and maps from this study has been blocked by the Laotian authorities which, according to some authors, would be explained by the fact that the government need to present optimistic figures in order to attract foreign aid: less forests meaning less money from aid agencies and conservation NGOs (Aubertin 2003; Lang 2001).

Table 4.1: Estimates of forest cover and deforestation rates in Laos

Year	Forest cover		Deforestation rate (km sq./year)	Sources
	km sq.	% of Laos		
1940	160,000	70%	-	GoL 2005a; World Bank <i>et al.</i> 2001; UNEP 2001
1960	151,500	64%	-	
1989	110,000	47%	-	
1994	110,000	47%	700 - 2,200	GoL 1999a
1995	124,350	53.9%	1,480	FAO 1997
1997	93,898	39.7%	540	MRC 1997
2001	116,000	49%	3,000	UNEP 2001
2005	98,270	41.5%	-	GoL 2005a

Laotian authorities and international development agencies generally disagree on the main causes of deforestation. Officially, agricultural expansion and shifting cultivation are the primary causes of forest destruction (Photo 4.1). However, for most international development actors, logging – both legal and illegal – occurs first. Indeed, at the Mekong River basin level, while most of the deforested areas are cultivated in many cases agriculture expanded subsequently to deforestation (MRC 2003). Local case studies provide a more nuanced view of the respective impacts of shifting cultivation and logging activities. For instance, analysing land use and cover change in a village of the Vientiane municipality, Thongmanivong *et al.* (2005) highlighted two different processes and causality linkages. While shifting cultivation has indeed been a main proximate cause of deforestation in the village, the actual surface area deforested during the past fifty years has remained very small. In contrast, forest degradation and fragmentation due to commercial logging have been much more significant processes, with more than one third of the study area converted to shrub land and degraded forest.

- Runoff and soil erosion

The next link in the ‘chain of degradation’ narrative postulates that increased runoff and soil erosion are the result of deforestation and agricultural expansion (e.g. ADB 2001; GoL 1999a, 2003; MRC 2003; UNEP 2001). At this stage however, with the exception of some statements based on the questionable GLASOD (see Section 4.1.1), reports from governmental and international development agencies provide very little empirical evidence to document the processes and linkages involved. In fact, most of the agencies

reporting on environmental change in Laos base their assessment and recommendations on a generic, *a priori* model which is applied regardless of the exact socio-environmental context (or multitude of contexts). Thus, on the one hand, they present the consequences of deforestation and agriculture for runoff and soil erosion as self-evident threats. But on the other hand, they acknowledge that data on land degradation and understanding of the processes are fairly limited.

*Photo 4.1: Agriculture and deforestation in northern Laos, Ban Lak Sip, May 2004.*



For instance, introducing key environmental issues, the UNEP argues that: “land erosion due to high degree of slopes in Lao PDR gets compounded with deforestation in uplands” (2001: 4). However, regarding this particular process, it is later suggested that: “the lack of soil erosion data should provide an impetus for further research and monitoring” (2001: 52). Finally, after having described a series of issues running from deforestation to soil erosion, sedimentation, flooding and biodiversity reduction, they acknowledge that, in general, “data is limited, fragmented and generally of limited reliability” (2001: 77). Besides data limitations, it must also be noted that a number of case studies challenge this conception of deforestation and agriculture as the most



significant causes of increased runoff and soil erosion. For instance, research in northern Thailand suggests that roads and road building may have much more significant impacts on catchment health (e.g. Douglas 1999; Forsyth and Walker 2008; Ziegler and Giambelluca 1997).

- Sedimentation

Similarly, regarding downstream sediment discharge, the next link in the chain, statements are both contradictory and uncertain. According to the UNEP:

“A recent analysis of sedimentation data in the lower Mekong basin suggests that sediment rates in the southern parts of Lao PDR have increased substantially over the past twenty years. They are among the highest in the region, although the exact causes for the increase have not yet been determined” (2001: 52).

Illustrating the longevity of this standpoint (and, perhaps, the lack of inspiration of some consultants), a surprisingly similar quote can be found in the National Environmental Action Plan published eight years before the UNEP report<sup>17</sup>. However, contrary to what is claimed by the UNEP, these observations are not particularly recent since they rely on a report dating from October 1992 (Harden and Sundborg 1992). In contrast, according to the MRC (2003), sediment levels have declined in the Mekong River since 1992 and the Commission argues that the concerns raised about the siltation of the Tonle Sap Great Lake in Cambodia are unjustified.

- Floods and droughts

Finally, summarizing the current situation regarding the impact of deforestation and agricultural expansion on hydrological regimes, the MRC states that:

“It is still unclear, however, how much impact land use changes have had on the hydrological regime of the Mekong. The removal of so much forest cover would be expected to result in changes in the rainfall-runoff relationship. [...] However, no one has yet found any conclusive evidence in the 90 years of historical data for any significant changes” (2005: 6-7).

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<sup>17</sup> “A recent analysis of sedimentation data in the lower Mekong basin furthermore suggests that sediment rates in the south have increased substantially over the past twenty years and are among the highest in the region, although the exact causes for the increase have not yet been determined” (GoL 1993: 35).

In general, as pointed out by Campbell (2007), a joint analysis of environmental perceptions and hydrological data in the Mekong river basin shows a very significant mismatch between the main issues put forward by government staff and international experts and the actual situation as observed through measurements of water quality, sedimentation levels, dry season flow, and flooding frequency and extent. In contrast with the consensus found among state and major international agencies, available biophysical data do not point towards a general trend of environmental degradation. In the end, contradictions and uncertainties contrast with the recurrent statements regarding the threats that deforestation and agricultural expansion represent for the development of Laos. Rather than relying on robust empirical evidence, the environmental discourse established in the official literature appears to be based on a set of assumptions regarding direct causal relationships between forest and land clearing, soil erosion, downstream sedimentation and hydrological regimes and, from here, to such social and economic issues as poverty, agricultural underproduction and food insecurity (see Figure 4.1). To better understand this line of thinking, it is necessary to examine another major constituent of the environmental discourse, namely the place and role of the uplands in the land degradation ‘issue’.

#### 4.1.3. *The upland ‘issue’ in Laos*

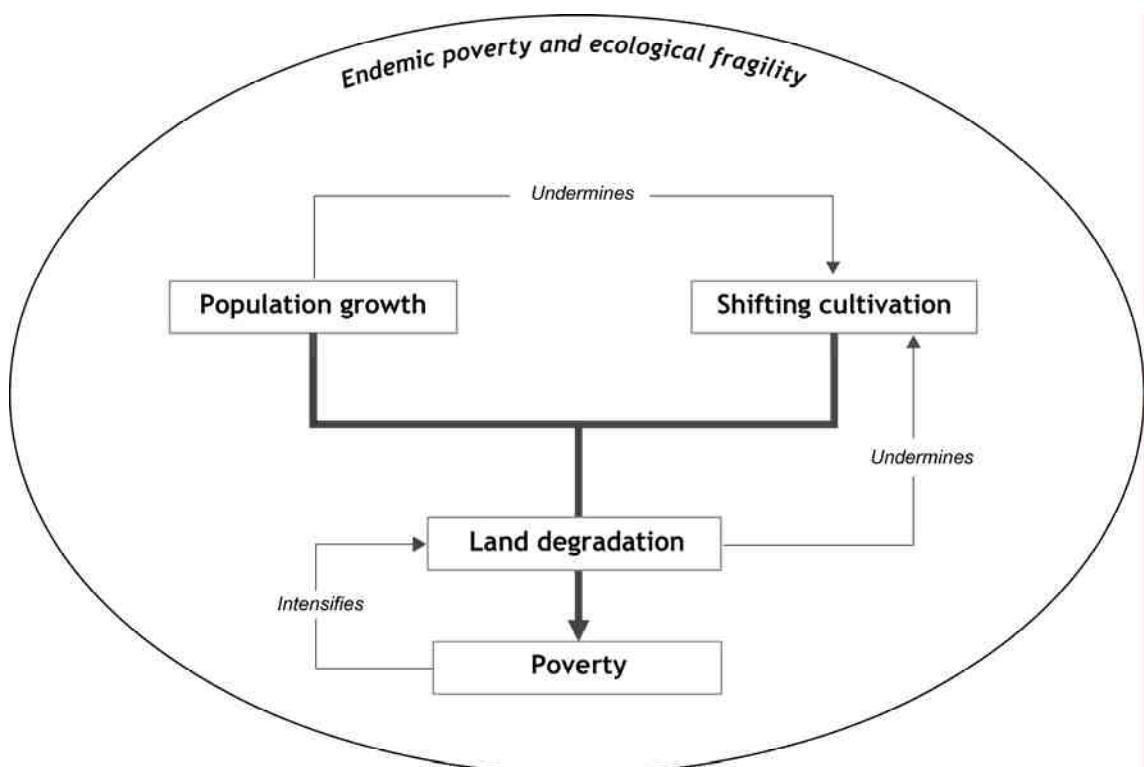
Due to their extent and the particular biophysical and socioeconomic context that characterizes them, the uplands are considered as a very specific issue for Laos’ development actors. Importantly, they are assumed to be the centre stage of a ‘downward spiral’ of land degradation and poverty (see Figure 4.2).

- Ecological fragility and endemic poverty

Upland areas are commonly estimated to represent 80 percent of the country and the major part of the forested areas. In 1989, according to the Ministry of Agriculture and Forestry (GoL 1992), more than 70 percent of Laos’ forests were concentrated on steeply sloping land (i.e. slope angle > 20 percent). Synonymous with important local variations in climate, soils and ecological milieus, the uplands also stand for a ‘hot spot’ of the country’s biological diversity (Chamberlain 2003; Douangsavanh *et al.* 2003). However, because they combine steep slopes with poor soils, the uplands are considered as being more ecologically fragile and more prone to soil erosion than any other area of

the country. According to the FAO's world land resource assessment (2000), with more than half of its territory characterized by very steep slopes (i.e. slope angle > 30 percent) and abrupt textural contrasts in its soil profiles, Laos ranks first in the countries with the highest relative extent of steeplands and eleventh in the countries most affected by erosion hazard. This perspective is further solidified by the 'chain of degradation' narrative (see Section 4.1.2). Indeed, despite numerous uncertainties, downstream wetland and reservoirs' siltation as well as water shortages and floods are often cited as the main consequences of upland runoff and soil erosion. Hence, in some measure, the uplands' ecological fragility makes the lowlands vulnerable.

Figure 4.2: Population growth, shifting cultivation and the 'downward spiral' of land degradation and poverty in the uplands of Laos.



From a socioeconomic perspective, the Laotian uplands are generally characterized by a poor development of the infrastructures of exchange, very limited market integration and the predominance of subsistence economy based on farming activities. While the information currently available at the national scale does not allow a clear differentiation of upland and lowland populations (see Box 4.1), it is commonly estimated that the uplands are sparsely populated, essentially by ethnic minorities living in poverty (Rigg 2005a).

Poverty appears as a critical issue here, since, according to some studies, poor households exceed 70 percent of the total population in some northern, mountainous provinces (see Appendix, Table A2). Reports from governmental agencies and international organizations describe the situation as follows:

“In the mountainous upland areas, subsistence agriculture and acute rural poverty predominate” (GoL 1999a: 3).

“The poorest districts in Lao PDR are characterized by very sloped land, relatively low population density, and – particularly in the South – by ethnic minorities” (World Bank 2006a: 75).

“Among the 4.2 million rural people of Lao PDR (2000), representing 80% of the total country population of 5.2 million, about 40% (approximately 2 million people) are estimated to live in poverty. [...] Most of these villagers live in upland forested areas and practice slash-and-burn shifting cultivation to produce upland rice and other crops for their families or consumption by their animals” (UNDP 2002: 33).

#### **Box 4.1: Poverty studies in Laos**

Most of the macro-scale poverty studies in Laos are based on the same dataset: the Lao Expenditure and Consumption Survey (LECS) undertaken by the State Planning Committee with support from the World Bank. This survey has been conducted on three occasions, in 1992/93 (GoL 1995a), 1997/98 (GoL 1999b) and more recently in 2002/03 (GoL 2004a). However, only the last sequel of the survey integrated a distinction between lowland and upland populations and, to date, no lowland-upland differentials of poverty figures have been published. Actually, statements regarding poverty in the uplands are often based on the overall topography of the provinces or districts and their rural poverty estimates – in other words, in mountainous provinces, ‘rural poverty’ translates as ‘upland poverty’. Besides, the accuracy of the rural poverty figures remains questionable. As pointed out by Rigg (2005a), studies based on the LECS dataset have produced rather different estimates at the provincial level. Importantly, the important variations observed from one province to another and from one year to another (see Appendix, Table A2) cast some doubts over the reliability of the survey data and the methods used to calculate poverty levels.

As noted by Rigg (2005a), among national and international development actors, inaccessibility is commonly considered as a key explanatory factor of poverty. For instance, the Laotian authorities argue that:

“The uplands are locked in a vicious circle of poverty. The mountainous terrain has made it difficult and costly to provide all-weather roads. Consequently, many

villages are isolated and lack access to markets and services available in most lowland areas. Irrigation is limited and shifting cultivation is widely practised. Subsistence farming is still the norm for most households, leaving little if anything for investment for a better future” (GoL 2003: 129).

With very limited access to essential livelihood assets such as financial capital, agricultural technology and education, upland populations are considered as trapped in poverty (e.g. Andersson *et al.* 2006; UNDP 2002). More importantly, because of their geographical isolation, upland peoples are cast aside from the market and its promises. Consequently, they are seen as having no other alternative than to rely strongly on their environment (at the risk of degrading it) in order to sustain a living. What is particularly striking in this narrative is the degree to which subsistence economy is given a negative meaning. In some reports, ‘subsistence’ is even translated as ‘survival’:

“Many communities in these [poor] districts are small and remote, with limited access to roads and markets and improved water supply and sanitation, and a high reliance on natural resources for their *survival*” (World Bank 2006a: 75, emphasis added).

This perspective denotes what scholars like Chamberlain (2001) and Rigg (2005a) describe as the ‘creation of a new poverty’ in Laos. As Rigg argues, “there is an objective poverty and, at the same time, a poverty which is defined and measured in terms of certain value judgements” (2005a: 35). Whether for rigidly ‘economistic’ international lenders or for a former communist state recently converted to the free market ideology (see below, Section 4.3.3), the subsistence economy is a prime cause of poverty and therefore an ill to be eradicated through development propelled by market integration.

From these particularities – i.e. rich but fragile ecosystems, inaccessibility, subsistence economy, high levels of poverty and ethnic minorities – emerge very specific development stakes for the Laotian state and its development partners in terms of environmental conservation, economic development, poverty reduction and national integration. Further adding to their specificity, the uplands are assumed to be embarked on a ‘downward spiral’ of land degradation and poverty that feeds the upstream-downstream ‘chain of degradation’ described above (Section 4.1.2).

- Population growth, shifting cultivation and the ‘downward spiral’

The country’s rapid population growth and its potential consequences in terms of pressure on upland natural resources are attributed a particular role in propelling the ‘downward spiral’. Overall, with a density of just 24 inhabitants per square kilometre, and even if the population continues to increase by 2.8 percent per year (UNESCAP 2004), demographic pressure does not appear as an immediate major threat for the environment. Nevertheless, some agencies argue that, if only the ‘potential arable land’ is considered, the net population density will reach critical values in some areas – up to 465 inhabitants per square kilometre according to the MRC (2003) – and lead to significant pressure and ensuing environmental degradation. For instance, using slope and soil characteristics to delimit land use suitability classes, the Ministry of Agriculture and Forestry estimates that only 32 percent of the national territory is actually suitable for agricultural purposes and, in view of rapid population growth, recommends conservation measures and forestry in the remaining area (GoL 1999a).

Besides population growth and resulting land scarcity, shifting cultivation is also assumed to play a central role in propelling the upland ‘downward spiral’. While there is some dispute over the exact figures, it is usually considered that some 300,000 households (Goudineau, 1997), or one third of Laos’ total population (UNDP, 2002), probably engage to some extent in shifting cultivation. According to the FAO (2001), the practice is essentially concentrated in the uplands with approximately 70 percent of the fields located on land with slopes greater than 20 percent. The debate over shifting cultivation can be reduced to two antagonistic discourses. One, mostly supported by scholars, considers the practice as productive, sustainable and well adapted to the Laotian upland context (e.g. Chamberlain, 2003; Fox, 2000; Raintree, 2003). For these authors, shifting cultivation is often made unsustainable by inappropriate or misapplied land regulations:

“In fact, shifting cultivation, rather than being the hobgoblin of tropical forest conservation, may be ecologically appropriate, culturally suitable, and under certain circumstances the best means for preserving biodiversity in the [mainland Southeast Asia] region” (Fox 2000: 1).

“The main threats to rotational swidden systems are from misapplied land allocation practices which reduce rotational cycles and deplete soils, resulting in

unsustainable yields. Thus, while alleged runaway population increase among the ethnic minorities has become the rallying point for the urgent introduction of changes to swidden systems, there is no evidence to justify this urgency in Laos, especially in light of the fact that rotational swidden cultivation in the tropics is one of the most efficient agricultural systems in the world” (Chamberlain 2003: 31).

In complete opposition to this viewpoint, the official discourse considers that, in the present demographic conditions, shifting cultivation is both environmentally destructive and poverty-creating<sup>18</sup>. As argued by the Laotian authorities, “most sustained severe deforestation and land degradation in Lao PDR is associated with shifting cultivation” (GoL 2000: 6). Furthermore, “with increasing population densities in the upland areas, the present farming systems [shifting cultivation] inevitably condemn upland rural people to continued poverty” (GoL 1999a: 4). And, as the following quotes illustrate, such a dark picture is not the preserve of the government:

“Most land degradation is associated with shifting cultivation, particularly in areas where population pressure has led to a significant decrease in the rotation period or where traditional lowland farmers encroach on neighbouring uplands to make up for low and often declining yields on their lowland paddy fields” (UNEP 2001: 51).

“The subsistence economy generated from shifting cultivation barely produces enough food to meet household consumption needs and provides little opportunity for improvement in rural incomes. Furthermore, rapid population growth and government regulations have forced shifting cultivators to shorten fallow periods from 10-20 years to 3-7 years, resulting in the depletion of forest, biodiversity and soil resources at a rate that does not allow for sufficient regeneration” (UN 2000: 54).

Just as with deforestation and the ‘chain of degradation’ (see Section 4.1.2), these assumptions on the socio-economic and environmental impacts of shifting cultivation often get compounded with critical uncertainties regarding the actual extent of the practice. For example, quoting an interview with the Director of Luang Prabang

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<sup>18</sup> While the Laotian authorities often distinguish rotational from pioneer shifting cultivation systems and their differing environmental impacts, such a distinction appears to be a mere formality and, when it comes to the creation and implementation of policy, the two systems are systematically amalgamated (Rigg 2005a).

province's Agriculture and Forestry Office, an article recently published in the *Vientiane Times* (the country's main English language newspaper) illustrates both commonplace ideas and slapdash assessments on shifting cultivation:

“ ‘We want to eradicate slash and burn cultivation because it is inefficient and heavily impacts the environment’, Mr Somphong said. This form of cultivation damages forested land, causing soil erosion; it also destroys wildlife habitats, pollutes the air and contributes to global climate change. [...] Last year, the amount of land under slash and burn cultivation in the [Luang Prabang] province decreased from 21,000 to 17,000 ha [...]. In 2001, Laos had a total of 119,000 ha under slash and burn cultivation, which has since been reduced to 23,000 ha” (*Vientiane Times*, April 21, 2008: 2).

With 17,000 hectares out of a total of 23,000 in 2008, this assessment makes of Luang Prabang province the country's incontestable hotspot for shifting cultivation. This might well be the case but many observers of Laos would certainly find it difficult to believe that shifting cultivation does not represent more than 6,000 ha in all the other provinces of the country.

A common view, shared by the Laotian authorities and a number of international development actors, is thus that shifting cultivation necessarily equates with subsistence – not to say ‘survival’ – and does not deliver sufficient output for the upland populations to improve their living conditions and move away from poverty. As an unproductive farming system practised by a majority of upland-dwellers, it contributes thus to the structural poverty of the uplands. Furthermore, in a general context of ecological fragility, shifting cultivation combines with population growth to engender land degradation which, in turn, undermines farming activities and exacerbates poverty. Subsequently, poverty may drive upland populations to intensify further their pressure on environmental resources in order to maintain a decent living. The picture represents thus upland-dwellers as trapped in a ‘downward spiral’ – what Blaikie portrayed as the “desperate ecocide” of the poor (1985: 117) – that pushes them inexorably towards more poverty and environmental degradation (see Figure 4.2).

Further down the line, this ‘downward spiral’ is also represented as a threat to lowland populations' well-being and, more generally, to the national economy. Following the



‘chain of degradation’ narrative, siltation of wetlands and reservoirs, water shortages and floods are often considered by the Laotian authorities and some of their development partners as the main consequences of an ‘improper’ management of the uplands (e.g. GoL 2003; MRC 2003). The chain of physical explanation is thus extended into a chain of economic and social impacts which represents upland shifting cultivation as threatening two major sources of revenue for the country, namely lowland agriculture and hydropower generation<sup>19</sup>. Added to this, the spectre of ‘natural’ disasters such as the floods and landslides that ravage regularly lowland villages in Indonesia and the Philippines, and the vision becomes an alarming one. In the end, upland degradation in Laos is considered as a significant threat not just to the livelihoods and prosperity of the hill people, but to that of the whole nation.

Central to the upland ‘issue’ is the idea that land degradation in Laos is essentially human-induced. From this perspective, the (simplistic) equation ‘population growth + shifting cultivation = land degradation + poverty’ leads inevitably to a consideration of the uplands as an ‘epicentre’ of land degradation in the country (e.g. GoL 1999a; Pravongviengkham 1998). Indeed, if shifting cultivation and poverty are essentially concentrated in the uplands, then, population growth and land degradation must be critical issues there too. But the reasoning does not end there. Subsequently, the upland ‘issue’ is transmitted to the lowlands, physically – through the sort of chain of relationships noted earlier – and also economically, socially and politically. Indeed, as will be discussed in the following sections, we can see the assumptions about the upland ‘issue’ resulting, for example, in the government’s land and settlement policies, in its approach to agricultural development and the maintenance of national food security, in the measures taken to build a national identity and the place of upland minorities in that identity, and in the way that the ‘chain of degradation’ becomes cast as a national problem.

Similar to Forsyth and Walker’s (2008) account of Thailand, the debate over shifting cultivation in Laos appears thus to be reduced to two antagonistic narratives: one that represents the practice as an ecologically appropriate and productive cropping system –

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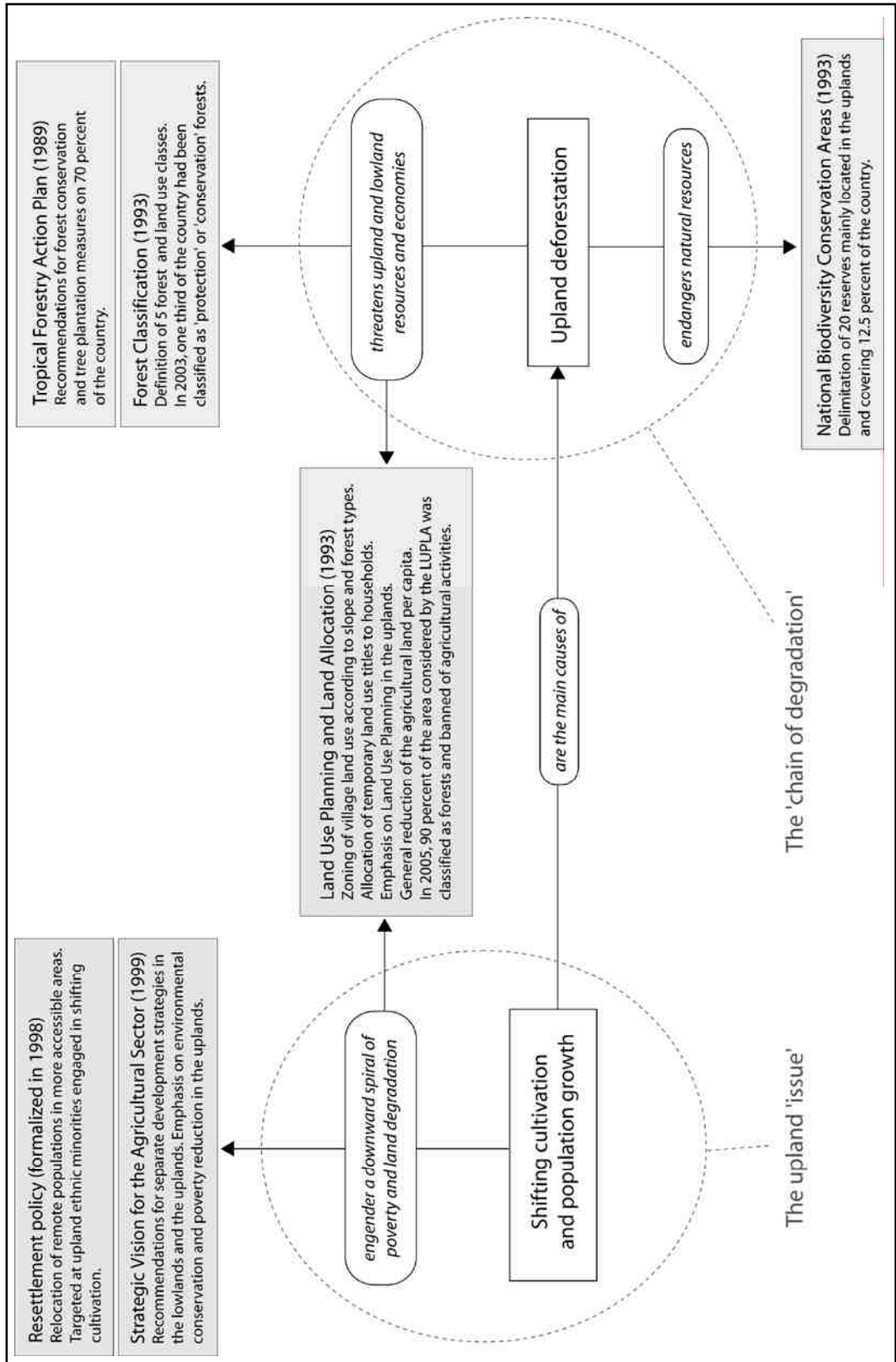
<sup>19</sup> From 1999 to 2003, agriculture represented between 49 and 55 percent of Laos’ GDP with a very significant contribution of the lowlands largely oriented towards commercial production. During the same period, hydropower accounted for 23 to 33 percent of Laos’ total exports (ADB 2006; IMF 2005).

which can allow for sustainable development of the uplands provided that it is not disrupted by state regulation – and another one that represents the traditional system as having reached its demographic limits and, hence, as a major cause of environmental degradation and poverty in the country. There may be various explanations for the existence of these two competing visions. Most probably, the abovementioned uncertainties as regards the extent of, and the links between upland deforestation, shifting cultivation and land degradation (see Section 4.1.2) contribute to leave the way open for various interpretations. However, this chapter argues that the different narratives above are not the mere results of scientific uncertainty but that they are also shaped by the values and political economic projects of their proponents. As a starting point to highlighting the latter process, the next section focuses on the perspective of the Laotian authorities and looks at the ways the ‘chain of degradation’ and upland ‘downward spiral’ narratives have influenced rural development policy over the past two decades.

#### **4.2. Implications for policy**

The official perspective on land degradation has had wide-ranging impacts on rural development policy (Figure 4.3). By picturing rapid upland deforestation as a major threat to both upland and lowland natural resource and economies, the ‘chain of degradation’ narrative has directly influenced the creation of a Tropical Forestry Action Plan (1989), the demarcation of National Biodiversity Conservation Areas (1993) and the implementation of a Forest Classification scheme (1993). At the same time, the idea that the uplands are embarked in a ‘downward spiral’ of land degradation and poverty has favoured the design of a two-tiered national development strategy emphasizing environmental conservation and poverty reduction in the uplands (e.g. the 1999’s Strategic Vision for the Agricultural Sector). Assumptions as regards direct correlations between remoteness, subsistence farming and poverty, and the role of these factors in maintaining the conditions of reproduction/intensification of the abovementioned ‘downward spiral’ have also provided incentives for resettlement policy (formalized in 1998) and the relocation/gathering of upland communities closer to markets and state extension services.

Figure 4.3: Environmental narratives and rural development policy.



Finally, the two narratives have influenced Land Use Planning and Land Allocation policy (1993). For instance, reflecting official concerns for upland deforestation and shifting cultivation, the actual implementation of the land reform programme in the uplands has largely favoured the demarcation of forest conservation areas over the allocation of agricultural land. As a result of these various political measures, what was formerly considered as a homogeneous space of mountains and forests has thus been redefined by the state and its international development partners into various ‘eco-zones’, each one with its particular set of resources, users and regulations (Goldman 2001). The following sub-sections describe in more detail the various instruments of rural development policy and examine their socio-political outcomes.

#### 4.2.1. *Land zoning and land use regulation*

Following the resolutions of the first national forestry conference held in 1989 and as a direct consequence of official concerns about the wide-ranging impacts of deforestation on upland and lowland natural resource and economies, the Tropical Forestry Action Plan recommended the implementation of forest conservation and tree plantation measures over an area of 170,000 square kilometres (i.e. 70 percent of the country)<sup>20</sup>. A few years later, in 1993, the Laotian state established a national protected area system of eighteen National Forest Reserves (*pa sanguan hengxat*) covering 28,200 square kilometres. The World Conservation Union (IUCN), the Wildlife Conservation Society (WCS) and the World Wildlife Fund (WWF) played a key role in conducting environmental inventories and identifying the areas to be preserved. In fact, illustrating once again the significant role played by international actors, between 1993 and 2004, no less than twelve different extra-national organizations (i.e. international conservation NGOs, bilateral and multilateral institutions) have provided financial and technical support to the National Forest Reserves (Fujita 2004).

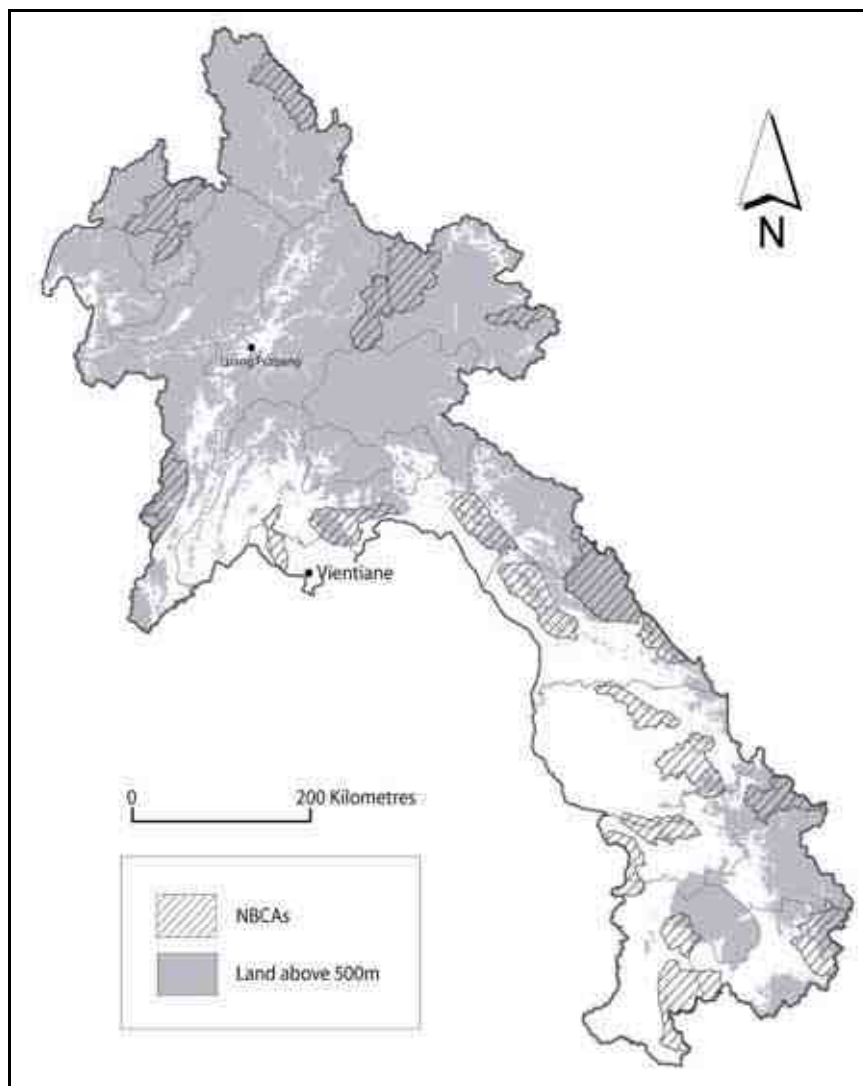
These reserves were later renamed National Biodiversity Conservation Areas (NBCAs) – a concept promoted by the World Bank and major international conservation NGOs – and further expanded to twenty areas, accounting for some 30,000 square kilometres or

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<sup>20</sup> The concept of the Tropical Forestry Action Plan was developed during the mid-1980s by the FAO, the UNDP, the World Bank and the World Resources Institute (WRI) as an instrument to control deforestation in the tropics.

12.5 percent of the country. The Prime Minister's decree No. 164 stipulated that human activities were totally prohibited in the areas concerned. However, in 1996, this decree was superseded by the Forestry Law which subdivides NBCAs into three zones, corresponding to three levels of conservation priority: a 'total protection' zone where human activity is proscribed, a 'corridor' zone where hunting and tree felling are prohibited, and a 'controlled use' zone where limited collection of forest products and hunting are permitted. In terms of spatial distribution, a large majority of the NBCAs are located in upland areas (Figure 4.4). According to some authors (e.g. Robichaud *et al.* 2001), this would be due to the fact that very little natural habitat remains in the lowlands. However, as the preceding section suggests, the official representation of the uplands as a critical area for the national land degradation 'issue' is likely to have also influenced the distribution of the conservation areas.

Figure 4.4: National Biodiversity Conservation Areas in Laos.



At the same time that the National Forest Reserves were created, the Prime Minister's decree No. 169 established a land zoning system to be implemented at the village scale. Renewed in 1996 with the Forestry Law, this policy classifies village land into five categories:

- 'Protection forest' (*pa ponkan*) where human activities are prohibited for the purpose of preventing soil erosion and associated natural disasters as well as protecting water sources and national defence areas
- 'Conservation forest' (*pa sanguan*) where human activities are prohibited for the purpose of preserving fauna, flora, biodiversity and areas of cultural, educational or scientific interest
- 'Regeneration forest' (*pa feunfu*) which is reserved for natural reforestation of young fallow forests
- 'Production forest' (*pa somsay*) where limited logging and collection of forest products are permitted
- 'Degraded forest' (*pa xutsom*) which can be allocated for tree plantation, livestock farming or permanent agriculture. Shifting cultivation is not allowed

Various studies point out that this classification is often very far removed from the actualities of local land use practices. On the ground, in the very few cases where the different forest categories making up the village land are understood and recognized by local populations, interpretations of the associated regulations vary greatly from one interlocutor to another (e.g. Aubertin 2003; Fujita 2004; Schlemmer 2000). In addition, it is unclear whether the legal status of 'conservation' forests (*pa sanguan*) corresponds or not to the abovementioned NBCAs (*pa sanguan hengxat*). It seems that the only distinction lies in the authorities in charge of managing these areas, namely, the village authorities for the 'conservation' forests and the Ministry of Agriculture and Forestry for the NBCAs. Further adding to the confusion, even though there is no national legal framework, some 276 'conservation' forests are managed by the provincial and district agriculture and forestry authorities (Robichaud *et al.* 2001).

Through the Land Use Planning and Land Allocation programme (LUPLA), the forest classification has become the main instrument of an 'area-based' approach to development in Laos (Rigg 2005a). The LUPLA constitutes one of the main elements of the government strategy related to rural development and natural resource management.

In its early form, the program consisted of a simple Land Use Planning agreement between village authorities, organized in a committee for the occasion, and the national authority represented by the District Agriculture and Forestry Office (DAFO)<sup>21</sup> and other district financial and planning officers. The agreement determined the boundaries of the land available for agrarian purposes, with the remaining land defined by default as forest. After 1993, with the Prime Minister's decree No. 169, these 'forest areas' were further subdivided according to the official forest classification. Agricultural land distribution within the village community – the actual land allocation process – remained with the local authorities who were instructed to limit each household to three plots. This simple restriction, to which was later added a rule limiting the fallow period to three years, was designed to reduce cropping rotations and, in line with the rural development objectives, make shifting cultivation no longer viable. The process became gradually more elaborate and now involves the mapping and zoning of the village land (see Photo 4.2) according to slope gradients and forest types and the allocation of agricultural plots to households according to their labour availability. At the end of the process, an agreement regarding land management is signed between village and district authorities, a reference land use map is posted in the village and Temporary Land Use Certificates (TLUC) are issued to the village households<sup>22</sup>.

Officially, the land allocation criteria includes a limit of 22 hectares per active individual, of which a maximum of 1 hectare is permitted for upland rice, 15 hectares of pastureland, 3 hectares of cash crops and 3 hectares of orchards. The lowland paddy fields are not considered in the allocation process and, therefore, remain with their owners (Ducourtieux 2006). While these rules appear relatively favourable to farming activities, the land allocation is in fact largely conditioned by the total surface area classified as agricultural land during the land use planning process. Yet, it seems rather doubtful that any village in Laos would be able to allocate the maximum 22 hectares of land to any of its residents without penalizing the rest of the community. Indeed, between 1995 and 2004, around 90 percent of the area considered by the LUPLA has been classified as forested land on which agricultural activities are banned (GoL 2005a)

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<sup>21</sup> Emphasizing their focus on extension activities, DAFOs have recently been renamed District Agriculture and Forestry Extension Offices.

<sup>22</sup> TLUC are meant to be the first step towards permanent, full ownership land titles. Legally, they are valid for three years, inheritable but not saleable (Evrard 2004). In effect, these temporary titles are commonly sold, even if their period of validity has expired.

and, according to Aubertin (2003), from the first experimentations of the land reform in the early 1990s until 2003, one third of Laos has been classified as ‘protection’ or ‘conservation’ forests.

*Photo 4.2: Land use planning map after the LUPLA was implemented, with support from GTZ, in a village of Luang Namtha province<sup>23</sup>.*



Source: Dirou (2006).

Actually, an increasing number of studies, including state-sponsored assessments, agree on that fact that the LUPLA comes generally with a drastic reduction of the agricultural land available *per capita* (e.g. Ducourtieux 2006; Evrard 2004; NAFRI and LSUAFRP 2002). In fact, through the creation of an agricultural land shortage, the stated intentions of the land reform – “to encourage people to use their creativeness, efforts and capital in the reform and development of the land in a serious manner” and “to produce commercial products” (GoL 1995b: 4-5) – indicate that it is expected to reorient

<sup>23</sup> Red, orange, dark green and light green colour codes correspond to areas classified, respectively, as ‘protection forest’, ‘degraded forest’, ‘conservation forest’ and ‘regeneration forest’. Brown and yellow colour codes correspond to ‘agricultural land’ and ‘paddy fields’. As further discussed in this section, the balance is clearly in favour of forest conservation (i.e. 556 hectares of ‘forests’ for only 66 hectares of agricultural land and paddy fields).



livelihood systems by constraining them. In other words, by reducing the extent of the land available for farming, villagers would be forced to abandon shifting cultivation, to intensify their production practices and to develop economic alternatives such as market-oriented production.

While the official scope of the LUPLA is national, its objectives and actual implementation appear very much influenced by the official discourse on land degradation. For instance, among the eight objectives of the program, five are largely aimed at resolving the abovementioned upland ‘issue’: i.e. to eradicate shifting cultivation, to intensify and diversify upland agriculture, to preserve forests and watersheds, to preserve biodiversity, and to improve the living conditions of the upland populations by the adoption of a sedentary lifestyle (Evrard 2004). Revealingly, the first experimentations of the LUPLA in the early 1990s were all conducted in upland environments in Luang Prabang and Sayaboury provinces. In addition, national agencies and internationally-funded projects involved in implementing and/or supporting land reform are often ‘specialized’ in the shifting cultivation issue: e.g. the ‘Lao-Swedish Shifting Cultivation Research Sub-program’ which was in charge of the early experimentations of the LUPLA in Luang Prabang province, the ADB-funded ‘Shifting Cultivation Stabilization Pilot Project’ (2000-2006) which has supported land reform in northern Samneua province, and the national ‘Shifting Cultivation Stabilisation Centre’ which provides statistics on the implementation of the LUPLA. Indirectly, these structures and knowledge networks (centred on shifting cultivation as a problematic practice) have long contributed to uphold the mainstream narrative on the upland ‘issue’ – see also the recent CGIAR-based ‘Alternatives to Shifting Cultivation Programme’ active in several Southeast Asian countries (Palm *et al.* 2005).

As a matter of fact, land reform appears to have quite different purposes depending whether it is undertaken in the lowlands or in the uplands. The official statistics show that, by 2005, the LUPLA had been implemented in some 7,130 villages, representing approximately 440,000 households (GoL 2005a). As described by Ducourtieux (2006), however, in many upland villages, the process has only consisted of land use planning without land allocation. This divergence suggests that, in contrast with the lowlands where the focus is on the establishment of secure land rights, in the uplands, the primary objective of the land reform is the intensification of agriculture in order to avoid

environmental degradation and alleviate poverty. In other words, the top priority for the uplands would not be land allocation, but rather land use zoning, the implementation of environmental regulations and the improvement of agricultural systems deemed unproductive (Ducourtieux *et al.* 2004). To a significant extent, this differential implementation of the land reform programme – i.e. individualized land rights in the lowlands and collective land management in the uplands – probably also reflects the influence of the ‘Community-Based Natural Resource Management’ paradigm and its stereotypical association to the upland context (see Li 2002a).

After more than two decades of implementation and despite being officially aimed at improving the living conditions of the upland-dwelling communities, many studies have shown that Laos’ programme of land reform has had rather negative impacts on upland livelihoods. For scholars like Chamberlain (2001), Ducourtieux *et al.* (2005), Evrard (2004), and Lestrelin and Giordano (2007), it has led to significant agricultural land shortage, a general degradation of working conditions and farm productivity and, hence, decreased food security and increased poverty. Further down the line, this degradation of the living conditions has been described as a cause of cultural trauma and uncontrolled migration (Evrard and Goudineau 2004; Vandergeest 2003a). In fact, it would seem that the pessimistic conclusions of this growing number of studies are increasingly taken into account by the Laotian authorities. For instance, in the National Growth and Poverty Eradication Strategy, the Laotian government calls for a reconsideration of the LUPLA, considered as a potential source of hardship in the uplands (GoL 2003). A similar objective is put forward in the Forestry Strategy to the Year 2020 (GoL 2005a).

#### 4.2.2. *Resettlement*

Alongside the LUPLA, resettlement policy represents another major instrument of Laos’ rural development strategy. While this policy was not officially formulated until the end of the 1990s, ever since the creation of the Lao People’s Democratic Republic in 1975 a major effort of the Laotian government has been to relocate remote populations “nearer to the nerve centres of development to benefit from rural development policies” (Evrard and Goudineau 2004: 944). The strategy was finally formalized in 1998 with the introduction of the Focal Site approach in the National Rural Development Programme.

As presented by the Laotian authorities, “the Focal Site approach is the strategy adopted by the Government of Lao PDR to achieve rural development. Focal sites are defined as rural areas in which the government concentrates its development efforts to remove the constraints of poverty from the target populations” (GoL 1998 quoted in UNDP 2002: 47). Similarly to the LUPLA, while the policy is not specifically directed towards the upland communities, the criteria used to select the Focal Sites – in particular those related to ‘ethnic minorities living in isolation and poverty’ and ‘the need to stop shifting cultivation and consolidate villages’ - have led to this outcome (UNDP 2002).

In line with the government’s perception of the upland ‘issue’, the logic of the Focal Site approach is to create development centres where state services – e.g. agricultural extension, schools, health centres, power and clean water – and improved access to markets are provided to remote upland populations in order to help them escape endemic poverty by their integration into the national (market-oriented) economy. However, partly due to a lack of enforcement capacity, service provision and access to markets have in fact essentially meant relocation and gathering of highland remote populations along roadsides, river banks and other more accessible areas. As Rigg puts it:

“The government of Laos simply lacks the resources to comprehensively develop the country. To build roads throughout the uplands and provide schools, health centres and other services for small, spatially dispersed and often remote communities is simply a practical and financial impossibility. The emphasis, therefore, has been on concentrating efforts spatially and encouraging communities to move to these new ‘development centres’” (2005a: 114).

A number of international development agencies – e.g. UNICEF, FAO and ADB – have a long history in supporting resettlement initiatives. This support has included the provision of funds and technical advice for the development of irrigated agriculture, as well as for the building of roads, schools and health centres in resettlement areas (Baird and Shoemaker 2005). At the country level, the results of the internal resettlement programme have been substantial both in terms of population movement and impacts on these populations. According to a UNDP study, between 1993 and 1996, approximately one third of all highland villages in six mountainous provinces – Luang Namtha,

Oudomxai, Xieng Khouang, Attapeu, Sekong and Saravane – had been displaced (Goudineau 1997). In 1998, the Laotian government announced its plan to create 87 Focal Sites by 2002 (GoL 1998 in UNDP 2002). These sites would be populated by 450,000 people in 1,200 villages (12 percent of the country's rural population), half of whom would come from displaced communities. So far, while there have certainly been success stories, notably in those cases where the resettlements have benefited from strong local leadership, an effective participation of the populations and sufficient land resources in the relocation areas (Rigg 2005a), a large number of studies reported dramatic consequences, including increased rice shortage, chronic indebtedness, increased mortality, loss of cultural identity and uncontrolled migration (e.g. Baird and Shoemaker 2005, 2007; Evrard and Goudineau 2004; Jones *et al.* 2005; Romagny and Daviau 2003).

#### 4.2.3. *Lowland-upland dichotomy and state territorialisation*

Through their objectives and implementation, both the LUPLA and the resettlement policy highlight a lowland-upland dichotomy operated by the Laotian authorities. One of the most significant examples of this perspective can be found in the Strategic Vision for the Agricultural Sector published in 1999. Indeed, the entire document is based on what is described as “the dual rural economies” of the country which call for “separate development strategies” (GoL 1999a: 3). According to the authors, in the Mekong plain, the population benefit from environmental conditions favourable to productive agricultural activities as well as a good access to exchange infrastructures, credit, information and technologies. Markets are seen as ‘working properly’, providing lowland-dwellers with sufficient livelihood opportunities and incomes. Accordingly, the government policy should seek to support farming diversification, agricultural intensification and market integration.

In contrast, the uplands are described almost as the complete opposite, characterised by poor road networks, very limited access to technologies, information and credit, little incentive for entrepreneurship and, more importantly, a fragile environment. In terms of farming systems, the superiority of lowland settled agriculture (rain-fed or irrigated) versus upland shifting cultivation is considered as an incontestable fact. The first is represented as productive and environmentally sustainable while the second is defined

as a “low input-low output” activity and an aberration for the achievement of sustainable rural development (GoL 1999a: 4). In this context, environmental conservation must be integrated with economic development. Accordingly, five main strategic priorities are identified for the uplands:

- Land zoning for forest and biodiversity conservation
- Allocation of land use titles to create incentives for conservation measures
- Development of community-based and sustainable land use management systems aimed at soil erosion control, reforestation and biodiversity conservation
- Farming systems’ diversification and development of small-scale irrigated agriculture for alleviating poverty
- Improvement/extension of the road network and improved access to credit and information in order to facilitate market integration (GoL 1999a: 36-37)

Thus, superimposed on the standard urban-rural differentiation, the lowland-upland dichotomy creates a subdivision of the country into three distinct spaces which correspond to a tri-dimensional, horizontal and vertical, gradient of development: from the modern cities in the plains to the developing rural lowlands and the underdeveloped mountainous areas. In the latter, apparently driven by the state and international development agencies’ concerns for land degradation and poverty, an important territorialisation process is under way.

State territorialisation has been defined as the process through which states “divide their territories into complex and overlapping political and economic zones, rearrange people and resources within these units, and create regulations delineating how and by whom these areas can be used” (Vandergeest and Peluso 1995: 387). In that sense, the abovementioned land reform, resettlement policy and agricultural development strategy represent major instruments for the state to territorialize its power and, to some extent, to expand or strengthen its control over upland populations and resources. Through these political measures, the uplands are demarcated as a very particular area which corresponds to specific development objectives and regulations. This area is further subdivided into various rationalized zones according to slope, ecological function and integrity, and ‘optimal’ land use. The process goes so far that forest lands are designated at the behest of the state regardless of existing land cover (Article 4 of the Forestry Law).

In effect, through classifications and legal instruments largely designed to deal with the ‘chain of degradation’ and the ‘upland downward spiral’, the uplands and their resources are made ‘legible’ to the state. Yet, following Scott’s definition (1998), the underlying rationale for ‘legibility’ often goes beyond simple attempts to ‘read’ or represent the uplands in a standardized, administrative fashion. What is also at stake in the case of Laos’ environmental policy is the control of the relationship between populations and their environment. Thus, according to criteria related to economic productivity and environmental sustainability, upland-dwelling households are allocated land for determined, yet temporary uses. At the same time, for the purpose of alleviating poverty, the most remote communities are prompted to leave their traditional lands and to gather in resettlement areas designated by the state. Finally, looking at the broad picture, by representing the uplands as a critical issue for the development of the country, the official environmental discourse legitimises the intervention of the state (and, to some extent, its development partners) in local affairs and contributes to drive a very significant restructuration of the local modes of access to upland resources (further described in Chapter 5 and 6). Overall, the prevailing vision of rich and fragile upland environments endangered by human activities and social contingencies (e.g. poverty and traditional practices) is thus an important driving force for restructuring people’s access to land and other natural resources, ‘modernizing’ or ‘rationalizing’ traditional agriculture, attempting to make upland populations less poor, and indeed transforming society. As discussed earlier (see Chapter 3, Section 3.1.1), representations of nature and human impacts on the latter often contribute to reshape society.

### **4.3. The hidden transcript**

Despite its fragile empirical basis, Laos’ official environmental discourse appears to have very significant implications in terms of development policy and, from there, in terms of regulation of local land use, state territorialisation and, indeed, social transformation. However, a reverse reading of this political process can lead to a number of counter-narratives where environmental discourse and ensuing policy are partly shaped by the viewpoints and interests of policy-makers and political elites.

### 4.3.1. *Modern lowlands, backward uplands*

As discussed above, references to the contrast between ‘modern lowlands’ and ‘underdeveloped uplands’ are recurrent. Yet, this line of thinking appears sometimes to go beyond simple technical or economic considerations. Going into further detail, there seems to be a coexistence of two explanatory discourses: an official and politically-correct one which explain the ‘underdevelopment’ of the uplands by their remoteness and difficult ecological conditions, and another, more informal and condescending, which denounces upland-dwelling minorities and their archaic traditions and backward ways. From this perspective, upland populations are sometimes denounced as ‘dangerously backward and ignorant’ (Aubertin 2001). For instance, a UNDP study of the Sayaboury province quotes a speech of the Chairman of the National Rural Development Committee describing rural areas as “isolated, remote and uncivilized, in which the ways of living of people are different from others, and in which there are high natural and political risks” and where populations are “poor and backward” (UNDP 1996 quoted in Rigg 2005a: 87).

Such considerations also filter through national policy on ethnic minorities. Ever since independence, along with the subdivision of the national space described above, a major preoccupation for the authorities has been to classify the numerous ethnic minorities populating the country. The first official classification adopted after 1975 identified some 68 minorities<sup>24</sup>, gathered into three groups according to residence patterns: ‘lowland Lao’ (*Lao loun*) corresponding to the Lao-Tai ethnolinguistic group, ‘midland Lao’ (*Lao theung*) supposedly encompassing all the Austro-Asiatic minorities and ‘highland Lao’ (*Lao soung*) which is alligned to the Hmong-Yao and Tibeto-Birman minorities. As pointed out by some scholars, this classification was part of a wider attempt to build a sense of national identity (Goudineau 2000; Jerndal and Rigg 1998). Indeed, behind the subdivision – often represented on bank notes, posters or calendars by three ‘sisters’ in their ethnic outfits (Figure 4.5) – is the idea that, notwithstanding differences between ethnic groups, all can be considered Lao. Although it was officially abandoned in 1981, the topographically-based trinity still appears in many official documents and has, in fact, become the main instrument of ethnic identification and

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<sup>24</sup> The total number of ethnic minorities has been reassessed on several occasions, going from 68 in 1975 to 40 in 1991, 47 in 1995, and 49 in 2000.

differentiation for the people themselves. For instance, in a majority of villages, the population census undertaken every year by the local authorities applies the threefold classification without further details and, notwithstanding the aberration it represents, it is not unusual to hear of somebody being described as speaking ‘midland Lao’ or ‘highland Lao’.

Figure 4.5: The three ‘Lao sisters’ on a 1,000 LAK bank note.



Despite a number of official statements regarding the multi-ethnic and egalitarian character of the country, some scholars suggest that the practical applications of the national ethnic classification are not exempt from ‘sociocultural discrimination’. As described by Goudineau (2000), the Lao Front for National Construction adapts its policy on ethnic minorities in function of their traditions. In this process, minorities’ practices and beliefs are classified as ‘good’ or ‘bad’ in the light of their compatibility with the ‘national’ model of modernity. Yet, as Kaysone Phomvihane<sup>25</sup> advocated in his 1981 discourse on the country’s ethnic issue, the construction of the national identity is to be essentially based on the Lao language and Lao-Tai cultural norms (Evans 1999). Thus, in general, most of the practices identified as ‘backward’ by the Laotian state are those of the *Lao theung* and the *Lao soung* – shifting cultivation of course, but also opium cultivation, non-Buddhist beliefs, and blood sacrifice. In this regard, Laos is not an exception. In fact, all across mainland Southeast Asia, “the prevailing wisdom is one that is constructed in the lowlands, by lowlanders, and more particularly in the

<sup>25</sup> Kaysone Phomvihane was a major leader of the socialist revolution, the founding secretary-general of the LPRP and president of the Lao PDR between 1991 and 1992.



ministries of Bangkok, Rangoon, Hanoi and Vientiane” (Rigg 2005a: 67).

One of the consequences of this situation is that a sense of superiority has emerged among the lowland Lao who sometimes consider the ethnic minorities as economically and culturally backward populations<sup>26</sup>. As Stuart-Fox describes:

“What appears to be happening with respect to the non-Tai minorities is that ethnic Lao (and Tai) attitudes are reverting to earlier forms. This can be seen in the return of derogatory language to refer to Austroasiatic minorities as ‘kha’, meaning ‘servant’ or ‘domestic slave’, and to Hmong-Mien minorities as ‘meo’ or ‘savages’, instead of the previously common, officially sanctioned Lao Theung and Lao Sung. Accompanying this is a change of view from minorities as comrades in the revolutionary movement to being a problem for the modern state” (2005: 35).

In the end, in a similar vein to Vandergeest’s (2003b) account of Thailand, Laos’ environmental politics appears significantly ‘racialized’. Indeed, by picturing the uplands as both epicentre of environmental degradation and residence of poor ethnic minorities engaged in traditional (‘backward’), yet unsustainable land uses, the official environmental discourse places ethnicity at the centre stage of the land degradation ‘issue’. In that sense, land degradation becomes a socio-cultural issue and, to some extent, the ‘Laoization’ of upland minorities’ cultures and livelihoods might thus come to be seen as a necessary step towards controlling environmental degradation and alleviating poverty (Ireson and Ireson 1991). Furthermore, mainstream environmental discourse and associated policy can also be considered as having a number of practical interests for policy-makers.

#### 4.3.2. *State project, political elites and minorities*

The negative outcomes of Laotian rural development policy – land reform and resettlement in particular – have led various authors to suspect a hidden agenda of the state, including the reinforcement of state control over lucrative forest resources (Ireson and Ireson 1991) and a strengthening of the political and ideological control of remote

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<sup>26</sup> Nowadays in Laos, it is not uncommon to find young city-dwellers denying their ethnic identity and claiming to be lowland Lao in order not to be considered as ‘*khon ban nok*’ – which translates literally as ‘people from outside villages’ but has a more pejorative meaning close to ‘ignorant peasant’.

populations and ethnic minorities with cultures considered too different from the national model of modernity (Baird and Shoemaker 2005, 2007; Goudineau 2000). For some of these scholars, even the investment of the Laotian authorities in education seems to be partly directed towards these objectives since, as argued by Goudineau, “ethnic education includes the pervasive political message that minorities should understand and accept utilization of the uplands’ resources (particularly, forests and hydroelectricity) by the state” (2000: 26, my translation)<sup>27</sup>. In fact, without asserting the existence of a Machiavellian plot orchestrated by influential parties, it can nevertheless be argued that Laos’ official environmental discourse and upland development policy serve a number of political and economic interests for two, partly co-constitutive actors: the Laotian state and its political elites.

From the state’s viewpoint, hydropower and forestry represent very important sources of export revenues and are among the highest priority sectors for investment (GoL 2003). As such, they require tight control by the authorities. To a significant extent, this political objective is justified by the official representation of a national land degradation ‘issue’ linking upland deforestation with downstream sedimentation and water shortage. As Roe puts it, “crisis narratives are the primary means whereby development experts and the institutions for which they work claim rights to stewardship over land and resources they do not own” (1995: 1066). Motives related to ‘war politics’ can also provide additional explanations for increased state control in the uplands. Indeed, for a recently independent state marked by many years of war and the partially successful attempts of the French and American authorities to turn ethnic minorities against the socialist insurgents, remote communities may represent a national security issue (Stuart-Fox 2005) and, as such, they should be controlled more firmly. Ultimately, even if it is certainly not their official purpose, land reform and resettlement represents two powerful means for the state to increase its control over lucrative natural resources and potentially subversive populations. Again, Laos is not an exception in this respect. For instance, as described by Blaikie and Muldavin (2004) in India, the Theory of Himalayan Environmental Degradation continues to be used to legitimize centralized

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<sup>27</sup> “L’éducation des ethnies comprenait, entre autres choses, le message politique insistant qu’elles devaient comprendre et accepter que l’État puisse utiliser les ressources naturelles, bois et hydroélectricité particulièrement, des zones montagneuses, régions qui étaient une propriété de la nation entière, quels qu’en aient pu être traditionnellement les occupants”.

control of valuable natural resources while, in China, it has been instrumentalized by the state to increase its political control of minority areas. Similar political processes have been also described in Thailand (Forsyth 1996; Forsyth and Walker 2008; Walker 2003). In fact, these variations of the same ‘upstream-downstream degradation’ model suggest that scientific theory that ‘fits’ with state interests can remain influential and authoritative even after it has been widely discredited in the academy.

Besides state preoccupations, Laos’ official environmental discourse may also be seen as influenced by the economic interests of the country’s political elites. For instance, the reluctance of the government to refer to logging as a main cause of forest clearing can be explained by the fact that the activity represents a major source of revenue for the army. Indeed, in 1992, partly for the purpose of financing the army’s operational costs and incomes, all logging rights were handed over to three military-owned companies (Goldman 2001; Lang 2001), with the consequence that any action undertaken against logging activities would also go against the interests of high-ranking military officers with influential positions in both the Laotian government and the Lao People’s Revolutionary Party (LPRP) – the sole legal political party of the country<sup>28</sup>.

Finally, when considering the place of the minorities in the political life of the country, the implications of Laos’ environmental policy can also be analysed in ethnic terms. As described by Rigg, “minorities are thinly represented in government, have significantly worse health and education profiles than the Lao, and are *de facto* if not *de jure* socially, politically and economically excluded” (2005a: 67). During the early years of the socialist revolution (1945-1975), the official policy of the LPRP was to promote the participation of ethnic minorities in the political life of the country. Thus, many non-ethnic Lao were offered positions within the political and administrative institutions of the territory controlled by the revolutionary forces. However, in the long term, the policy never really succeeded to strike a balance in the upper echelons of the political system. After 1975 and the creation of the Lao People’s Democratic Republic, this tendency reversed and the new recruits of the Party were essentially composed of lowland Lao, often more educated and, for that reason, considered more capable of

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<sup>28</sup> For a description of the close overlap between the LPRP and the Laotian government, see Stuart-Fox (2005).

governing the country. In fact, members of minority groups also lacked the social links with powerful, predominantly ethnic Lao, political and economic elites required for gaining access to influential positions. As a consequence, the prominence of minorities in the organs of power decreased rapidly and the dominant institutions of the country, the Party and the Army, are now largely in the hands of lowland Lao (Stuart-Fox 2005).

Therefore, pushing the reasoning further, one of the consequences of this imbalance of power is that the lowland Lao are in a position to instrumentalize the environmental discourse in order to expand their political influence to the most marginal areas of the country. In this respect, large-scale environmental assessments (such as those mentioned in Section 4.1.1) and the ‘chain of degradation’ narrative (Section 4.1.2) can provide valuable grounds for the lowland Lao leadership to expand its control over the upland territory, in the guise of development interventions. If deforestation and agriculture are responsible for such a critical level of land degradation, the upland minorities living in forested areas and practising shifting cultivation are to be blamed and controlled. Hence, presented as solutions to the land degradation ‘issue’, land zoning, land use regulation and resettlement can legitimize and contribute to broader attempts of the Laotian state and, indirectly, the lowland Lao political elites to control lucrative upland resources and the peoples who use them. But in the end, the idea that uncontrolled population growth and unsustainable agricultural practices are in danger of exceeding the ecological capacity of the uplands, threatening not only some of the country’s most valuable resources but also the prosperity of the lowland populations, may well constitute more a ‘lowland myth’ than a reality. However, as suggested by a number of quotes in Section 4.1.2 and Section 4.1.3, this representation appears to be also accepted, and even promoted by a number of international development agencies.

#### *4.3.3. Coalition and compromise*

A first explanation for the consensus found among government and international agencies probably lies in the country’s history of economic dependency. As described by various authors, Laos first emerged as a distinct geographical entity at the beginning of the twentieth century, with the creation of Indochine (French Indochina) and the negotiation of boundaries with the Siamese kingdom (1907). Ever since then, the country has remained under strong economic influence from external powers: first the

French colonial empire, progressively replaced by the United States during the civil war (1954-75), then the Soviet Union and, to a lesser extent, Vietnam after the socialist victory and the creation of the Lao People's Democratic Republic in 1975, and more latterly, by Thailand (Jerndal and Rigg 1998; Rehbein 2005; Stuart-Fox 1997; Taillard 1989).

During the early years of independence, the Laotian government attempted to build up a more autonomous national economy by adopting a socialist mode of production and developing agricultural cooperatives. However, the experience was a major failure. By the end of the 1970s, a very large majority of the rural population was still very reluctant to follow the collectivization campaign and, in reality, most of the cooperatives existed in name only (Evans 1995). Since then, prompted by pressure or non-cooperation from below, a collapsing domestic economy and a gradual acceptance of the difficulties faced by the socialist model worldwide, the Laotian state engaged with a transition from a subsistence to a market economy (Rigg 1997, 2005a). By undertaking wide-ranging political and economic reforms, the government intended to ensure new sources of funding and revenue from international finance institutions and foreign investors, substituting for the Soviet Union's dwindling support (Stuart-Fox 1998). As is indeed usual in the world of development, legal reforms and state restructuring are often the preconditions for bank loans, foreign aid and private investments (Jones and Hardstaff 2005). As expected, as soon as the economic transition had been engaged, foreign assistance and grants and loans from multilateral and bilateral development agencies started to flow into the country. After fifteen years of reform, this assistance gradually increased to represent almost one quarter of the country's GDP and half of the public expenditure, essentially directed towards the development of Laos' transport and social infrastructures (see Appendix, Table A3 and Table A4).

The main political instrument of the transition was introduced in 1986 under the name of New Economic Mechanism (NEM) or *chintanakan mai*. Partly as a response to the requirements of the International Monetary Fund, the World Bank and the Asian Development Bank (Stuart-Fox 2005), the policy has consisted in important regulatory reforms oriented towards a progressive liberalization of the domestic economy – e.g. tax system restructuring, finance and trade deregulation, promotion of foreign investment, privatisation measures and creation of property rights. Concurrently, in order to

facilitate the policy shift, various international donors and development agencies became involved in the making of a new legal framework. Legal reform, however, has not only concerned the economic sector and, since 1986, an army of foreign consultants – employed by institutions as diverse as the World Bank, the Asian Development Bank, United Nations agencies, the Swedish International Development Agency and the World Conservation Union – have also been involved in the promotion and codification of numerous decrees and laws relating to natural resource ownership and management (see Appendix, Table A5)<sup>29</sup>.

According to Goldman (2001), this rewriting of Laos' environmental legislation has to do with the solutions advocated and supported by major international development agencies for solving issues of environmental degradation and poverty in the country. A prevailing view in organizations like the World Bank and the ADB is that large capital projects such as hydroelectric dams and large scale plantations represent highly valuable means not only for increasing government revenues and bringing economic development in poor regions but also for providing poor populations with new livelihood options and, hence, diverting them from imposing excessive pressure on natural resources. As described by Goldman:

“Proponents of “immediate action” believe that only a massive intervention can stem the rising tide of ecological destruction and human poverty, and that a large capital project would be the best, and perhaps the only, vehicle for changing the way that the environment gets managed. As such, hydroelectric dam builders, the World Bank, the Lao state leadership, and international conservation groups have joined together in support of a hydro-dam solution to the problem” (2001: 505).

In turn, these large scale projects require laws for establishing certain property rights (on land, water, forests and infrastructures) and regulations for preserving the public image of the promoters (e.g. resettlement schemes, compensation measures). Indirectly, thus, the ‘downward spiral’ model of land degradation and poverty represents once again a guideline for law, policy making and, hence, social transformation.

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<sup>29</sup> This process has sometimes been so rapid that laws written up directly in English by foreign experts (e.g. the Land Law of 1997) have had to wait several years before being translated into Lao and submitted to the national assembly (Stuart-Fox 2005).

Interestingly, the environmental legislation of Laos reveals a shift from a ‘nature-based’ to a ‘people-based’ argumentation. Rationales in support of the early legislation are generally based on the perception that the country’s natural resources have been significantly depleted and require, *ipso facto*, conservation measures. For instance, the Prime Minister’s Decree No. 67 related to the logging ban is introduced as follows:

“The sector of forestry has also displayed numerous insufficiencies and shortcomings [... that] have caused the forest resources and the environment of our country to meet increasing damage. In order to solve these insufficiencies [...], the Prime Minister decrees a national logging ban” (GoL 1991).

In contrast with the above, rationales in support of laws drawn up after 1993 are primarily based on the importance of environmental preservation for economic growth and poverty reduction. Thus, Article 1 of the Forestry Law states that:

“The Forestry Law determines the basic principles, rules, and measures relative to the administration, maintenance and use of forest resources and forested land [... in order to] make forests and forested land a sustainable source of subsistence for the people, to ensure the protection of water resources, to prevent soil erosion, to protect flora and fauna, and thus, to contribute to the socioeconomic development and prosperity of the nation” (GoL 1996).

Presumably, the advent of the ‘sustainable development’ paradigm – since 1987 and the report of the Brundtland Commission (WCED 1987) – and the significant role played by international development agencies in both the diffusion of this paradigm and the production of Laos’ legal framework have contributed to drive this change of perspective from ‘nature conservationism’ to ‘eco-developmentalism’ (Escobar 1996; McAfee 1999).

Besides the long-term involvement of international actors in the promotion, funding and codification of environmental policy and regulations, another explanation for the existence of a general consensus on the national land degradation ‘issue’ probably lies in the respective interests that Laotian government and foreign development agencies have to collaborate. While it would be rather cynical to claim that the only beneficiary of foreign aid is the Laotian leadership, it can nevertheless be argued that the latter has undeniable interests in maintaining the presence and activities of international development agencies. As noted above, foreign aid represents half of Laos’ public

expenditure and, according to Stuart-Fox (1996), development projects funded and managed by international agencies are often a good way for the government to prove its commitment to the well-being of the people. Furthermore, beyond this concern for public image, the presence of international agencies also encourages foreign private investment which, after the economic reforms of 1986, has become a significant source of revenue for the political elite of the country, either through the exercise of corruption or because they or their families and allies are also part of the economic elite and provide services to foreign entrepreneurs (Stuart-Fox 2006).

Bearing in mind Laos' dependence on foreign aid, what may appear more surprising is that a number of international development agencies are supporting rather uncritically the implementation of some of the state's policies, despite the evidence of their negative impact on upland minorities' livelihoods. Indeed, as Baird and Shoemaker describe regarding the involvement of foreign agencies in Laos' resettlement program:

“Some expatriate and ‘local’ staff view the proper role of aid agencies as to unquestioningly assist in implementing government policy, and hold that development is essentially about making ethnic minorities more like ethnic Lao. While aid agencies might not endorse this view, they appear to have done little to try to influence or counter this prejudice. Even when these biases are brought to their attention, some agencies appear more concerned about program continuation and ‘not rocking the boat’ than anything else” (2005: 4).

It seems that the most important objective for some aid workers is not so much to preserve the public image of their agency, but rather to maintain a presence in the country, to have programs running, so that the money can continue to flow into the system and salaries can be paid to expatriates and local staff. And in the particular case of Laos, there are longer term perspectives to this strategy. As Guéguan points out, “Laos is an ideal country for the so-called ‘development NGOs’: Laotian non-governmental organisations being prohibited by the government, the international NGOs cannot ‘pass on the torch’ to local actors as they usually do in other countries. Therefore, they can justify their presence indefinitely” (2005, my translation)<sup>30</sup>.

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<sup>30</sup> “Le Laos est un pays rêvé pour les ONG dites « de développement » : le gouvernement interdisant la création d'organisations non gouvernementales laotiennes, les ONG internationales ne peuvent, comme elles le font dans d'autres pays, « passer le flambeau » à un relais local. Elles peuvent donc justifier de



While this situation of mutual interest certainly requires some trade-offs on the part of the Laotian authorities too, their response to international pressure is often a simple demonstration of good will which engages them only very superficially. As Stuart-Fox puts it:

“The Lao are accomplished negotiators, who know just how far to go in responding to pressures for reform in ways that seem positive. Discussions take place, usually with middle-level technocrats who speak English; arguments for change are laid out; there is agreement over likely benefits – and then nothing is done. Or perhaps something does happen. A new law is promulgated, new regulations are introduced, a presidential or prime ministerial decree is announced. [...] But nobody takes any notice. Implementation is minimal, but the government can point to its good intentions” (Stuart-Fox 2006: 72).

Thus, when the international pressure goes against the interests of the political leadership, a first solution can be to play with words. For instance, in the late 1990s, reflecting partly an effort to show the process under a more favourable light for a number of international detractors, the LUPLA, originally known as *kan beng din beng pa* – literally, ‘land and forest delimitation’, was renamed *kan mop din mop pa* – literally, ‘land and forest allocation’. Yet, the policy remained largely unchanged. In contrast, when the reforms requested meet the interests of the leaders, the change can be more fundamental. This was the case with the economic liberalisation engaged from 1986 with the New Economic Mechanism (see above). In the end, supported by international development agencies and notwithstanding its socialist past and strong nationalistic ideas, the Laotian state is adopting the line of a ‘green neoliberal’ strategy whereby the national space is redefined into rationalized eco-zones, state agencies are redesigned to integrate trans-national actors, and new environmental regulations are produced according to global norms (Goldman 2001).

However, this does not necessarily mean that the power of the state is declining to the benefit of international actors. As St John points out, “from the outset, the Lao approach to reform could best be characterized as *perestroika* without *glasnost*, or economic

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leur présence indéfiniment”.

change without political reform” (2006: 186). More than a bilateral agreement, the relationship between the government and their international development partners can be compared to a ‘coalition’ of powerful actors, gathered by converging interests. Yet, as mentioned above, such a ‘coalition’ does not necessarily benefit the development of the country as a whole. As argued by various studies mentioned throughout this chapter, it may even be to the detriment of a significant part of the population.

#### **4.4. Future prospects**

As noted earlier, the description of the official discourse related to the upland ‘issue’ may give the false impression that the case is closed, the causative factors known and the solutions identified. However, in recent years, the strategy advocated by the Laotian government for resolving the ‘issue’ has changed towards a more ‘people-centred’ approach and, importantly, more participation of the local populations and less constraints on local livelihoods. Borrowing the terminology from Adger *et al.* (2001), the approach has thus evolved from a ‘managerial and neo-Malthusian’ perspective – which describes upland-dwellers as forced to degrade their environment due to unsustainable population densities and advocated the diffusion of technological solutions – to a more ‘populist’ viewpoint – which presents upland populations as the (unfortunate) victims of a lack of land tenure security, education and economic opportunities, and suggests education and improved access to land as the main solutions. For instance, in 1993, the Laotian authorities presented the situation in the uplands as follows:

“Unless the high fertility rates are curbed and agricultural production technologies are adopted which aim to increase yields and stabilize upland production in those upland areas where the fallow period has already been significantly shortened, land resource degradation will become a much more significant issue than it is to date. Continued high population growth will also put increased pressure on the country’s forest resources, as agriculture will have to expand further into forest lands and demands for currently still amply available fuel and other wood will increase sharply” (GoL 1993: 5-6).

Ten years later, in 2003, the National Growth and Poverty Eradication Strategy describes the challenges of the government with regard to poverty and the environment in the poorest districts of the country (i.e. the uplands) as follows:

“While the deforestation rate for the poorest districts is about the same as the national average, these districts have experienced a far greater decline in agricultural land. However, they have, on average, 52 ha of high-density forest area per household, suggesting that with access and knowledge to efficiently use the forest resources, the well-being of the poor could be improved while conserving the forests” (GoL 2003: 117).

Thus, even if the fundamentals of the upland ‘issue’ have not been entirely reconsidered, there is an important paradigm shift regarding the potential solutions to land degradation and poverty in the uplands. Furthermore, if the shift appeared to be essentially discursive during the early stages of this PhD study, recent policy and institutional developments suggest that it is now starting to turn into practice. Following official statements regarding the potentially negative outcomes of land reform (see Section 0), LUPLA is now actively reconsidered by the Laotian authorities. Experiments are currently being conducted by the new National Land Management Authority, in cooperation with international development agencies (e.g. AusAID, GTZ), in order to improve the land reform process. At the same time, the rate of implementation of the LUPLA has significantly decreased since the early 2000s – from 1,300 villages per year during the 1995-1999 period to some 300 villages per year since 2002 (GoL 2005a). In the end, there are prospects for a development policy that does not use constraint and coercion to drive livelihood change among upland populations but, instead, attempts to provide these populations with more livelihood opportunities.

#### **4.5. Summary**

Clearly, there are various and diverging voices behind what are termed ‘the state’, ‘the political elites’, ‘upland populations’ and ‘international development agencies’. By employing these broad categories of actor, the analysis runs the risk of suggesting a somewhat schematic vision of environmental politics, which, at times, it certainly does (see Chapter 6). However, the simplification is useful in approaching the prevailing discourse related to land degradation in Laos, the assumptions, interests and power relations that contribute to shape this discourse, and their consequences in terms of policy-making. What appears clearly from this analysis is that Laos’ official environmental assessments are marked by an important lack of empirical evidence. In fact, the official environmental discourse is based on two narratives – ‘chain of

degradation’ and ‘downward spiral’ of poverty and land degradation – that have long been discredited by academic studies in a wide variety of contexts. Instead of being a source of controversy, however, these two narratives appear to be objects of a general consensus between the Laotian authorities and major international development agencies.

In turn, they have important consequences for policy making. For instance, by representing deforestation as a major threat to both upland and lowland environments and economies, the ‘chain of degradation’ narrative has directly influenced land, forest and biodiversity conservation policy. Large conservation areas have been demarcated and land policy has generally favoured forest conservation over agricultural land use. In addition, the vision of poor and remote upland populations, engaged in subsistence, yet unsustainable farming activities and embarked on a ‘downward spiral’ of land degradation and poverty that feeds the ‘chain of degradation’ has provided incentives for the resettlement of remote communities in more accessible areas, closer to markets and state services. Similarly to what has been described in Thailand and Vietnam (e.g. Buch-Hansen 2003; Sowerwine 2004; Vandergeest 1996; Vandergeest and Peluso 1995), these various political measures contribute to facilitate the effort of the state for assigning the ‘right place’ to the people and their activities.

To some extent, however, behind the official discourse on land degradation and the national objectives of environmental preservation, socioeconomic development and nation-building, rural development policy reflects also the particular worldviews and interests of policy makers and political elites. Indeed, besides ‘traditional’ state concern for territorialisation, governing the uplands is also a matter of securing key sources of revenues (i.e. forestry, lowland agriculture and hydropower) and policing potentially subversive remote populations. For the national elites (generally ethnic Lao and more familiar with the lowland context), mainstream environmental discourse and rural development policy can also represent valuable means to justify and expand one’s political and economic influence over upland resources and peculiar ethnic minorities. For international development actors, asserting the existence of critical land degradation and poverty issues represents the insurance that their presence and activities will not be contested and, not least, will continue to be sponsored.

Finally, the arguments developed in this chapter intersect with more conceptual debates on the co-construction of society and nature (see Chapter 3, Section 3.1.1). In Laos, the prevailing discourse on the way ‘nature’ and the resources it provides are used, endangered and should be managed appears very much structured by the social project of the Laotian state which, in turn, is significantly influenced by the particular perspectives and concerns of both lowland elites and international development agencies. In that sense, the prevailing vision of ‘nature’ in the uplands reflects partly the power relations that structure the Laotian society. In turn, this vision calls for interventions aimed at transforming the social order.

Overall, this chapter has highlighted the way *selected* facts and simplistic models about land degradation can be used as arguments by powerful actors for promoting their social and environmental projects and, hence, the way actual environmental issues can become subordinate to broader debates on state and resource politics. At the same time, it raises important questions as regards the ‘local reality’ of the land degradation issue in the uplands of Laos and the consequences of ‘development’ intervention for local livelihoods and the environment. Based on empirical data from two upland villages of northern Laos, these are the main issues that will be approached in the following chapter.

## **Chapter 5. Local livelihoods and the environment**

In the previous chapter, it was argued that the upland areas and peoples of Laos have been attributed a particular role and importance within the land degradation discourse co-produced by the state and major international development agencies. Characterized by rich and fragile ecosystems, high poverty levels, a subsistence economy largely based on shifting cultivation and increasingly limited arable land resource due to relatively rapid population growth, the uplands are described as an ‘epicentre’ of land degradation in the country. More generally, positioned as the premise for the ‘chain of degradation’ narrative linking upland deforestation and soil erosion with downstream sedimentation, floods and droughts, upland degradation is believed to threaten the national economy. The previous chapter also described the way this particular position legitimates significant state intervention in upland management, undertaken through population resettlement, land zoning and land use regulation. In effect thus, through these various measures, a territorialisation process is currently occurring whereby the Laotian state strengthen its control over the uplands, redefine the upland space and modify upland uses.

A first set of questions that emerges from this observation relates to the dependability of the official discourse on land degradation. As discussed earlier (see Chapter 4, Section 4.1.2), there is an important lack of empirical evidence with regard to the exact level and causes of land degradation in Laos. Is land degradation really significant in the uplands? What is the exact role played by upland populations with regard to the assumed land degradation ‘issue’? From there, a second set of questions relates to the impacts of the official land degradation discourse – and the associated state territorialisation process – on upland livelihoods and environment. What is the effectiveness of current environmental policy in controlling upland degradation? What are the respective roles played by the actual land degradation processes and the state environmental discourse in driving livelihood change in the uplands?

Building on empirical evidence from two upland villages of northern Laos, these are the main questions that will be addressed in this chapter. Indeed, as was also argued in the previous chapter (see Section 4.1.1) and in contrast with the assessments on which Laos’ official environmental discourse is based, only an approach founded on local

empirical material can provide sufficient detail to deal with the complexity of the land degradation issue. Importantly, in an effort to avoid ‘orthodox’ explanations of land degradation, only such a local scale study allows a comprehensive integration of biophysical measurements with an approach to environmental perceptions and local adaptive livelihood change. In that sense, this chapter does not only reiterate the objective of Chapter 4 (i.e. to provide a critical and politically-informed perspective on environmental change in Laos). It also aims at testing the potentialities of the abovementioned ‘political ecology of livelihoods’ approach (see Chapter 1, Section 1.2 and Chapter 3, Section 3.3). The following discussion articulates thus ‘hybrid research’ and livelihood analysis in a ‘locally-grounded’ political ecological approach to the land degradation issue in Laos. The next section combines a biophysical assessment of soil erosion and a survey of local perceptions and ‘theories’ related to land degradation. It examines the way land degradation is experienced, defined and explained locally. The second section looks at recent livelihood trajectories in the two study villages. It draws a number of causal links between local livelihood change, environmental change and the wider political economy. The third section uses these empirical observations for questioning Laos’ mainstream environmental discourse and policy. Finally, the fourth section summarizes the findings and their implications in terms of conceptualizing socio-environmental interactions<sup>31</sup>.

### **5.1. Local environmental change in Ban Lak Sip**

The approach to understanding local environmental change remains essentially focused on the case of Ban Lak Sip where MSEC was conducting its biophysical experiments. It involves both the monitoring of quantitative, ‘scientific’ indicators of land degradation and the collection of more qualitative insights from local land managers. As described earlier (see Chapter 2, Section 2.2.1), most of the studies related to local soil knowledge overlook local ‘theories’ on soil formation and land degradation processes and, instead, focus exclusively on comparisons between local and scientific soil classifications. Rather than being aimed at questioning scientific knowledge on the basis of local perceptions and representations, the rationale for these studies is thus to provide ways to

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<sup>31</sup> Some of the material presented in this chapter (mainly in Sections 5.1 and 5.2) has been published in a journal article (Lestrelin and Giordano 2007). Although the work is jointly authored, responsibility for data collection and analysis lies entirely with the author of this PhD thesis.

translate mainstream discourses and strategies into concepts understandable by local populations. While commendable, the few attempts made to capture local soil knowledge in Laos reflect clearly this situation. Local soil classifications are presented as an ideal vehicle for a ‘top-down fashion’ agricultural development. In particular, they are described as an essential instrument for facilitating agricultural extension and technology transfer, from the national and international development agencies to the local populations (e.g. Douangsavanh *et al.* 2006; Saito *et al.* 2006).

In contrast to these studies, by attempting to gain insights into local perceptions of land degradation processes and issues, a main objective of the present ‘hybrid’ approach is to test the ‘local reality’ of Laos’ official discourse on land degradation. From there, comparing governmental and international development agencies’ viewpoints with both scientific evidence and upland populations’ experience of local land degradation can also illuminate the power relations embedded in Laotian environmental policy. Theoretically and methodologically, the research process presented in this section is clearly in line with local case studies of the social construction of environmental issues as found for instance in Batterbury *et al.* (1997), Forsyth (1996), Schmidt-Vogt (1998) and Warren *et al.* (2001). Hence, directly linked to the first research theme developed in this study (see Chapter 3, Section 3.3.2), the analysis accounts for the ‘politicization’ of nature, that is, the ways actors’ representations, discourses and actual experience of environmental change reflect in part their political relations and strategies (see also Chapter 3, Section 3.1.1).

#### 5.1.1. *Biophysical measurements*

In an effort to measure land degradation in Ban Lak Sip, a survey of linear soil erosion in the village’s sixty seven-hectare Houay Pano watershed was undertaken by MSEC between 2001 and 2003. The survey consisted of rill and gully counts, measurement of their length and assessment of their volumetric evolution in the rainy season (Chaplot *et al.* 2005a). Fourteen rills and gullies were observed during the first year of survey, twenty-five during the second year and thirteen during the last year. Most of the rills appeared in annual cultivation fields during aggressive rainfall events and stretched from mid-slope to down-slope positions (Photo 5.1). While a few expanded and deepened gradually over the three years to form gullies, sometimes exposing bare rock



on the surface, most of them, filled in with branches and vegetable debris by farmers or left under fallow, disappeared after one year.

*Photo 5.1: Linear erosion features on Ban Lak Sip land, July 2002*



For the entire watershed, linear erosion features were estimated to have resulted in annual soil losses of 2.4 tons per hectare in 2001, 1.5 tons per hectare in 2002 and only 0.1 ton per hectare in 2003 (Table 5.1). At the sub-catchment level, a significant correlation between linear erosion and spatial extent of annual cultivation was found during the first two years of survey. However, this correlation was contradicted by the final year's measurements. Between 2002 and 2003, with similar annual and monthly rainfall amounts and comparable proportions of land covered by annual crops (not only for the watershed as a whole but also within its nine sub-catchments), linear erosion decreased rather substantially. These results illustrate the preponderant role played by rainfall intensity in triggering linear erosion. In fact, the positive correlation between annual crops' extent and rill formation exists only when rainfall events reach a particular intensity threshold and, in this regard, 2003 experienced constant, low intensity rainfalls throughout the year.

Between 2001 and 2005, comparable erosion rates were found by the measurement of sediment yields – suspended sediment and bed load – in concrete weirs at the outlet of eight nested sub-catchments making up the Houay Pano watershed. In the largest equipped sub-catchment, which represents 59.3 hectares or 90 percent of the total surface of the Houay Pano watershed, total eroded sediment yields per hectare were 3.4 tons in 2001, 6.8 tons in 2002, 2.0 tons in 2003, 4.7 tons in 2004 and 0.7 tons in 2005 (Table 5.1). On this basis, Sengtaheuanghoung *et al.* (2006) investigated the relations between soil losses and various environmental factors (e.g. annual rainfall, mean slope, soil structure, soil depth, land use distribution) monitored over the five years between 2001 and 2005 in the eight nested sub-catchments making up the Houay Pano watershed. Annual and monthly rainfall amounts did not appear to have a significant influence on sediment yields. However, in contrast to linear erosion, statistical analysis showed a clear correlation between sediment yields and land use, independently of rainfall intensity. In particular, the areal extent of the annual crops in the sub-catchments appears as the best predictor for soil erosion.

Table 5.1: Annual rainfall, linear erosion and annual crops distribution in the Houay Pano watershed, sediment yields in the Houay Pano sub-catchment No. 4, 2001-2005<sup>32</sup>.

Year	AR (mm)	Linear erosion (tons/hectare/year)	Sediment yields (tons/hectare/year)			Annual crops (% of the total surface)
			Total	BL	SL	
2001	1774	2.3	3.36	1.46	1.89	9.6 %
2002	1221	1.4	6.83	1.88	4.95	40.4 %
2003	1308	0.1	2.03	0.19	1.83	31.5 %
2004	1383	n/a	4.67	0.87	3.80	32.1 %
2005	1377	n/a	0.74	0.08	0.66	14.7 %

Source: Sengtaheuanghoung *et al.* (2006).

Overall, the information collected by MSEC confirms the existence of one of the causal links described in the ‘chain of degradation’ narrative (see Chapter 4, Section 4.1.2). Agriculture – shifting cultivation in this case – contributes certainly to affect sediment discharge at the outlet of upland catchments. However, the soil erosion rates measured

<sup>32</sup> AR, annual rainfall; BL, bed load; SL, suspended load.

by MSEC do not appear as critical as suggested in the official environmental discourse. Looking at other studies, they may be considered alternately low or average – depending on the places of comparison and data collection methods (e.g. Douglas 1999; Gafur *et al.* 2003; Pimentel and Kounang 1998). In any case, debating the position of the Houay Pano catchment along a ‘universal’ scale of erosion rates – assuming that the latter is possible – would probably not add much to our understanding of the local significance of soil erosion. Due to their limited temporal extent, the biophysical measurements provide limited information on long-term environmental change in the watershed. Indeed, even if soil erosion appears positively correlated with annual cultivation, does this mean that the land is undergoing significant degradation or are we simply observing a cycle whereby land is degraded during a period of extensive cultivation and later regenerated by a period of extensive fallow? In this regard, the observations of local populations can provide essential information.

#### *5.1.2. Local perceptions and ‘theories’ on land degradation*

Information on local perceptions of and theories on land degradation was collected in Ban Lak Sip over a 3-year period (2004-2006) through two questionnaire surveys, seven group discussions and several unstructured interviews. All the information aggregated indicates that a majority of villagers believe that: (1) the village land has been following a degradation trajectory over the past forty years, (2) soil erosion has increased over the past fifteen years, (3) soil fertility and annual crop yields have declined during the same period of time, and (4), if the soil losses have played a role, the prime factor for the latter degradation process has been a shortening of fallow periods.

In the first questionnaire survey carried out in March 2004 among 16 of the 27 farmers working in the Houay Pano watershed, 87 percent answered that erosion had generally increased on their fields. While the questionnaire did not include an investigation of the links made by farmers between soil erosion and agricultural yields, 85 percent of the interviewees also reported that their yields had declined over the previous fifteen years. In order to get more detailed information, group discussions were organized in July-August 2004 and December 2006, involving three or four key informants selected among the farmers working in the Houay Pano watershed on each occasion. Discussions focused on the identification of the local indicators, factors and impacts of soil erosion.

According to the farmers interviewed during the first series of discussions, an ‘ideal’ upland field is chosen in accordance with the following criteria: gentle slope, covered by dense and green vegetation, and moist and black soils. By contrast, they consider the red colour of the soil surface, the development of gullies, the presence of stones and particular weed species (e.g. *Erigeron sumatrensis*, *Microstegium ciliatum*, *Thysanoleana maxima*) as the main indicators of eroded lands in the village. Using pictures of the watershed, the second series of group discussions gave comparable results. The farmers identified the density and colour of the crops, the presence of stones on the soil surface, the presence of rills and/or gullies, and the colour of the topsoil as main indicators for determining the soil erosion level of a plot (Table 5.2).

*Table 5.2: Main indicators of soil erosion identified and sorted by order of importance by the farmers of Ban Lak Sip interviewed during two series of group discussions<sup>33</sup>.*

Rank	1 <sup>st</sup> series (July/August 2004)	2 <sup>nd</sup> series (December 2006)
1	Colour of the topsoil	Crop cover (density and colour)
2	Gullies	Surfacing stones (presence)
3	Surfacing stones (size)	Gullies, rills and landslides
4	Weed species	Colour of the topsoil
5	Rills	Weed species
6	Vegetation cover (density)	Surfacing roots of crop
7	Landslides	-
8	Weed density	-

With regard to the causes and consequences of soil erosion, farmers identified and sorted by order of importance: intense rainfall events, long history of agricultural rotations, annual cultivation on steep slopes and high elevation areas, and short fallow periods as the main factors for high soil erosion rates. Decreasing yields – due to impoverished soils and land lost to gullies – and increasing workload – due to the appearance of hardier weeds and, to a lesser extent, the time spent filling rills – were then identified by farmers as the main adverse impacts of soil erosion on their farming activities. In fact, reconstruction of upland rice yields and annual cultivation workloads (based on data extracted from the questionnaire survey on livelihoods, see Chapter 2, Section 2.2.1) shows a notable decline of the former since 1990 and a significant

<sup>33</sup> The actual ranking has been calculated by summing the relative weight given by the groups interviewed to each indicator.

increase of the latter after 1995 (Figure 5.1). At the same time, fallow periods have declined by almost two third since 1970 and cropping periods (number of years a field is cropped before being fallowed) have nearly doubled since 1995 (Figure 5.2).

Figure 5.1: Ban Lak Sip, annual cultivation average work time (days), number of workers (persons) and upland rice yield (tons), per hectare and per year, 1990-2003.

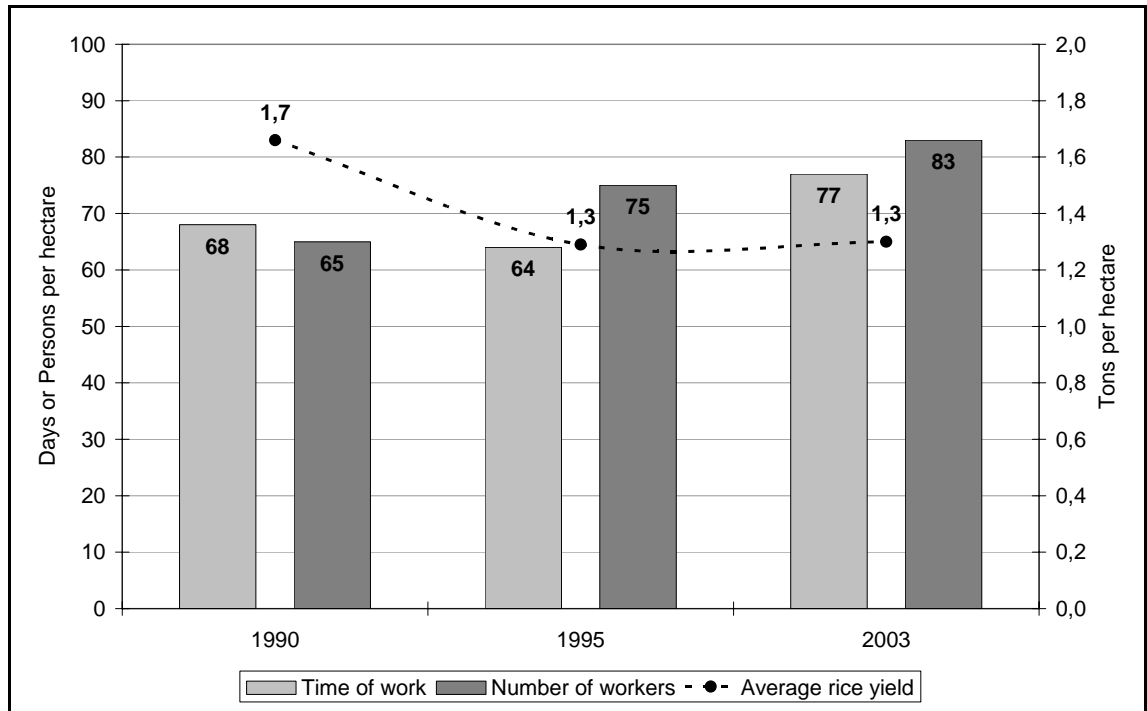
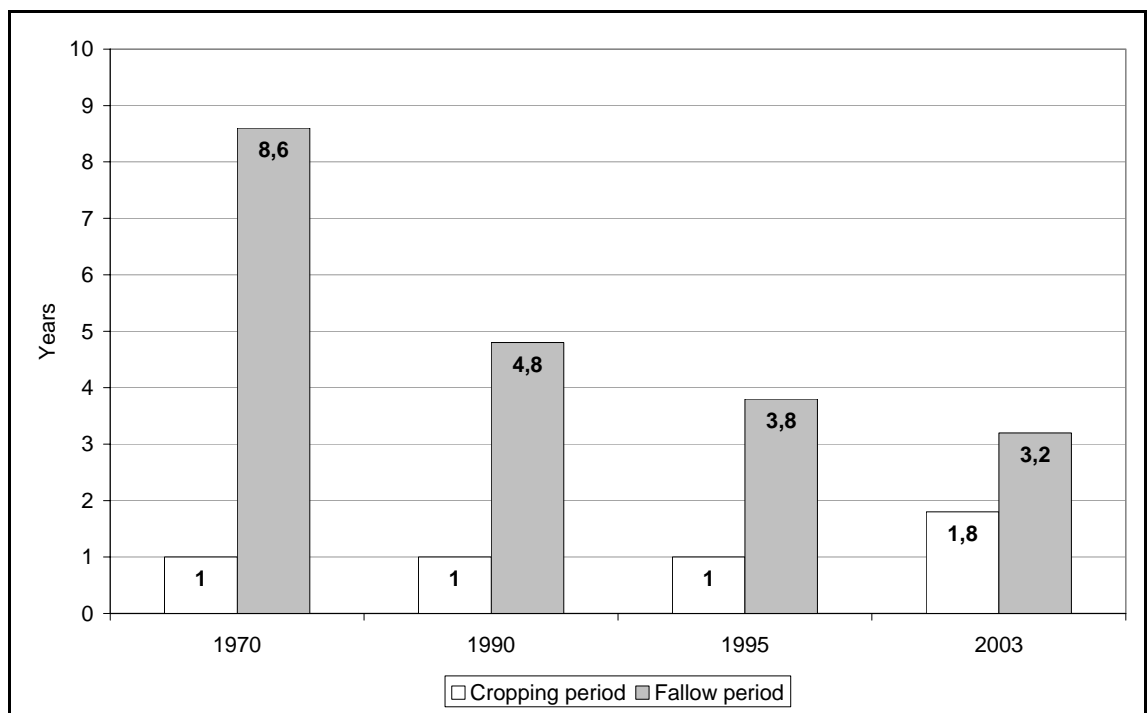


Figure 5.2: Ban Lak Sip, average fallow and cropping periods for the fields under annual crops, 1970-2003.



The second questionnaire survey undertaken in Ban Lak Sip in November 2005 reiterated the set of questions used during the 2004 survey but included an investigation of the causal links perceived by the villagers. Two direct linkages emerged clearly: one between increased rainfall intensities and soil erosion and the other between shortened fallow periods, decreasing soil fertility and declining yields (Figure 5.3). Out of 31 individuals interviewed on the evolution of soil erosion in the entire village land, 52 percent reported increased erosion. This change was attributed primarily to more intense rainfall (62 percent of the interviewees), short fallow periods (18 percent of the interviewees) and increased frequency of weeding (12 percent of the interviewees). Again, a large majority of the villagers interviewed (94 percent) reported a decrease in soil fertility essentially reflected in declining agricultural yields. However, soil erosion was not identified as a major driving force for the latter degradation process. In fact, among the 29 farmers who reported decreasing yields, 23 mentioned short fallow periods as the main proximate cause, while soil erosion was cited only once. More generally, while the short fallow periods were considered as a significant livelihood issue by 16 percent of the villagers interviewed, soil erosion appeared clearly as a secondary issue (see Appendix, Table A6).

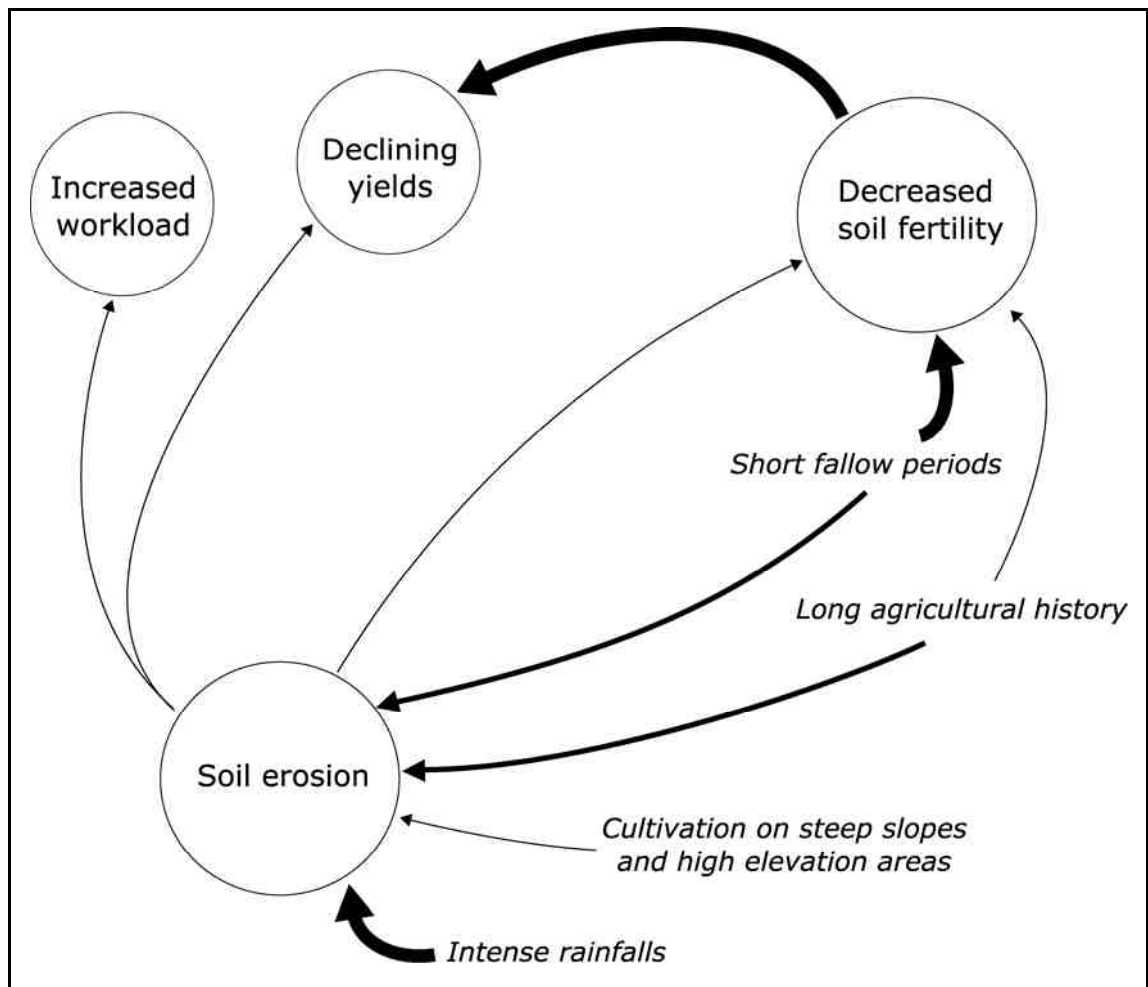
Thus, as perceived by the farmers of Ban Lak Sip, soil erosion is neither the only nor the primary factor of land degradation. In fact, while the group discussions showed that farmers consider soil erosion as having a negative impact on agricultural productivity, the results of the second questionnaire survey suggest that the vegetation cover – that will be cut, burned and constitutes a significant part of the substratum for the crops – is considered more crucial for agricultural yields. As the following quote illustrates, such a perceived link between fallow vegetation, soil/land fertility and crop yields appeared explicitly in a number of interviews:

“Compared with ten years ago, the current yields for annual crops are much lower. The products are good but the production is low. If the fallow vegetation is not dense enough and if the trees are too small, then the fertility of the fields will be low” (Mr. Lae, 33, Ban Lak Sip, November 2005)<sup>34</sup>.

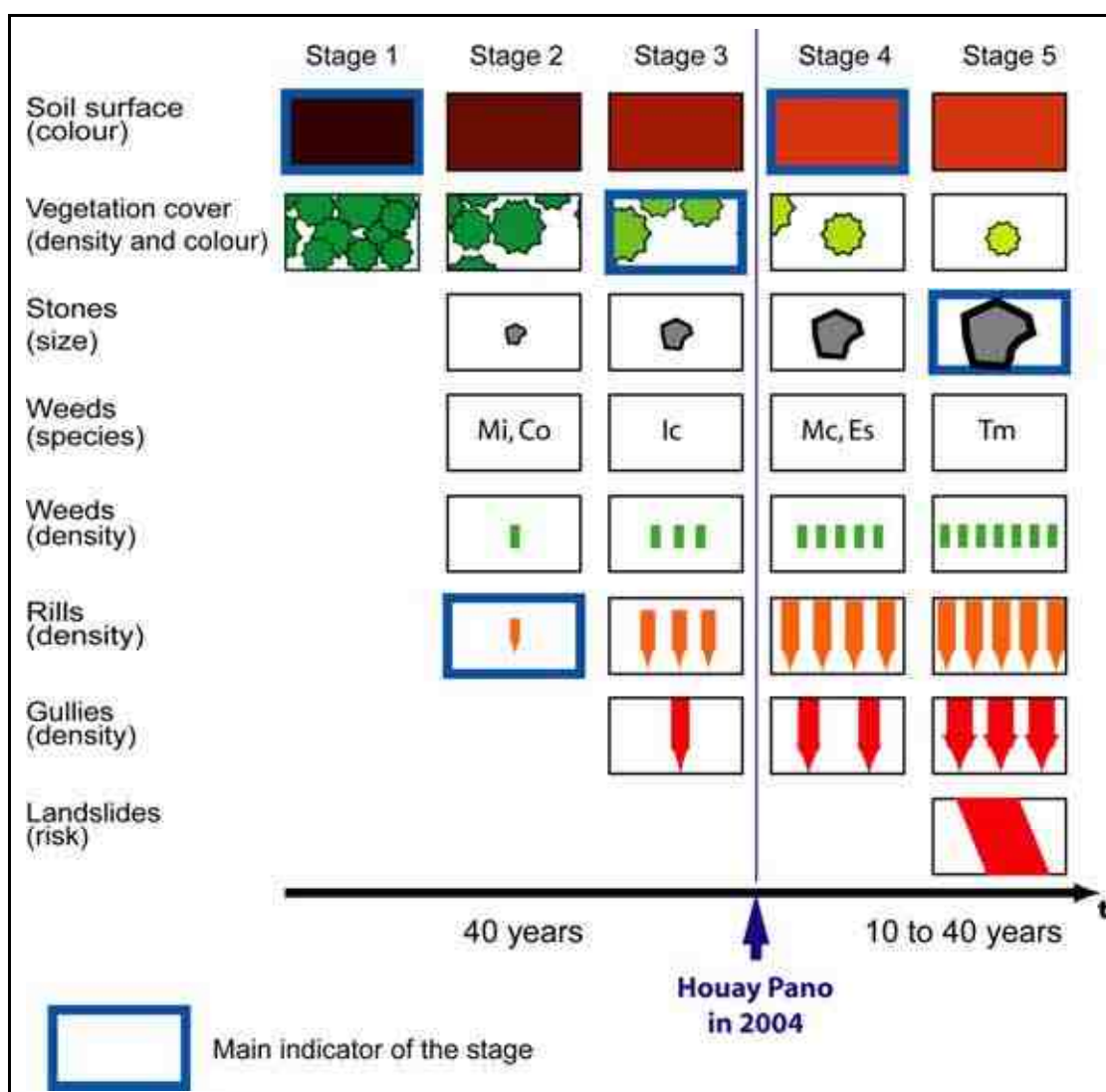
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<sup>34</sup> For the purpose of preserving the anonymity of the villagers, all the names quoted are *noms de plume*.

Figure 5.3: Land degradation-related causal links perceived by the farmers in Ban Lak Sip.



Group discussions also focused on the definition of different stages of land degradation representative of the past, present and future of the watershed. The farmers defined five successive stages ranging from brown soils, dense-green crop cover and no noxious weeds to red-orangey soils, sparse-yellow crop cover, surfacing stones, and high densities of hardy weeds and gullies (Figure 5.4). Once this last stage is reached, the fields, unproductive, must be abandoned. Accordingly, the interviewees reconstructed the history and predicted the evolution of the Houay Pano watershed, showing a continuous degradation trend that, without land use change, would lead to the impossibility of cultivating upland annual crops in ten to forty years' time. For instance, one of the farmers interviewed in 2004 estimated that, with the current land use cycles practised in the village (i.e. on average, a three-year fallow period followed by two years of annual cropping), his field located in the Houay Pano watershed would reach the last degradation stage at the end of the next cultivation cycle, that is, in six years.

Figure 5.4: Perceived stages of land degradation in the Houay Pano catchment<sup>35</sup>.

Source: adapted from Pelletreau (2004).

### 5.1.3. Measurements, local 'theories' and the official discourse

Thus, according to Ban Lak Sip villagers, village lands are on a continuous degradation trajectory characterized by two main dynamics: the soil erosion rates have increased over the past fifteen years and the upland fields are progressively rendered unproductive. With regard to the first perceived trend, the results of the biophysical measurements do not exactly confirm a general increase of the soil erosion rates. Indeed, both linear erosion rates and sediment yields appear to vary importantly from one year to another without a clear trend over the five years of the survey. This

<sup>35</sup> Mi, *Mimosa invisa*; Co, *Chromolaena odorata*; Ic, *Imperata cylindrica*; Mc, *Microstegium ciliatum*; Es, *Erigeron sumatrensis*; Tm, *Thysanoleana maxima*.



mismatch should certainly not be considered as discrediting local knowledge. First, the time scale of the biophysical records and the one corresponding to the villagers' perceptions are different. Five years of biophysical measurements might not be sufficient to identify the environmental dynamics that local populations have been observing and experiencing for several decades. Second, what the local perceptions may translate is the importance of the soil transfers which occur within the watershed, from the cultivated slopes to sedimentation areas located downslope. As shown by experimentations undertaken in the Houay Pano watershed, be that through water or tillage erosion, the quantity of soil that is displaced from the upper part to the bottom of the slopes can be very significant, yet with a minor impact on sediment yields at the outlet of the watershed (Chaplot *et al.* 2005b; Dupin *et al.* 2002).

The second environmental trend perceived by the Ban Lak Sip villagers cannot be directly addressed by the scientific experiments undertaken in Houay Pano since the measurements available provide no clear indications on the cumulative impacts of soil erosion on land fertility. Looking at the sediment yields recorded at the outlet of the Houay Pano catchment over the past five years, it is clear that soil has been translocated from the watershed to downstream areas. What is not clear is whether – as the ‘chain of degradation’ and upland ‘downward spiral’ narratives suggest (see Chapter 4, Sections 4.1.2 and 4.1.3) – this process has actually constituted a primary driver for soil fertility reduction in the catchment. This point can be clarified by considering an important causal linkage perceived by the villagers interviewed, that is, the preponderant role played by shortened fallow periods in the decrease of soil fertility and the associated decline of annual crop yields. Indeed, in slash-and-burn shifting cultivation systems practised on relatively poor soils such as those observed by Roder *et al.* (1995, 1997b) in the early 1990s, only a minor part of the soil fertility decline can be attributed to soil erosion<sup>36</sup>. What matters primarily is the vegetation regrowth that occurs during the fallow period. With the degradation of the litter, this regrowth plays an essential role in the production of soil organic carbon which, in turn, is crucial for maintaining the physical, biological and chemical properties of the soil. Furthermore, once slashed and burned, the fallow biomass provides a stock of nutrients easily assimilated by the crops.

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<sup>36</sup> It has to be noted however that, with the rapid evolution of agricultural practices and, in particular, more frequent hand tillage, the removal of soil organic matter by soil erosion has probably increased compared to the time Roder was doing his fieldwork in northern Laos.

Finally, if its duration is longer than the dormancy period of the weed seeds present in the soil, the fallow period also plays a significant role in limiting weed germination and potential competition with the crops (de Rouw 1995; Roder *et al.* 1997a). By and large thus, even if the relationship between fallow length, soil fertility and crop yield is neither simple nor linear (Ickowitz 2006; Mertz 2002), the fallow period appears more significant than soil erosion in determining the agricultural productivity of an area under shifting cultivation.

Attempting to place the present case study within Laos' land degradation 'issue' as defined by governmental and international development agencies leads to two main observations. Overall, the official perspective appears to be locally relevant as regards the role played by shifting cultivation. In Ban Lak Sip, both biophysical measurements and local perceptions point towards this practice as a main proximate cause for land degradation. As discussed earlier, significant statistical correlation was found between the areal extent of annual crops and the sediment yields recorded at the outlet of the eight Houay Pano sub-catchments. Local 'theories' are consistent with this result since, for a large majority of the farmers interviewed, the main factors explaining land degradation in the village are all related to annual, shifting cultivation (i.e. short fallow periods, long history of agricultural rotations and annual cropping on steep slopes and high elevation areas).

However, in contrast with the 'chain of degradation' and 'downward spiral' narratives, the case study suggests that soil erosion is not necessarily a critical land degradation process. In Ban Lak Sip, the sediment yields recorded over a 5-year period at the outlet of the Houay Pano catchment do not appear critical. They can even be considered low when compared to similar studies in the uplands of northern Thailand (e.g. Douglas 1999). Besides, villagers' perceptions suggest that, rather than to soil erosion, the local land degradation issue is more related to the negative impacts that shortened fallow periods have on soil fertility and, from there, on annual crop yields. In fact, soil erosion contributes to this issue only as a secondary factor and it is likely that, in conditions where long fallow periods are practised, the erosion of soil organic matter would be compensated by the degradation of the litter and associated soil regeneration. These observations put into question the critical role often attributed to upland agriculture in fuelling an upstream-downstream 'chain of degradation'. In fact, studies in Nepal (Ives

2004) and northern Thailand (Forsyth 2007) draw similar conclusions as regards the excessive emphasis put on the upland soil erosion issue in the political agenda of these countries. Instead, they suggest that the real issue for the uplands lies in a general lack of productive land.

In summary, the totality of available evidence – i.e. biophysical measures, perceptions of a majority of villagers and reconstruction of local environmental change – indicates a troubling land degradation trajectory in Ban Lak Sip. With regard to the main proximate cause for land degradation in the village, both the biophysical approach and the farmers' observations point towards annual cultivation practices and, hence, are in line with mainstream environmental assessments. However, in contradiction with the conventional wisdom put forward by the Laotian authorities and several international development agencies, the land degradation trajectory appears more related to soil exhaustion than to erosion. In any case, as will be discussed in the following section, the picture should not mask the capability of local actors to adapt their livelihoods in order to control, or even avoid, land degradation. Indeed, as the interviews also suggest, the villagers are well aware of the negative impacts of land degradation on their farming activities and their knowledge of the factors and processes involved is remarkably detailed.

## **5.2. Livelihood change**

### *5.2.1. Adaptation to land degradation*

As described by Batterbury and Forsyth, “environmental adaptations include measures such as technological innovations, changes in land-use practices, and economic diversification that reduce the impacts that local people have on their land and other natural resources” (1999: 6). To date, few studies have focused specifically on such adaptive change in the uplands of Laos. Some examples can however be found which suggest a broad socio-environmental transition ‘model’ where land degradation plays a significant role (Shoemaker *et al.* 2001; see also Bouahom *et al.* 2004; Rigg 2006a). In this ‘model’, declining agricultural yields and productivity – caused by shortened fallow periods – drive upland households to use more intensively forest and river resources (e.g. NTFP gathering, fishing, hunting, timber exploitation). As local natural resources become increasingly degraded and limited, households develop non-farm activities

and/or turn to *ex situ* income-generating activities. The result of this transition is a general diversification of the upland economy (at least when considered at the village scale). While the starting point for this socio-environmental transition model appears to be quite similar with the one described in the official ‘downward spiral’ narrative (see Chapter 4, Section 4.1.3), the outcomes of the two models differ significantly. While the first transition model suggests that upland populations adapt effectively to environmental degradation by diversifying and delocalizing their livelihoods (two forms of adaptations that, as further discussed below, can contribute to limit human pressure on the environment), the ‘downward spiral’ model represents these populations as lacking the capabilities and/or opportunities to adapt to environmental degradation and, hence, as engaged in a desperate and unsustainable struggle for subsistence.

Looking at medium term change in the households’ mix of livelihood activities, Ban Lak Sip and Ban Done Kang<sup>37</sup> present a trajectory of diversification – as shown in Figure 5.5 and Figure 5.6 by the increasing number of activities in which an average household is involved – that is similar to the transition described by Shoemaker *et al.* (2001). In the two villages, livelihood diversification includes tree plantation, livestock farming, vegetable cultivation, and non-farm activities. The most marked changes have occurred between 1995 and 2003. During this period in Ban Lak Sip the proportion of households engaged in tree plantation has doubled while the levels of engagement in non-farm activities and livestock farming have recorded a fifty percent increase. Likewise, vegetable cultivation also expanded significantly after 1995. With an already high diversification level in 1990, the changes have been less pronounced in Ban Done Kang. In this village, after a slight decrease between 1990 and 1995, the households’ engagement in livestock farming doubled between 1995 and 2003. Similarly, after a period of stagnation, non-farm activities and vegetable cultivation have expanded since 1995. Finally, tree plantation, collecting and hunting have expanded gradually since 1990.

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<sup>37</sup> As suggested by interviewees (some of them quoted below) and survey data on agricultural yields and workload (see below, Figure 5.10), land degradation represents also a significant livelihood issue in Ban Done Kang. It is therefore worth reintegrating the village in this sub-section, even though it has not benefited of the same detailed approach to local environmental change than Ban Lak Sip.

Figure 5.5: Ban Lak Sip, household involvement in livelihood activities, 1990-2003<sup>38</sup>.

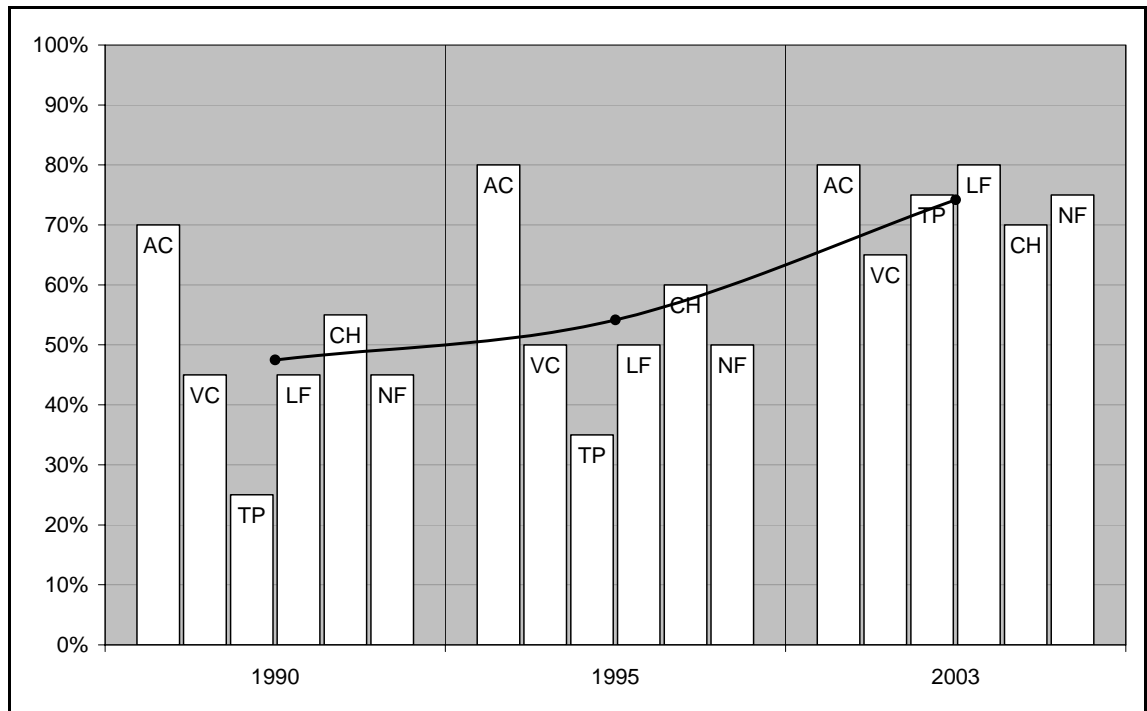
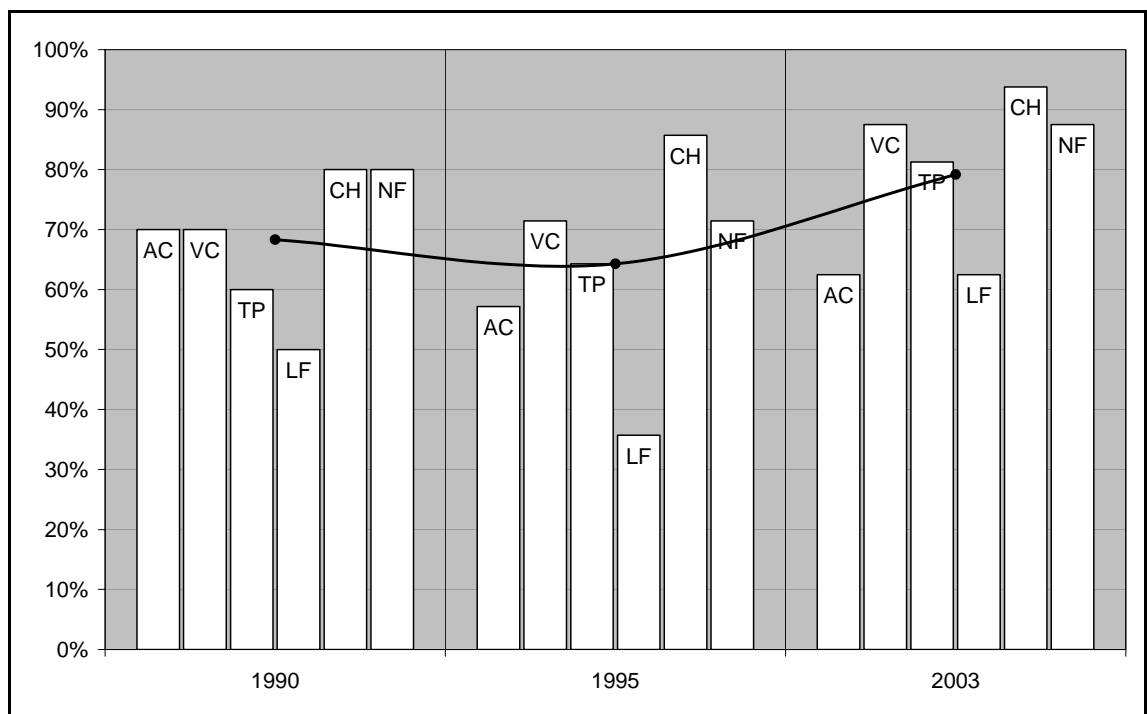


Figure 5.6: Ban Done Kang, household involvement in livelihood activities, 1990-2003<sup>38</sup>.



<sup>38</sup> AC, annual cultivation; VC, vegetable cultivation; TP, tree plantation; LF, livestock farming; CH, collecting and hunting; NF, non-farm activities.

At the same time that the villagers have diversified their production, they have also increased the amount of time spent on livelihood activities (Table 5.3). In Ban Lak Sip, the total work budget has increased by 50 percent during the entire survey period. Most of the increased labour usage has been devoted to vegetable cropping and non-farm activities. The latter were primarily linked to the adoption, between 1992 and 2003, of small-scale trading, craftwork and temporary factory labour by some households. In relative terms, the contribution of vegetable cropping activities to the annual work budget has almost doubled while that of annual cultivation has decreased significantly (Figure 5.7). In Ban Done Kang, labour intensification has been even more marked. Essentially related to an extensive engagement by village households in non-farm activities after 1995 (notably builders' labour in Luang Prabang as well as small-scale trading and craftwork in the village), the average household annual workload has almost tripled in 13 years. At the same time, the relative contribution of non-farm activities to the annual time of work of the village households has increased from 39 percent in 1990 to 75 percent in 2003 (Figure 5.8).

*Table 5.3: Average household time allocation (days per year) per livelihood activity, 1990-2003.*

		1990	1995	2003
<b>Ban Lak Sip</b>	Annual cultivation	46	55	55
	Vegetable cultivation	21	26	53
	Tree plantation	3	4	11
	Livestock farming	8	11	18
	Collecting and hunting	22	26	22
	Non-farm activities	55	73	86
	<b>Total</b>	<b>156</b>	<b>195</b>	<b>244</b>
<b>Ban Done Kang</b>	Annual cultivation	25	25	22
	Vegetable cultivation	16	14	18
	Tree plantation	14	19	25
	Livestock farming	8	7	4
	Collecting and hunting	31	31	39
	Non-farm activities	59	89	325
	<b>Total</b>	<b>152</b>	<b>185</b>	<b>434</b>

Figure 5.7: Ban Lak Sip, relative contribution of different livelihood activities to the annual time of work, 1990-2003.

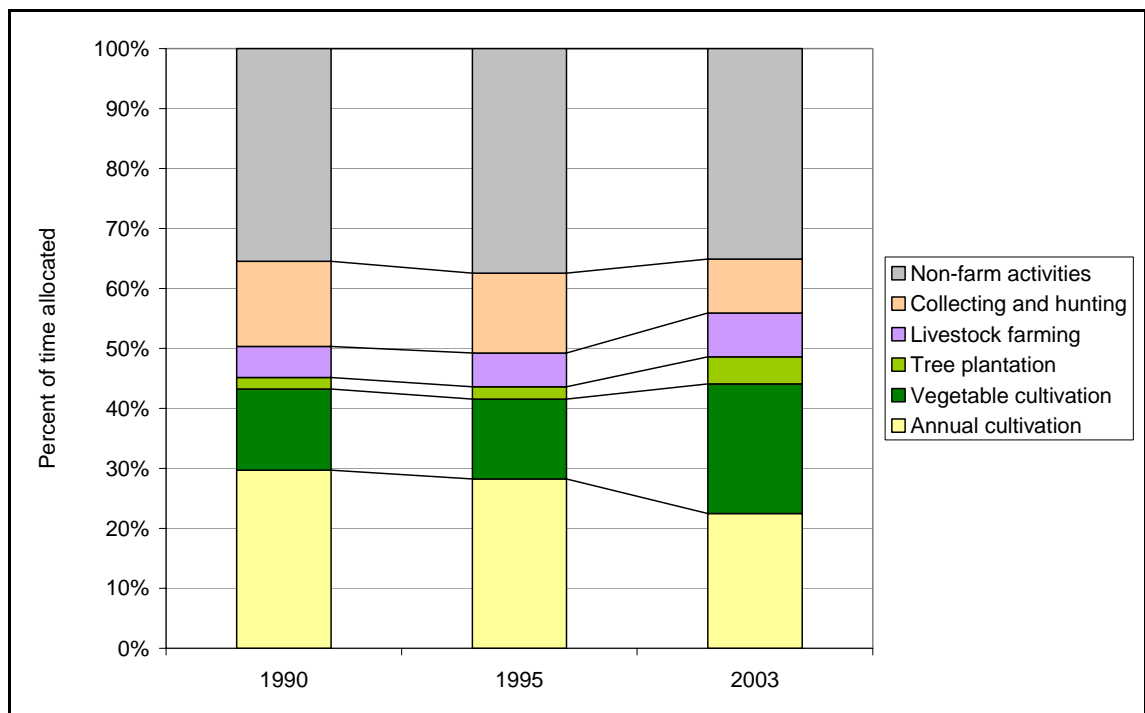
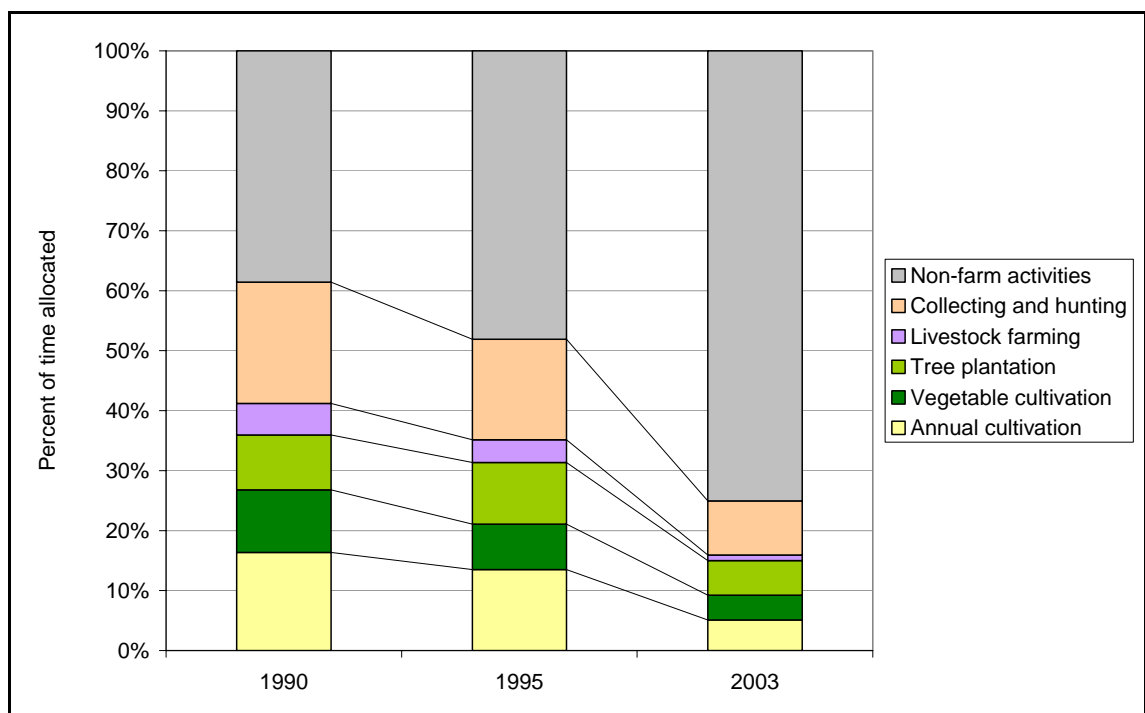


Figure 5.8: Ban Done Kang, relative contribution of different livelihood activities to the annual time of work, 1990-2003.



With regard to annual cultivation, the two villages also present similar dynamics. Just as for Ban Lak Sip (see Section 5.1.2, Figure 5.1 and Figure 5.2), land use for annual cultivation in Ban Done Kang has been strongly intensified through an acceleration of the agricultural rotations (Figure 5.9). At the same time, over the entire survey period, the workload required per hectare of annual crops has increased while crop yields have stagnated (Figure 5.10). However, the engagement of the villagers in annual cultivation is clearly different in the two villages. Over the past fifteen years, the proportion of households engaged in annual cultivation (about two thirds of the population) has stagnated in Ban Done Kang, while it has slightly increased in Ban Lak Sip to represent almost eighty percent of the village households (see Figure 5.5 and Figure 5.6). The two villages also present marked differences in terms of labour and land usage for annual cultivation. On average, Ban Lak Sip households allocate twice as much time as their Ban Done Kang neighbours to annual cultivation. Furthermore, while the surface area allocated by households to annual cultivation has slightly increased in Ban Lak Sip, Ban Done Kang households have followed an opposite path (see Table 5.4 and Table 5.5).

Figure 5.9: Ban Done Kang, average fallow and cropping periods for the fields under annual crops, 1980-2003.

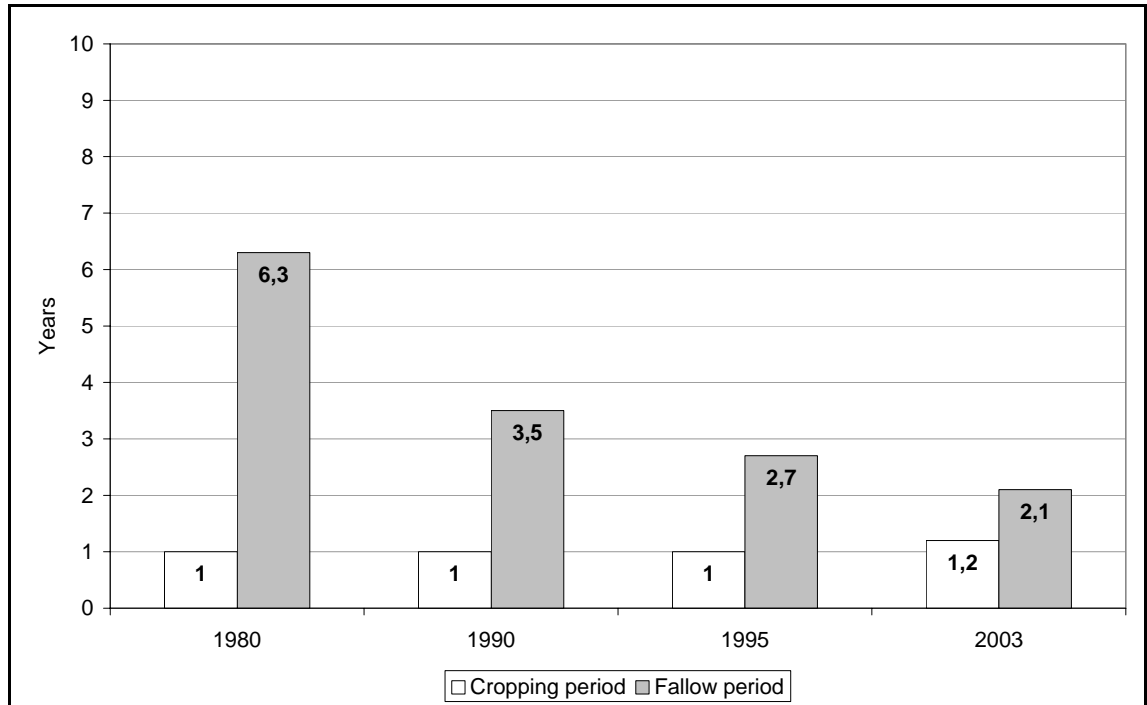




Figure 5.10: Ban Done Kang, annual cultivation average work time (days), number of workers (persons) and upland rice yield (tons), per hectare and per year, 1990-2003.

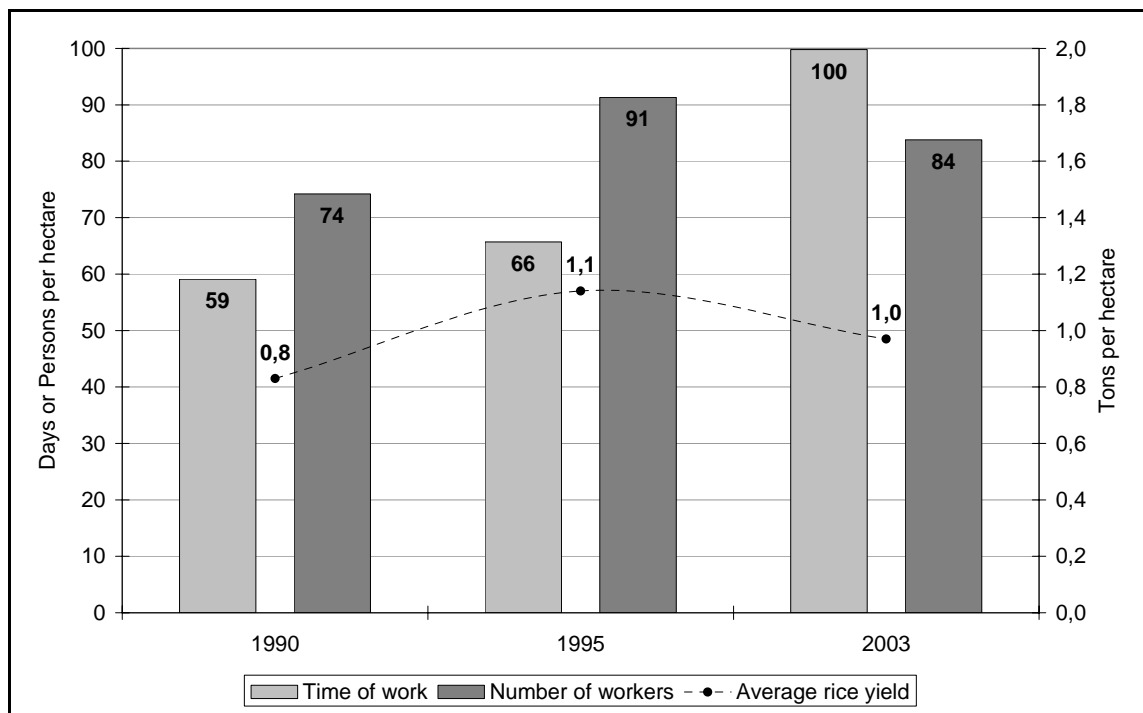


Table 5.4: Average area cultivated (hectares) per household, by crop, 1990-2003.

		1990	1995	2003
Ban Lak Sip	Annual crops	0.79	0.86	0.95
	Tree plantation	0.22	0.26	0.82
	Vegetable crops	0.07	0.06	0.17
Ban Done Kang	Annual crops	0.54	0.39	0.21
	Tree plantation	0.38	0.90	0.89
	Vegetable crops	0.03	0.03	0.02

In terms of land use, one of the most notable changes relates to the significant expansion of tree plantations in the two villages. As shown by Table 5.4, this expansion first occurred in Ban Done Kang between 1990 and 1995, and later in Ban Lak Sip between 1995 and 2003. In the second village for instance, tree plantations nearly quadrupled in extent and now occupy nearly as much area as the annual crops. In the same village, vegetable cropping has shown a percentage increase almost as great, though from a much smaller base. Along with this agricultural expansion, Ban Lak Sip is characterized by a relative reorientation in the location of on-farm activities. Over the entire period surveyed, annual and vegetable cropping has expanded mainly in the flattest parts of the landscape while plantation agriculture has expanded across all elevations (see Table 5.5).

By and large, the extent of the changes observed suggests that the villagers of Ban Lak Sip and Ban Done Kang have employed considerable energy and resources in reworking their livelihoods. Some farmers, by devoting additional labour to annual cultivation – primarily to support an increase in weeding and tillage operations<sup>39</sup> – and cultivating larger areas, have simply attempted to stabilize agricultural yields and maintain agricultural production. Yet, it is likely that the land degradation issue has remained significant for these villagers. Engaging more radical changes, other villagers have adopted full-time non-farm occupations and successfully untied their livelihoods from land-related constraints.

*Table 5.5: Relative distribution of crop and plantation area (percent of total area cropped) by elevation class in Ban Lak Sip, 1990-2003.*

		1990	1995	2003
<b>Annual crops</b>	Low elevation, gentle slope			
	Medium elevation, gentle slope			
	Medium elevation, steep slope			
	High elevation, gentle slope	21.4%	24.6%	29.6%
	High elevation, steep slope	78.5%	75.4%	70.4%
<b>Tree plantation</b>	Low elevation, gentle slope			0.8%
	Medium elevation, gentle slope	4.8%	19.8%	22.1%
	Medium elevation, steep slope	4.6%	3.9%	19.5%
	High elevation, gentle slope			12.2%
	High elevation, steep slope	90.6%	76.3%	45.4%
<b>Vegetable crops</b>	Low elevation, gentle slope	1.5%	3.9%	14.5%
	Medium elevation, gentle slope	4.8%	10.0%	11.2%
	Medium elevation, steep slope			0.2%
	High elevation, gentle slope	85.2%	74.4%	68.0%
	High elevation, steep slope	7.4%	11.1%	5.9%

At the same time, many farmers of Ban Lak Sip have started to cultivate annual and vegetable crops in flatter parts of the landscape, which, as observed by Forsyth (1996) in Northern Thailand, can be seen as an adaptive change related to farmers' perception of higher erosion risks on steep slopes. By cultivating flat areas, farmers take advantage

<sup>39</sup> While the increase in the absolute number of weeding and tillage operations was minimal, farmers reported during group discussions that the additional time spent on each operation was responsible for most of the reported intensification in labour used for annual cropping.

of the sediments eroded from the slopes. Finally, in the two villages, the major expansion of tree plantations, notably teak, may also be seen as a combined effort to both develop alternatives to annual cultivation and control soil erosion by maintaining land cover on the slopes. However, while many farmers confirmed the first explanation during the interviews, teak plantation was never cited as a way to control erosion. This is consistent with the findings of various scholars who suggest that soil erosion may actually be increased under teak, primarily through splash erosion amplified by the concentration of raindrops on large leaves and the absence of undergrowth (e.g. Bruijnzeel 2004; Calder 2001). In fact, as reported by farmers, the plantation of teak in upland fields is often the main option chosen when the land is too degraded and annual cropping has become unprofitable. Thus, by diversifying their activities, adopting non-farm occupations and spending more time on alternatives to annual cropping such as livestock farming, tree plantation or vegetable cultivation, a majority of villagers have indirectly reduced the limiting effects of declining annual crop yields on their livelihoods. The two quotes below illustrate this point:

“It has been seven months since I opened my grocery shop. My parents helped me with their savings. I don’t want to work in the fields anymore because there are no prospects for the young farmers. The declining yields make farming unprofitable for the time you have to spend. Selling is more interesting” (Ms. Viengkham, 20, Ban Lak Sip, July 2004).

“Before, the village land was covered by forests which gave good yields for the crops. But now, there are only young fallows and poor soil which give low yields. When villagers don’t produce enough rice, they don’t have anything to eat. So, I think that people should replace upland fields by vegetable gardens. Livestock farming is also a solution. Before, I used to spend a lot of money to hire some workers for cultivating my upland fields. Often, I couldn’t produce enough rice for the year. Now that I cultivate more vegetables and raise more livestock, by selling my production, I can buy enough rice” (Mr. Bounlong, 50, Ban Lak Sip, July 2004).

Whether or not land use change and livelihood diversification, such as observed in the two study villages, contribute ultimately to limit environmental degradation remains a complex matter. A number of case studies in the uplands of Laos and Thailand suggest

that diversification is likely to relieve pressure on local natural resources. A study of three upland villages in Huaphan province of Laos shows that, despite significant land shortage reflected in shortened fallow periods, the farmers have been able to maintain very low deforestation rates (1 percent per year over a ten year period) by diversifying their livelihoods (Seidenberg *et al.* 2003). The description made of livelihood change in these villages presents many similarities with our two case studies (i.e. establishment of vegetable gardens, fruit orchards and fish ponds, intensification of NTFP collection, development of livestock farming and non-farm activities).

With a more specific focus on soil erosion, two studies conducted in the neighbouring uplands of northern Thailand have described local development trajectories that are also comparable to what is happening in Ban Lak Sip and Ban Done Kang. Research conducted by Forsyth (1996) in a Yao village in Chiang Rai province showed that farmers responded to soil erosion by limiting annual cultivation on the steepest slopes, keeping gullies vegetated and/or planted, and engaging in non-farm occupations for diversifying their income sources. Yet, similarly to Ban Lak Sip, a majority of farmers reported that, despite their efforts at controlling erosion, soil fertility was still declining because of over-cultivation and soil nutrient exhaustion. Another study conducted by Turkelboom (1999) in an Akha village in Chiang Rai province described other adaptations. In this village, along with techniques for limiting soil erosion (e.g. mulching, diversion channels), farmers had also developed tree plantations on the slopes as an economic alternative to annual cultivation. More generally, a number of studies in different contexts have described comparable development trajectories where a combination of land conservation measures and new economic activities are developed/adopted by populations and contribute to reduce environmental degradation and/or limit the impact of degradation on local livelihoods (e.g. Mazzucato and Niemeijer 2001; Mortimore and Adams 1999; Tiffen *et al.* 1994).

The cases of Ban Lak Sip and Ban Done Kang, as well as the various studies above, illustrate the importance for political ecology approaches and, indeed, for any approach to socio-environmental interactions to replace land management and land use practices into the wider assemblage of activities that makes up people's livelihoods (see Chapter 1, Section 1.2). Quite often, adaptations to land degradation do not only involve changes in land use. They also entail broader re-compositions and readjustments of the

livelihood systems. Hence, approached with a broader livelihood perspective, the two study villages do not exactly fit the official ‘downward spiral’ narrative (see Chapter 4, Section 4.1.3). For a majority of villagers, there seems to be a common cause which is that upland annual cultivation – the main perceived cause of land degradation – should be replaced, or at least complemented, by less labour-consuming and/or more profitable activities. At present, thus, rather than being trapped into increasingly unproductive and unsustainable livelihoods, the villagers of Ban Lak Sip and Ban Done Kang are spontaneously testing many different strategies which, ultimately, contribute to reduce their reliance on, and relative engagement in, annual cultivation.

However, while the livelihood transition observed has probably contributed to the control of a main factor identified by farmers as contributing to land degradation, namely annual cultivation on steep slopes and high-elevation areas, a closer inspection of the farming systems’ change reveals that the adaptation process has been constrained to some extent. For instance, in Ban Lak Sip, annual and vegetable cropping activities have not been relocated from steep slopes to flat areas. Rather, the change was an increase in the total cultivated area towards the flat areas. In addition, as evidenced by shortened fallow periods and lengthened cropping periods, the two villages have undergone a significant intensification of land use for annual cultivation, thus going against local knowledge regarding the role of agricultural rotations and fallows in controlling soil erosion. Such obvious contradictions between knowledge and practices suggest that additional factors were also at play in shaping livelihood change. In order to further the analysis, the next sections of the chapter follow the suggestion of both early political ecology studies and the ‘Sustainable Livelihoods’ framework that explanations for local livelihood and land use change should also be sought in the wider institutional and political-economic context (see Chapter 1, Section 1.1 and Chapter 3, Section 3.2).

### *5.2.2. Economic transition and market integration*

Moving beyond the villages, economic development in Laos appears to be another major factor of change. Indeed, since the mid-1980s, the transition towards a market economy, the promotion of market-oriented production by governmental agencies and the development of exchange and communication infrastructures have combined to

increase the market integration of Laos' rural areas and progressively driven rural populations to engage with new production and consumption models. As introduced in the previous chapter (Section 4.3.3), the 1986 New Economic Mechanism represented a major turn in the economic history of the country. Along with a set of regulatory reforms aimed at liberalizing the domestic economy, the policy emphasized that one stage of the transition from subsistence to market economy is the abandonment of shifting cultivation practices in exchange for stable, diversified and market-oriented agriculture. Since then, the objective has been restated on many occasions. For instance, during the Fifth Congress of the LPRP (1991), the primary goals of national agricultural policy were defined as including: a shift from subsistence to commercial production through crop diversification and improved linkages to export markets (Worner 1996). More recently, the National Socio-economic Development Plan for 2006-2010 reaffirmed that the priorities of Laotian agricultural policy are to restructure the rural economy towards commercial agriculture and to increase the diversity of agricultural products for export (GoL 2006b).

In practice, these objectives have been translated into two main strategies. On the institutional side, a strong emphasis has been put on farm extension services and, in particular, market information and technology transfer to farmers (GoL 1999a). The district Agriculture and Forestry Offices play a major role in this strategy by organizing regular training and information workshops in rural villages during which market-oriented production is promoted. At the same time, an improvement of the physical infrastructure (roads essentially) is expected to facilitate the whole process. Indeed, in a country characterized by a poorly developed transportation network, market integration and a shift towards market-oriented agriculture are hardly achievable without an improvement of road access in rural areas. In that context, the Laotian government as well as many international donors have put road building/upgrading at the top of their investment priorities (e.g. GoL 2003; UNDP 1998; World Bank 2004).

Over the past two decades, encouraged by local government agencies and facilitated by a gradual improvement in access to export markets in Thailand, Vietnam and China, cash crops (e.g. maize, Job's tear), timber production (e.g. teak, eucalyptus) and collection of NTFPs (e.g. rattan, cardamom) have developed rapidly in rural areas of Laos. According to Thongmanivong and Fujita (2006), this process is evidenced in large

scale land use change. Indeed, their analysis of satellite imaging covering the four northern provinces of Luang Prabang, Oudomxai, Bokeo and Luang Namtha indicates that the extent of woodlands (forests and plantations) has increased between 1993 and 2000, while upland agriculture has decreased in area and has become more diversified and more market-oriented. At the same time, the increasing monetization of market exchanges, the relative prosperity of a certain fraction of the population, and the regulatory reforms engaged by the state for facilitating private entrepreneurship have combined to propel a significant development of the non-farm activity sector, leading to new, sometimes de-localised, livelihood opportunities for rural populations (Bouahom *et al.* 2004).

As pointed out by Rigg (2005a, 2006a), the impact of market integration on Laos' rural livelihoods is ambiguous. On the one hand, he argues, a significant number of field surveys by international development agencies and NGOs link market integration with overexploitation of the local natural resources and increased poverty. For instance, road building in remote areas often results in the infiltration of non-local actors (e.g. middlemen, transporters) on to the local economic stage. As the local market becomes connected to a wider system, the rates of natural resource extraction and commercialization increase and local revenues are improved (for some actors at least). However, in the long term, "the bulk of the benefits accrue to outsiders while the costs, in terms of environmental decline, resource degradation and livelihood erosion, are borne by the villagers" (Rigg 2006a: 129). On the other hand, market integration can also be a significant factor for reducing the vulnerability of rural populations. A study of nine rural villages in Laos identifies three main local development trajectories linked to market integration: agriculture is intensified by the integration of new technologies; traditional activities (e.g. weaving, collection of NTFPs) are restructured to become market-oriented; and finally, local and/or extra-local non-farm activities become increasingly significant elements of the livelihood strategies of rural populations (Bouahom *et al.* 2004). Therefore, market integration can also provide rural households with opportunities to diversify their livelihoods, to reduce their reliance on limited or degraded land resources and, perhaps, to improve their standard of living.

In the case of the two study villages, the access to a major road and the proximity to an urban centre have played major roles in shaping local livelihoods. Indeed, the change

towards cash-oriented on-farm production – livestock farming, teak plantation and cash crops such as Job’s tear and vegetables – has been encouraged by the emergence of new markets, in particular in the nearby town of Luang Prabang. The case of the long coriander (*Eryngium foetidum*) in Ban Lak Sip is illustrative of this process. Before the mid-1990s, the plant was cultivated, along with other vegetables, by a few villagers on very small plots. It was then sold or exchanged in the village and used as an aromatic herb in local cooking. By the end of the 1990s, the product had become very popular in the markets of Luang Prabang. Based on significant demand and potential profit, in 1997, a woman of Ban Lak Sip (who was occasionally selling forest products in one of the markets of the city) decided to start producing the vegetable on a large plot located downslope of her upland fields. A few years later, in 2003, more than 50 percent of the village households had followed her example and were engaged in commercial production of long coriander.

A comparable observation can be made for Job’s tear (*Coix lacryma-jobi*). Traditionally, the villagers of Ban Lak Sip used to grow a few plants of Job’s tear on the borders of their upland rice fields. Considered as having medicinal properties, the seeds were consumed during labouring in the fields or used in cooking. Besides, the plant was useful in diverting rodents from the rice production. During the mid-1990s, increasing demand from the Thai and Chinese health food industry incited a number of Laotian export companies, formerly specialised in NTFPs, to engage in the promotion and commercialisation of Job’s tear. In order to encourage farmers to shift from rice to Job’s tear production, these companies developed a network of middlemen in the rural areas surrounding Luang Prabang and introduced ‘upfront payment’ systems, buying the production at fixed prices at the beginning of the agricultural cycle as well as providing seeds (and sometimes rice) to the producers<sup>40</sup>. These incentives had a significant impact on the production of Job’s tear in the province, which reached some 8,000 tons in 1999 (Douangsavanh *et al.* 2005). The impact has probably been particularly significant in villages benefiting from good road access, allowing easy transportation of the production. In Ban Lak Sip, although the ratio of plots covered by upland rice and Job’s

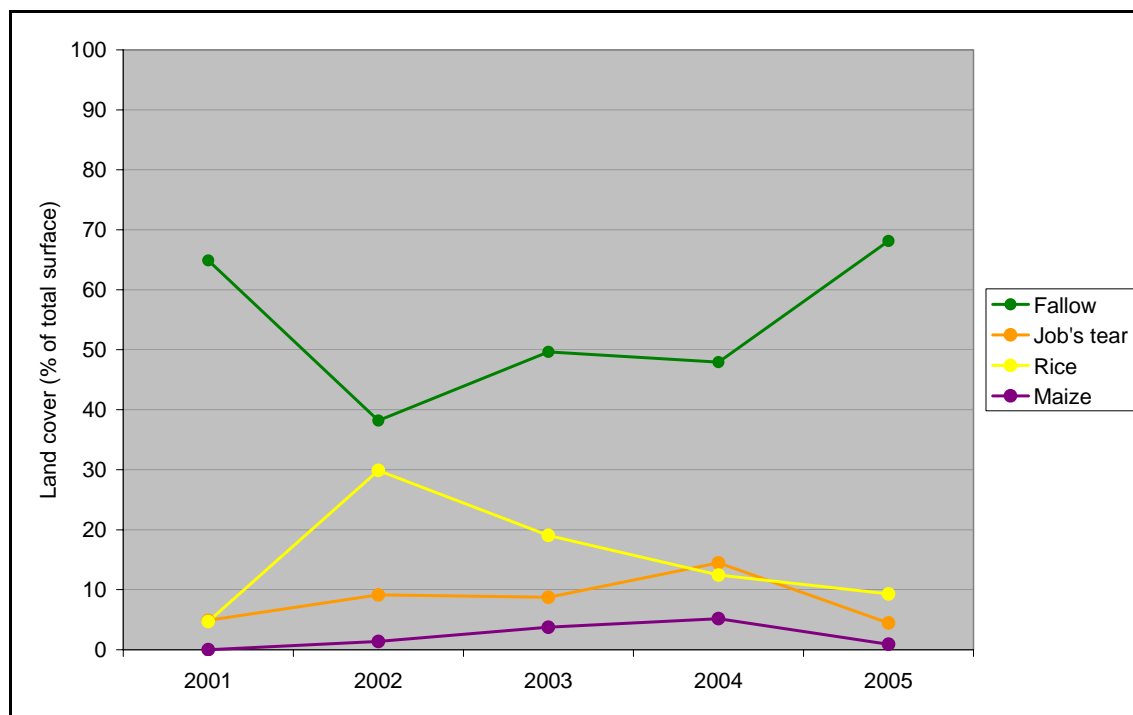
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<sup>40</sup> According to the provincial manager of the Agricultural Plant Development Company, the number of companies engaged in Job’s tear promotion and exportation in Luang Prabang province has increased from one in 1995 to five in 2003. In 2003, his company was buying Job’s tear from some 2,200 households in 24 villages.



tear varies from one year to another (often following variations in market prices<sup>41</sup>), Job's tear now represents a significant constituent of the agricultural landscape (Figure 5.11).

Figure 5.11: Annual crop cover change in the Houay Pano sub-catchment No. 4, 2001-2005.



Source: Sengtaheuanghoung *et al.* (2006).

The economic development of Luang Prabang, associated with a gradual improvement of the transport network and the growth of tourism to the UN World Heritage site, has likewise led to new opportunities for non-farm employment which a large number of villagers have pursued. The increasing significance of the non-farm sector for rural livelihoods is evident in Ban Done Kang where, besides a significant proportion of civil servants, virtually all the village households have members engaged in some form of non-farm activity. Before 1990, these activities were almost exclusively restricted to handicrafts sold or exchanged locally (e.g. production of brooms with *khem* grass, manufacture of thatch with bamboo and *Imperata* grass). Then, from the mid-1990s, new opportunities started to appear, linked to the economic growth of Luang Prabang. Thus, by 2003, 24 out of 64 households had members engaged in construction labour or

<sup>41</sup> According to the farmers interviewed, from 1998 to 2002, the selling prices for Job's tear have fluctuated between 600 and 2,200 LAK per kg.

transportation activities in town and four other households were engaged in weaving and the making of articles of clothing destined to be sold in the Luang Prabang tourist markets. Indirectly, this increasing engagement with cash-oriented activities, coupled with the settling of a relatively wealthy class of residents working in various government agencies, had the effect of boosting the local economy and, between 2000 and 2003, four households opened small shops within the village.

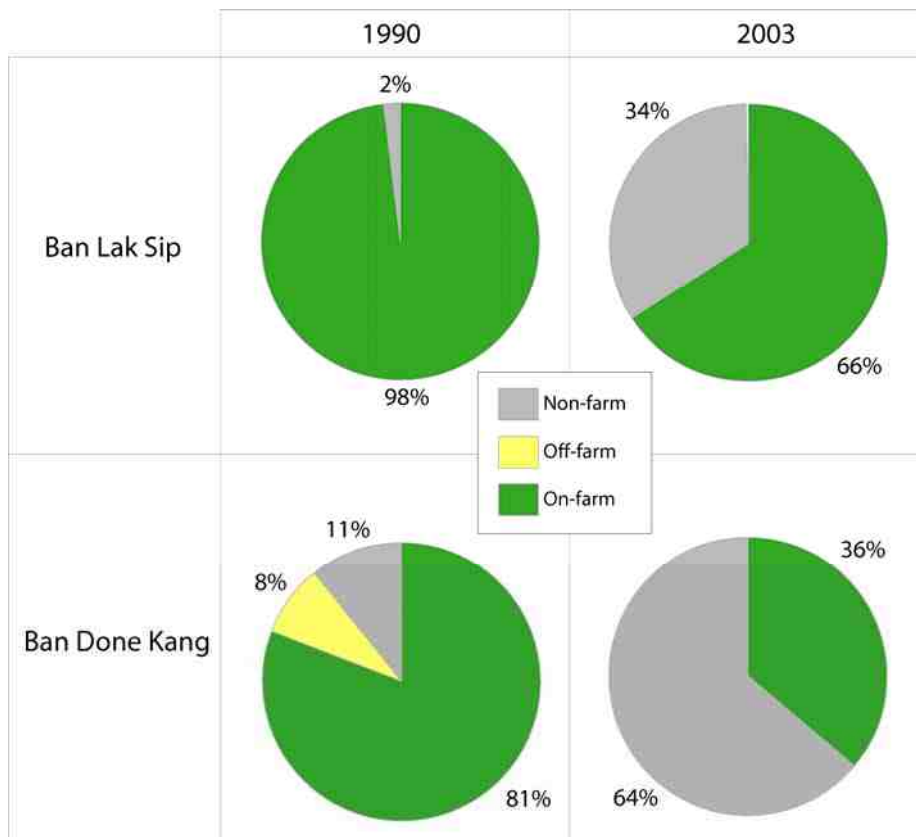
**Box 5.1: Economic transition and local political elites**

Besides livelihood systems, economic transition also appears to have impacts on the local political culture. According to villagers interviewed, village chiefs were traditionally selected among the village elders and the first settlers for their wisdom and knowledge of the local context. Resettlement policy modified slightly the system since leaders of relocated communities were selected to become village chiefs or deputies. Perhaps influenced by the district authorities, this practice is likely to have served as a means to limit potential discontent of resettled populations and avoid conflicts between gathered communities. Nowadays, it seems that village chiefs are often chosen among the wealthiest individuals of the community. Indeed, at the time of this study, the chiefs of the two study villages were economically successful individuals long engaged in business activities. Female village chiefs are rather uncommon in Laos, yet, Mrs. Joy, a wealthy shopkeeper married to a civil servant, was elected chief of Ban Lak Sip in 2003. Similarly in Ban Done Kang, Mr. Heu Ya, a wealthy middleman and member of the Hmong minority, was elected in 2003. While it was not examined further during fieldwork, it seems that market integration and the development of business activities are accompanied by a change in the local political culture. More than examples for the community, the local economic elites appear to have become ‘logical’ political leaders.

Beyond the influence of Luang Prabang, the economic transition has also had direct impacts on the local labour market when light industrialisation reached the villages. In 2000, a Chinese company established a brickyard in Ban Lak Sip. The small industry quickly became an occasional source of income for a number of village residents, hired as labourers on a daily basis. While the villagers do not usually spend more than 35 days per year working in the brickyard, it still represents a non-negligible source of extra revenues during the dry season, when farming activities do not require much labour. More recently in Ban Done Kang, in connection with the water source located near the village, a State-owned company (DLPCP Group) established a water-bottling factory. Between 2001 and 2002, many villagers were employed in the construction of the factory and, nowadays, a number of young residents of Ban Done Kang and Ban Lak Sip are employed as factory workers, six or seven days per week. As a result, the

contribution of non-farm activities to the annual incomes of the village households has increased significantly over the past 15 years, to the point of surpassing the on-farm sector in Ban Done Kang (Figure 5.12).

Figure 5.12: Relative contribution of on-farm, off-farm and non-farm activities to households' annual incomes in Ban Lak Sip and Ban Done Kang, 1990-2003<sup>42</sup>.



In these ways, economic change has provided the villagers with significant opportunities for diversifying their sources of incomes, reworking their interactions with land-based resources and, in part, adapting their livelihoods to local land-related constraints such as decreasing agricultural yields and soil erosion. Thus, at this point of the analysis, the empirical observations made in the two study villages appear to confirm the official predictions on the benefits of market integration and economic development for both poverty reduction and environmental preservation (see Chapter 4, Sections 4.1.3 and 4.2.2). However, economic growth and the influence of Luang

<sup>42</sup> The information was collected among a 10 household sample in each village. In 1990, one of the household surveyed in Ban Done Kang was employed annually at a fruit tree plantation located near the village, which explains the important contribution of off-farm activities. Although it was not captured by the survey, another important off-farm activity in the area is temporary employment for the pruning of teak plantations owned by Luang Prabang residents.

Prabang have also had perverse effects on local resource extraction. In Ban Done Kang, both the number of households involved in firewood collection and the time spent on this activity have increased significantly over the past 20 years (Table 5.6).

*Table 5.6: Percent of households involved in firewood collection and average time allocated, Ban Done Kang, 1980-2003.*

Year	Percentage of households	Time allocation (days/year)
1980	25%	8
1990	50%	17
1995	69%	25
2003	88%	38

While it is difficult to estimate the exact environmental impacts of such intensification, according to the villagers interviewed, the process reflects both a depletion of the resource (i.e. more labour required for collecting the same quantity of wood) and a response to the demand of a growing urban population (i.e. more people involved and more labour allocated in order to meet the market demand). With regard to the second factor, an elderly informant of Ban Done Kang told us:

“In the protected forests, we should not clear the land in order to conserve the diversity of animals and trees living there. But some villagers cut the trees anyway, even if they know that protecting trees is important. [...] The farmers have very low yields in their fields, so they must find another way to make a living. In fact, if the Luang Prabang inhabitants need firewood and buy it at a good price, they somewhat promote deforestation in our village and all around the city” (Mr. Yong, 68, Ban Done Kang, November 2005).

Economic change has also indirectly contributed to a decrease in the availability of agricultural land for the two communities. From the mid-1980s, in conjunction with international development agencies, the Agriculture and Forestry Offices started to promote reforestation and timber production in the uplands of Luang Prabang province by establishing teak (*Tectona grandis*) and gamhar (*Gmelina arborea*) nurseries and organizing demonstration and training in rural areas (e.g. FAO 1989; Sharma 1988; Vaclav 1989). Located in a pilot watershed of a joint FAO-UNDP-GoL project, Ban Lak Sip and Ban Done Kang farmers have been particularly influenced by these incentives.

In 1986, Ban Lak Sip was selected by the project as a ‘model village’ for demonstration of terracing and forestry systems, while a teak nursery and an extension office were established in Ban Done Kang, on the actual site of the water-bottling factory. By the mid-1990s, many villagers had been trained in forestry techniques and provided with teak seedlings, which they planted on their agricultural land.

At the same time, with increasing and changing local needs and expenses (for housing, transport, education and health), an emerging land market and the pressure of wealthy Luang Prabang residents willing to invest in teak plantations in neighbouring rural areas, many villagers have sold their fields bordering the road. In Ban Done Kang for instance, the local authorities estimate that around 25 percent of the cultivable land has been converted to teak plantations since the mid-1980s, and that at least 50 percent of these plantations have been sold to Luang Prabang residents. In 2003, in Ban Lak Sip, the villagers declared some 20 hectares of teak plantations to the district Agriculture and Forestry Office – i.e. 15 percent of the land legally cultivable, excluding the plots sold to non-local actors. Thus, in the two villages, significant parts of the land formerly devoted to annual cultivation have been converted to timber production areas, to the benefit of local residents or neighbouring city-dwellers.

Yet, the contradiction between local knowledge and land use intensification – as discussed above and evidenced in the shortened fallow periods and lengthened cropping periods – suggests that land scarcity has played a significant part in constraining local adaptive strategies to land degradation. Indeed, there is a well-established literature that links changes in intensification such as those recorded in Ban Lak Sip and Ban Done Kang with increased population pressures (e.g. Boserup 1970a; Lee 1988; Lele and Stone 1989; Bilsborrow and Okoth-Ogendo 1992). For shifting cultivation systems, land scarcity is commonly seen as one of the drivers for agricultural intensification, which generally manifests itself in a shortening of the fallow period and/or a lengthening of the cropping period and the introduction of perennial crops (Angelsen 1995). Accordingly in the two study villages, even if precise information on the evolution and extent of land sale and plantation conversion is not available, it is likely that these two dynamics have combined with rapid population growth (see Chapter 2, Section 2.1.2) to reduce the agricultural land available *per capita*, foster an acceleration of the agricultural rotations and, ultimately, contribute to intensify the degradation of the

remaining land used for shifting cultivation. Overall, the actual impacts of market integration and economic development on upland livelihoods and natural resources appear much more ambiguous than the provisions made by the Laotian authorities and major international development agencies (see Chapter 4, Sections 4.1.3 and 4.2.2). Economic development and market integration may provide upland populations with opportunities to compose new livelihoods. Potentially, it may allow them to adapt to environmental degradation and/or improve their living conditions. At the same time, however, market integration also brings about new economic demands and incentives; some of which can have, in the medium term, perverse impacts on local livelihoods and environmental conditions.

### *5.2.3. Reaction to land reform and resettlement*

Besides teak plantation and land sale, a significant number of villagers stated that land use intensification has also been occasioned by the instruments of upland development policy and, in particular, land regulations. As described by an interviewee:

“One problem is that people plant teak all around the village, so that there is no more land for shifting cultivation. If you plant teak on your fields, you don’t have fallows for cultivation, and then you don’t have enough rice to eat. Another problem in the village is that there are many protected forests that farmers cannot use for agriculture. Because of the teak plantations and the protected forests, the farmers don’t have enough land to maintain long fallow periods and, in any case, they cannot get more land because the land allocation has been done already” (Mr. Viengkham, 53, Ban Lak Sip, November 2005).

In fact, the link between shortened fallow periods/lengthened cropping periods and land reform appeared recurrently during interviews with villagers. For instance, in the last series of semi-structured interviews conducted in the two villages in November 2005, the role played by land reform (either land allocation or forest protection) in driving an acceleration of the agricultural rotations was made explicit in 13 out of 30 interviews.

As described in the previous chapter (Section 4.2), upland development policy in Laos is articulated around two main instruments, land reform (i.e. zoning and allocation) and resettlement. In order to stop the assumed ‘chain of degradation’ that links upland deforestation to various degradation processes in the lowlands (see Chapter 4, Section

4.1.2), land reform is expected to limit deforestation, rationalize land management, secure land tenure, and encourage land users to invest in the preservation of their land and engage in commercial production. Similarly, in order to help upland populations getting out of an assumed ‘downward spiral’ of poverty and land degradation (see Chapter 4, Section 4.1.3), resettlement is expected to provide people with better access to markets, state extension services and, hence, new livelihood opportunities. Overall, influenced by the official perspective on land degradation, these measures have thus far for ultimate objectives to foster economic development while preserving the country’s natural resources.

Yet, if these objectives are laudable, a number of studies have shown that Laos’ land reform and resettlement policy have often had negative impacts on upland farming systems and livelihoods (e.g. Baird and Shoemaker 2005; Ducourtieux *et al.* 2005; Evrard 2004; Evrard and Goudineau 2004; Jones *et al.* 2005; NAFRI and LSUAFRP 2002; Romagny and Daviau 2003; Vandergeest 2003a). A major issue that is highlighted in these studies is the role played by land zoning, land allocation and resettlement in engendering significant land shortages at the local level, increased land use pressure and land degradation (see Chapter 4, Section 4.2). With increasing population densities per unit of agricultural land and limited alternatives to shifting cultivation, agricultural rotations are necessarily accelerated. This land use intensification leads then to increased weed invasion in the fields, increased labour for weeding, gradual soil exhaustion and declining agricultural yields. In addition, as pointed out by some studies, land shortage and resulting land degradation can also drive significant population movements, motivated by a search for better access to productive land (e.g. Evrard and Goudineau 2004; Vandergeest 2003a).

With the exception of the latter dynamics, the two study villages appear to fit rather well into this picture. In line with the country’s development policy, at different times and under different forms, they have been subjected to regulations aimed at protecting or regenerating forest cover, ‘rationalising’ land use and, in particular, making shifting cultivation no longer viable. LUPLA in Ban Lak Sip and land use planning in Ban Done Kang have represented major regulatory instruments for limiting the extent of shifting cultivation and delineating forest conservation areas. The ensuing implementation of a land taxation system – favouring perennial land use over annual cultivation – has also

contributed to the same objectives. Besides land regulation and with a particular emphasis in the case of Ban Lak Sip, the two communities have been the recipients for populations resettled from neighbouring upland villages. These relocations have also had a significant impact on land availability for annual cultivation.

Delimited by the district authorities in 1975, Ban Lak Sip land covers a surface area of 433 hectares. As reconstructed through official statistics and interviews with local informants, between 1975 and 1994, natural growth, immigration and the resettlement of 23 households had resulted in a progressive increase of population density per square kilometre of agricultural land (Figure 5.13). Then, in 1995, the district authorities implemented an early version of the LUPLA in the village. Through this process, the area put aside for agricultural activities was set at 136 hectares (31 percent of the village land). Conservation forests (*pa sanguan*), protection forests (*pa ponkan*) and production forests (*pa somsay*) were set at 281 hectares (65 percent of village land) and the remaining 16 hectares were devoted to housing. Most of the land bordering streams and located on hilltops, crests and upper slopes was classified as protected forest and banned from agricultural use. A maximum of three agricultural plots per household were allocated and recorded in an official land register by the village authorities.

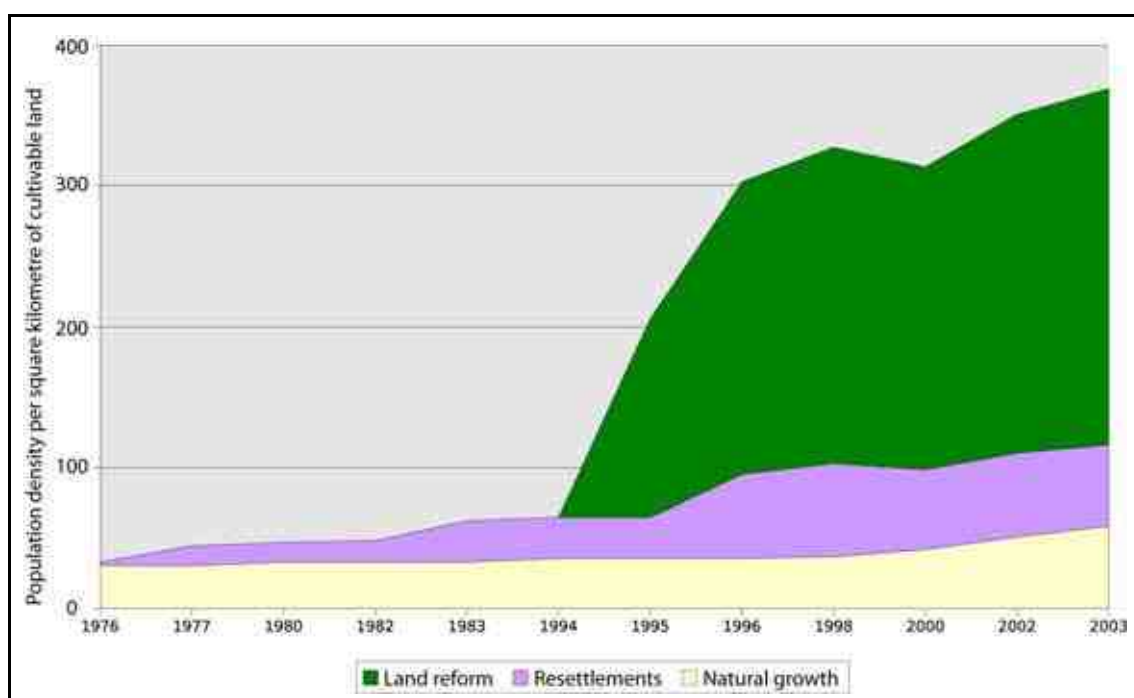
Through this process, the totality of the 136 hectares classified as agricultural land was allocated, with the notable consequence that the 24 households resettled in 1996 in Ban Lak Sip – i.e. after the LUPLA – had no other choice than to buy land from earlier residents<sup>43</sup>. Put together, natural population growth, resettlement and the LUPLA have engendered a ten-fold increase in population density per unit of agricultural land over the last quarter of a century. However, in terms of total impact, the land reform has had the dominant effect, causing almost the same reduction in per capita arable land availability in one year that natural population growth and resettlements did in ten. Brought to the household scale, in one year the average agricultural land tenure was reduced by one third, from 3.9 to 2.7 hectares.

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<sup>43</sup> According to a woman resettled in 1996, many immigrants had to sell livestock (cattle and buffaloes) in order to buy agricultural and housing land.



Figure 5.13: Impacts of natural population growth, resettlements and land reform on population density per kilometre square of agricultural land, Ban Lak Sip, 1976-2003<sup>44</sup>.

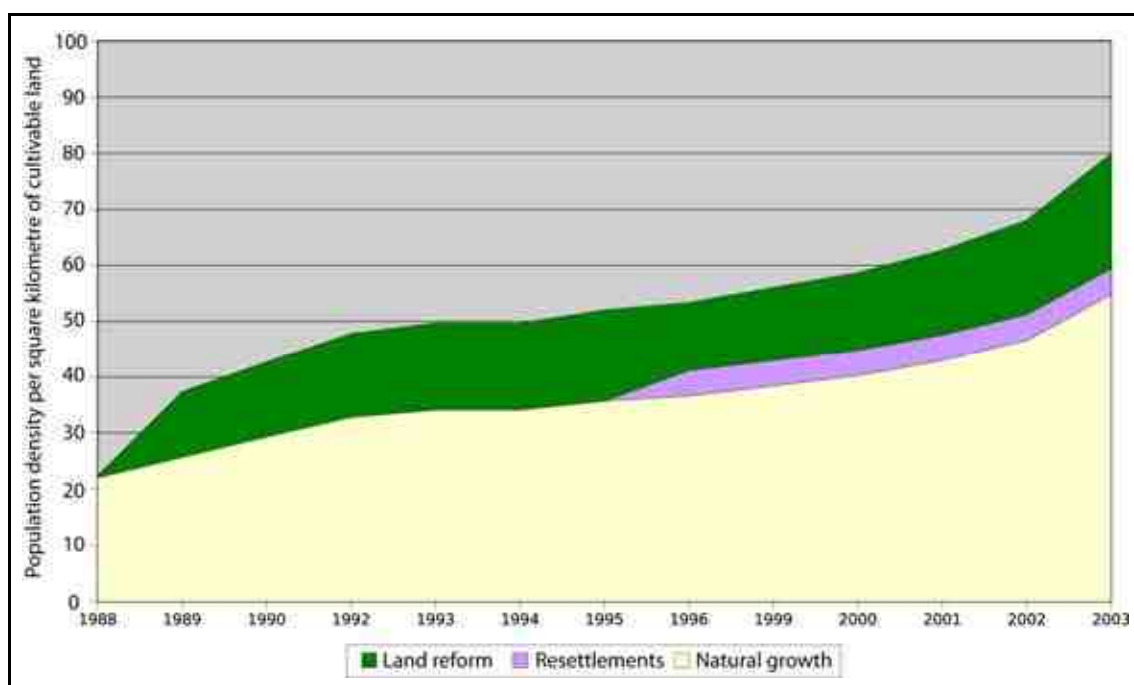


The situation is less well-defined in Ban Done Kang. As introduced earlier, the village is located near a drinkable water source which has long represented a main public water supply for Luang Prabang. Upstream of the source, an area of some 660 hectares was already classified as a protected area, managed by the district authorities, when the first settlers arrived in 1972. In contrast with Ban Lak Sip, the land regulations have consisted of land use planning without allocation of plots to the village households. The latter has remained largely based on existing customary rights. In 1986, the district agriculture and forestry office allocated 540 hectares of land to the village: 10 hectares classified as protection forest (*pa ponkan*) and the remaining 530 hectares usable for agriculture and housing. Three years later, the agricultural land was further subdivided into 10 new hectares of protection forest, 150 hectares of regeneration forest (*pa feunfu*) and 270 hectares of land usable only for perennial crops (tree plantations or vegetable gardens), leaving 100 hectares for annual cultivation.

<sup>44</sup> Natural population growth was calculated by subtracting resettled households from the total population. However, the descendants of resettlers were not removed. Consequently, the figures can be seen as overestimates.

Looking at the evolution of the population density per unit of agricultural land, the situation appears much more favourable to farmers than in Ban Lak Sip (Figure 5.14). In 1988, the average agricultural land available per household was 22 hectares. Fifteen years later, despite considerable population growth and a significant expansion of the protected areas, the average was still relatively high with 5.8 hectares per household. However, if only the land available for shifting cultivation is considered, the 1989 subdivision of the agricultural land has led to averages per household of 4.2 hectares for permanent crops and only 1.6 hectares for annual crops (i.e. 40 percent less surface area than in Ban Lak Sip).

Figure 5.14: Impacts of natural population growth, resettlements and land reform on population density per kilometre square of agricultural land, Ban Done Kang, 1988-2003<sup>44</sup>.



As introduced above, land reform in the two villages has been accompanied by the implementation of differential land use taxes reflecting government priorities. In 2003 for instance, the taxes for annual crops were higher (20,000 LAK per ha) than for teak (8,000 LAK per ha) and orchards (12,000 LAK per ha) in the two villages. Thus, by favouring timber and orchard production over annual cultivation, the taxation system has perhaps also contributed to motivate the expansion of teak plantations mentioned earlier and the consecutive reduction of land available for agriculture.

Ultimately, in the two villages, the land shortage engendered by land reform and, to a lesser extent, resettlement has played a major role in constraining local adaptive strategies to land degradation, reinforcing the shortening of fallow periods and propelling a lengthening of cropping periods. As described by an interviewee, this land use intensification has then led to a decrease in soil fertility and to declining yields:

“The yields for annual crops have become rather low in the village. The reason is that, for some time now, the farmers have no other choice than to cultivate their fields two successive years before letting it in fallow. When you do that, the soil becomes poorer and poorer. Farmers have been forced to cultivate like that since the district authorities have made the land allocation” (Mr. Lor, 36, Ban Lak Sip, November 2005).

At the same time, with the invasion of the fields by hardy weeds, the agricultural workload has rapidly reached critical levels, to the point of propelling a disengagement of the villagers from annual cultivation activities (at least in terms of time and labour allocation):

“When the district authorities decided to protect the forest in 1989, I lost one of the fields where I used to grow rice. [...] Four families in the village lost all their land. Many others don't have land where shifting cultivation is allowed. They have to cultivate every year because this is the only way permitted by the authorities. As a result, there are a lot of weeds in their fields. Without fallows, weeding becomes a very hard work and some villagers prefer to stop farming. They plant trees in their fields and become workers in Luang Prabang or collect banana leaves and bamboo shoots to sell in the market” (Mr. Ping, 81, Ban Done Kang, November 2005).

Ironically, it seems thus that, without the creativity and adaptive capacity of the local actors, policy intervention – motivated by the ‘chain of degradation’ and upland ‘downward spiral’ narratives – would make the official environmental discourse a reality in the two study villages. Land reform and resettlement policy are indeed engendering a critical shortage in agricultural land which, in turn, propels and/or sustains land degradation in localized areas. While the main processes involved in this land degradation trajectory are different from those put forward in official environmental assessments (see Section 5.1), they require nevertheless a significant effort of adaptation from the part of local land users.

#### 5.2.4. *De-agrarianisation and 'minor variations'*

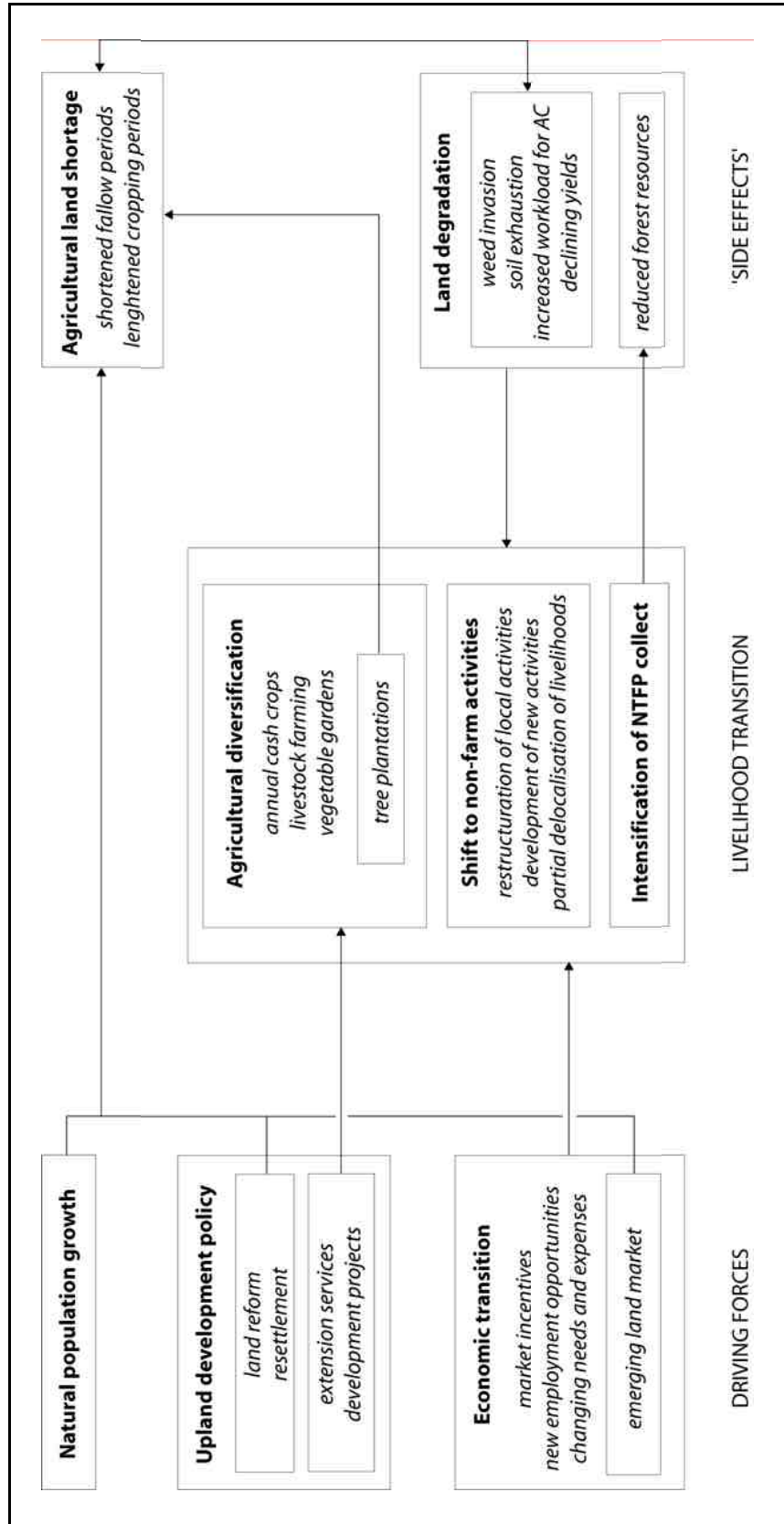
In the end, official environmental discourse and associated policy have contributed to engender significant land degradation at the local level and propelled major livelihood change in the two study villages. Facilitated by increasing market integration and new economic opportunities, changes have included a diversification of agriculture and, more generally, of livelihood activities. Some traditional activities have been restructured and/or intensified (e.g. weaving, NTFP collection), new local activities have appeared (e.g. commercial crops, factory work), and some households have partially de-localised their livelihoods in order to gain access to non-farm opportunities (Figure 5.15). In fact, and this is particularly noticeable in the case of Ban Done Kang, policy-induced land shortage and the resulting land degradation have drawn a number of households into a rapid 'de-agrarianisation' process (e.g. Bryceson 1996; Bryceson and Jamal 1997; Rigg 2005b) reflected in decreasing labour allocated to farming, a general shift to non-farm activities, and an increasingly significant contribution of non-farm revenues to annual incomes<sup>45</sup>.

However, if the two villages present comparable processes of transition (at least when observed through the time frame of this study), they also reveal significant differentiation with regard to local livelihoods. In general, Ban Lak Sip villagers are very much oriented towards on-farm activities. As described in Section 5.2.1, over the past fifteen years, the general trend has been one of increased labour and land input for annual cultivation, vegetable cropping and timber production while the engagement in non-farm activities has increased only slightly in terms of both population and time. Ban Done Kang appears to be either a step further in the agrarian transition – provided that the hypothesis of a common socio-economic trajectory is true – or on a different development path. Livelihoods are more diversified than in Ban Lak Sip. About one third of the population is fully engaged in non-farm activities and Ban Done Kang households allocate twice as much time to these activities than their Ban Lak Sip neighbours. Finally, in contrast with the agricultural expansion observed in Ban Lak Sip, land under annual cultivation has decreased over the past fifteen years and annual crops have been replaced by teak plantations.

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<sup>45</sup> Bryceson defines 'de-agrarianisation' as "a process of: (i) economic activity reorientation (livelihood), (ii) occupational adjustment (work activity), and (iii) spatial realignment of human settlement (residence) away from agrarian patterns" (1996: 99).

Figure 5.15: Driving forces, 'side effects' and livelihood transition in the two study villages.



It is difficult to identify the exact causes for such differences. The fact that teak plantations expanded first in Ban Done Kang and later in Ban Lak Sip suggests a wave of transition propelled by urban residents willing to invest in planted land in neighbouring rural areas. Thus, new economic opportunities and associated land conversion and land sale would have appeared first in the areas close to Luang Prabang and, following the road network, progressively expanded to Ban Lak Sip and beyond. Besides economic incentives, variations in the implementation of the land reform programme have probably contributed to differentiate the two study villages. As described in Section 5.2.3, limitations imposed by land regulation on annual cultivation practices have been more important in Ban Done Kang than in Ban Lak Sip. They were also imposed earlier in Ban Done Kang. Thus, the abovementioned policy-induced land degradation and adaptive livelihood change is likely to have occurred at different times and degrees in the two villages.

Finally, different levels of land tenure security may also have played a role in shaping different levels of de-agrarianisation in the two villages. Ban Lak Sip residents benefited from the procedures established in the early LUPLA programme. In particular, a village committee was established and consulted for the land use planning process and the plots allocated to households were officially recorded by the local authorities. Thus, while it certainly imposed significant constraints on annual cultivation practices, land reform also had the effect of securing land tenure and limiting local conflicts regarding access to land. As pointed out by an interviewee:

“Before land allocation, people used to cultivate everywhere. Everybody was looking for the best plot of forest and there were many conflicts related to land between villagers. [...] Now that forest is protected and land allocated to each family, villagers do not fight about the land anymore. Conflicts between farmers are now only due to problems of burning and uncontrolled fires in the fields” (Mrs. Viengkham, 22, Ban Lak Sip, November 2005).

In contrast, land reform in Ban Done Kang did not include allocation and official registration of agricultural land to households. Furthermore, interviews suggest that the process was clearly top-down, non-negotiable and, for some villagers, rather unjust. As described by an interviewee:

“When I arrived in Ban Done Kang in 1973, the village chief allocated me the land of someone who had just left the village. Then, in 1989, the district decided to protect a large area of land bordering the territory of Ban Houay Thong. I lost one plot without any compensation, just like many other villagers. However, none of us dared to complain. At the beginning, some villagers continued to crop on their former plots but they had problems with the authorities and were forced to stop. Many farmers were really angry but they could not do anything. I remember that one villager said: ‘I don’t care if they kill me; I am going to cultivate my land’. He started to slash his plot but he had to stop after three days when the district authorities threatened to put him in jail. [...] Some lost all their agricultural land when the authorities delimited the protected area. [...] Others had to sell their remaining land in order to make a living” (Mr. Sanla, 72, Ban Done Kang, November 2005).

What has been considered by a number of villagers as a sudden dispossession is likely to have played a role in intensifying the de-agrarianisation process in Ban Done Kang. On the one hand, by threatening the viability of traditional farming systems, land reform has probably forced a number of households to sell their land and turn to non-farm activities. On the other hand, the coercive measures that accompanied land reform implementation in the village certainly created a feeling of insecure land tenure which may have incited villagers to sell land before its possible ‘appropriation’ by the authorities. The same feeling has perhaps also played a role in the rapid expansion of teak plantations in Ban Done Kang. In this village, the establishment of a FAO-UNDP-GoL tree plantation project and the development of a land market were concomitant with the land reform (see Section 5.2.2). In this context, teak plantations may have been considered by the villagers both as a means to increase the economic value of their land and as a way to secure land tenure (i.e. by following the authorities’ incentives, land owners would be less subject to dispossession)<sup>46</sup>.

In the end, despite a number of similarities (i.e. biophysical context, ethnic distributions, demographic increase), what may appear as minor variations in terms of geographical setting and policy implementation have led to important differences in local livelihood

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<sup>46</sup> In this regard, it has to be noted that tree plantations and orchards were traditionally attributed a permanent land tenure status in the customary land rights of the ethnic Lao (Suryadhay *et al.* 1971).

patterns. At the time of this study, it seems that the pace and extent of de-agrarianisation have been much faster and more significant in Ban Done Kang than in Ban Lak Sip and that, as a result, the economy of the first community has shifted very significantly towards non-farm, urban-based activities while livelihoods in the second community remain very much farm-based. Whether livelihoods in the two villages will ultimately evolve in the same direction or not remains an open question. However, such economic and land use differentiation between two neighbouring communities clearly puts into question the essentialized representation of upland livelihoods proposed in much of the official literature on Laos' upland 'issue' (see Chapter 4). More theoretically, for studies dealing with socio-environmental change at the local scale, this differentiation also highlights the importance of acknowledging the various and uneven ways political-economic forces can be rooted in the 'local' (see Chapter 3, Section 3.1.2).

### **5.3. Bringing discourse and policy into question**

As was pointed out in the introduction to this chapter, the main objectives of the 'hybrid research' approach and the livelihood analysis employed above were, first, to test the validity of Laos' official discourse on land degradation and, second, to assess the effectiveness of the current upland development policy in controlling land degradation. Building on the two case studies, several observations can be made that contradict the official viewpoint and bring into question the advocated 'solutions' to the national land degradation 'issue'.

#### *5.3.1. The 'local reality' of land degradation*

Looking at the 'local reality' of land degradation in Ban Lak Sip, biophysical measurements, farmers' 'theories' and livelihood adaptations suggest that land degradation is indeed a significant issue in the study area. Furthermore, the data available clearly points towards shifting cultivation and increasing land use pressure as major proximate causes of land degradation. In these respects, thus, the case study does not present fundamental contradictions with the official discourse on upland degradation. However, the 'hybrid research' approach and the livelihood analysis employed in this study suggest that the official viewpoint is both partial in its definition of Laos' land degradation issue and too negative (or pessimistic) in its description of the upland populations' lack of adaptive capacity.



First, the local definition of ‘land degradation’ appears quite different from the official viewpoint. As discussed in Chapter 4, the official representation of land degradation involves a wide range of resources and processes – e.g. deforestation, soil erosion, water pollution, siltation of wetlands and decreasing agricultural productivity. In contrast, when talking about land degradation, the farmers of Ban Lak Sip focus essentially on declining soil fertility and agricultural yields, which are certainly two primary issues for the viability of local traditional livelihoods. Most probably, these different viewpoints reflect different experiences of land degradation, as well as different social and environmental concerns. However, with regard to the commonly perceived issue of decreasing agricultural productivity, the ‘hybrid research’ approach indicates that, rather than being linked primarily to soil erosion processes, declining soil fertility and crop yields are more related to the negative impacts of accelerated agricultural rotations. This simple observation, as well as relatively low soil erosion rates, significant inter-annual variations and the presumed importance of local sedimentation processes, challenges the ‘chain of degradation’ narrative put forward by the Laotian authorities and many international development agencies. In particular, the link made between upland agriculture and downstream siltation of reservoirs and wetlands does not appear as obvious as presented.

Second, local socio-environmental transitions appear fairly different from the ‘downward spiral’ model described in the official environmental discourse. As shown by the approach to livelihood change, our two case studies do not reflect the conception of a ‘desperate ecocide of the poor’ (Blaikie 1985). Over the past fifteen years, many villagers of Ban Lak Sip and Ban Done Kang have developed effective adaptive strategies not only for coping with an increasingly problematic process of land degradation (e.g. increased labour usage for annual cultivation, expansion of the surfaces cultivated) but also for controlling and/or avoiding it (e.g. alternative on-farm activities, shift to non-farm activities). In fact, the wide-ranging livelihood changes observed in the two villages illustrates the capability of local populations to adapt effectively to a variety of constraints and incentives. Within a changing economic and demographic context, villagers have used the opportunities open to them (e.g. new resources, new techniques, new markets) to compose various livelihood strategies, some of which contribute to the control of the adverse impacts of land degradation on their farming activities.

Just as Tiffen and Mortimore (1994) described in Kenya, demographic growth has combined with economic development to create new options and stimulate innovation in the form of changing land use and adoption of non-farm activities. Combined with improved exchange infrastructures, higher population density has lowered the intellectual and economic interaction costs. Hence, it has increased the potential for the generation of ‘new’ ideas (i.e. more ‘brains’ inside the community and more inspiration from outside) and improved the viability of some livelihood strategies (e.g. more potential customers per shop). As described in Ban Lak Sip for instance, the rapid expansion of long coriander production – a main alternative to annual cultivation – has been inspired by outsiders, facilitated by improved access to urban markets and accelerated by local interactions (i.e. villagers observing and reproducing the innovations of their neighbours).

Along the same line, the recent flourishing of small businesses – another main alternative to annual cultivation – in Ban Done Kang has been facilitated by rapid population growth and, importantly, the settlement of a relatively wealthy population from Luang Prabang which constitutes an important clientèle for local shopkeepers. To some extent, therefore, resettlement policy – as a factor of local demographic growth – has facilitated a number of local adaptations to land degradation. In any case, it must be noted that, as indicated in interviews for this study and highlighted elsewhere (e.g. Rigg 2005a), many villagers living in remote areas often view their resettlement to more accessible areas rather positively. A woman resettled in Ban Lak Sip in 1996 exemplified this state of mind rather well when she said:

“I was happy to move to Ban Lak Sip because there was the road, a school and the electricity. In Houay Nokpit, I was a stupid girl who didn’t know anything. [...] Now, all the Houay Nokpit families living in Ban Lak Sip are happy. [...] When we arrived, the villagers of Ban Lak Sip were not angry. On the contrary, they said that, with more people in the village, the development/modernization would be faster and easier” (Mrs. Bounlong, 40, Ban Lak Sip, November 2005).

The overall transition, however, questions the basis for ‘development’ intervention to ‘save’ upland populations allegedly embarked in a downward spiral of poverty of land degradation. In the two study villages, it transpires that the very policies sought to

‘rescue’ the villagers may indeed be major driving forces behind the intensification of the shifting cultivation systems and the ensuing land degradation.

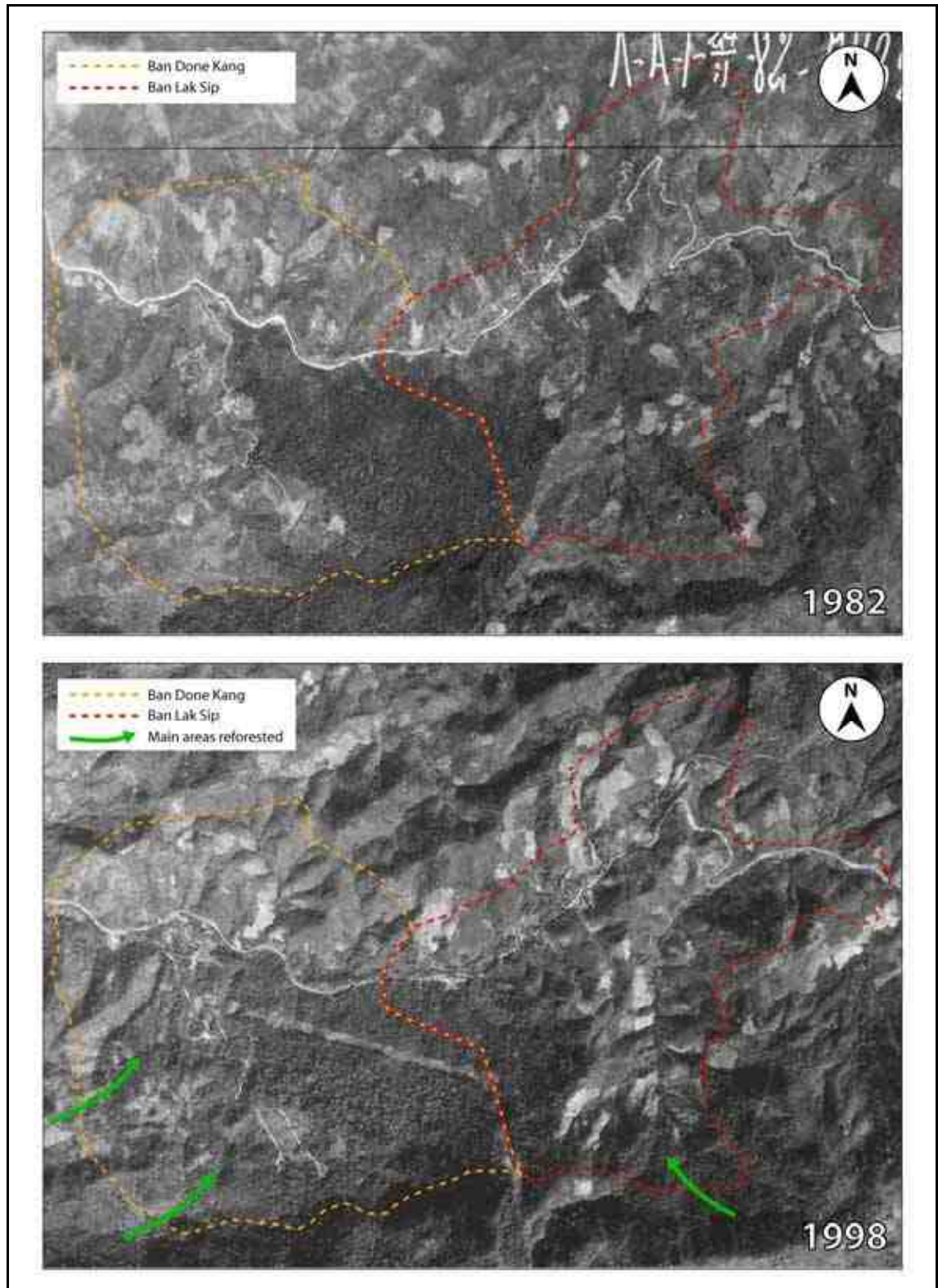
### 5.3.2. *The impacts of upland development policy*

As implemented in Ban Lak Sip and Ban Done Kang, land reform and resettlement policy are clearly in line with the joint national goals of eradicating shifting cultivation and conserving forest cover in the uplands. In both villages, land regulations have included an important reduction of land available for annual cultivation and the delineation of protected forests. In Ban Done Kang in particular, the land use planning illustrates well the representation of upland shifting cultivation found in the official environmental discourse described earlier (see Chapter 4, Section 4.1.3). Through a subdivision of the agricultural land into two land use classes (i.e. annual cultivation fields and upland gardens), an explicit separation is made between shifting and perennial cultivation in terms of their impacts on the environment and on the hydrological functions of the catchment supplying the neighbouring waterworks. Similarly, the land taxation system implemented in the two villages after the land reform also reflects the official viewpoint on the differing environmental impacts of annual cultivation and perennial tree plantations. Finally, gathering six neighbouring communities in Ban Lak Sip without resizing the village land certainly contributes to free significant areas from human occupancy and, indirectly, to limit the spatial extent of shifting agriculture.

In terms of accomplishments, land reform has been relatively successful in meeting two of its official objectives, namely to develop market-oriented production and to encourage farmers to change from shifting cultivation to more sedentary production. Furthermore, as suggested by a simple comparison of aerial photographs taken in 1982 and 1998, the land regulations implemented in the two villages seem to have also succeeded in their goal to preserve, and even restore forest cover. Indeed, in both cases, most of the forested areas present in 1982 have been conserved and, by 1998, large cleared areas were already partly reforested (Figure 5.16). In Ban Lak Sip, resettlement policy also contributed to significant reforestation near the southern limit of the village land after the entire population of the neighbouring upland village of Houay Nokpit was moved in 1996. While some of the villagers who had been resettled continued to access

their former lands for forest products gathering, hunting, vegetable cropping or livestock grazing, relatively long walking distances have prevented many of them from maintaining large areas under cultivation.

Figure 5.16: Forest re-growth in the two study villages, 1982-1998.



However, upland development policy has had a critical impact on local farming systems and, importantly, has been largely responsible for the land use intensification observed in the two villages. By engendering significant population pressure over a limited area, resettlement and land reform have forced many farmers to shorten fallow periods, lengthen cropping periods and increase labour input in an effort to maintain crop production and food security. The unfortunate outcomes of these changes have been a critical increase of the farming households' workload and, it appears, a persistence of the land degradation issue for a majority of villagers. In fact, among the main livelihood issues identified by the population of the two study villages, limited access to land and its consequences (e.g. land shortage, high population density, short fallow periods) rank rather high on the list alongside land degradation processes and indicators (e.g. low agricultural yields, high agricultural workload) (see Appendix, Table A6).

These observations are consistent with the conclusions of Fox (2000) who, based on broad-scale land use and land cover surveys in upland areas of Southeast Asia, outlined the role of governments in encouraging high-density settlements under conditions where the maintenance of long fallow periods is impossible and shifting cultivation becomes unsustainable. In the end, such policies have themselves contributed to the poor reputation of shifting cultivation and thus, in a sense, have been self-legitimizing. Equally importantly, the two case studies corroborate the idea that resettlement and land reform reinforce the unbalanced power relations between lowland policy-makers and upland-dwellers (see Chapter 4, Section 4.3.2). In the guise of preserving the environment, reducing poverty and modernizing the uplands, the state – and indirectly the 'lowland Lao' political leadership – has found a legitimate way to expand and/or strengthen its control over upland resources and populations. As a result, Ban Lak Sip and Ban Done Kang farmers have been abruptly deprived of long-established rights to access or to use certain resources of the village land, even if they were sometimes the ones who had created or enhanced these resources (e.g. bamboo forests, rattan and piper betel plantations). As Rigg puts it, "what is occurring in many upland areas of the Lao PDR is a two-fold livelihood squeeze, from 'below' and from 'above'. From below by the declining productivity of the environment, whether crop land or forest; and from above by government policies" (2006a: 130). Similarly, as illustrated by the present study, upland communities of Laos have to adapt their livelihoods not only to actual land degradation processes but also, indirectly, to the official discourse on land

degradation. In this regard, market integration can certainly provide opportunities for adaptive change. However, while it is often represented as a panacea by the Laotian government and its development partners, it can also create the conditions for increased pressure on local resources, land or other natural resources.

**Box 5.2: Rethinking approaches to the agrarian transition**

Moving beyond the case of Laos, the observed links between environmental discourse, government policy, land degradation and local livelihood change raise important issues for agrarian transition theory. In political economy, agrarian transition is defined as the wide-ranging economic and social transformations that characterize the development of capitalism in rural societies (Byres 1996). While the related literature has long remained focused on Marxian economics and its research objects (e.g. access to means of production, relations of production, capital accumulation), recent approaches to agrarian transition attempt to provide a broader conceptualization of the process, including environmental perspectives (e.g. ChATSEA 2005). Indeed, as pointed out by Bernstein and Byres (2001), agrarian transition literature exhibits significant lacunae with regard to the links between social change, ecological conditions and environmental change. Considering these links appears particularly appropriate in the light of the two case studies presented in this chapter.

Besides demographic and economic factors, the environmental ‘factor’ also plays a central role in the agrarian transition observed in the two study villages (see Section 5.2.4, Figure 5.15). On the one hand, various land degradation processes (e.g. soil exhaustion, weed invasion, decreasing forest resources) have constituted major driving forces for economic diversification and a progressive de-agrarianisation of local livelihoods. In that sense, the environment is bound up *materially* in the observed agrarian transition. On the other hand, as described in Chapter 4, the land degradation ‘issue’ defined by the Laotian authorities and some of their development partners represents a significant impetus for various political measures (e.g. land reform, resettlement, extension services) that have had critical impacts on local land use and, in turn, land degradation processes and extent. Thus, the environment is also bound up *discursively* in the observed agrarian transition.

Furthermore, when comparing the de-agrarianisation process in the two study villages, this latter linkage between environmental policy and local socio-economic change appears even more crucial. As discussed in Section 5.2.4, variations in policy implementation can contribute to significant differentiation from one locality to another. Despite being very similar in a majority of aspects, two neighbouring communities may be engaged in very different economies: one based on a combination of commercial and subsistence farming, and the other significantly de-localised and based on non-farm, largely urban, activities. In the end, the two case studies presented above suggest that understanding patterns of agrarian change requires paying careful attention to both ecological conditions and environmental discourses. Changes in ecological conditions are both causes and consequences of livelihood change while environmental discourses condition directly local adaptive responses to ecological change and more indirectly, through their impact on environmental policy and regulation, local livelihood constraints and opportunities.

#### 5.4. Summary

Overall, integrating livelihood analysis (at the community level) within a political ecological framework proves a valuable approach for highlighting the way changes in local environmental practices can be constitutive of broader socioeconomic trajectories like livelihood diversification and de-agrarianisation. In turn, it facilitates the identification of causal links between local socio-environmental change, the wider political-economic context (e.g. land policy, market integration) and the power relations, actors' subjectivities and strategies that shape this context.

To a significant extent, recent development trajectories in the two study villages contradict the 'chain of degradation' and 'downward spiral' narratives put forward in the official environmental discourse. First, soil erosion does not appear to represent a critical issue in Ban Lak Sip. In the MSEC experimental catchment, measurements of soil erosion rates and sediment discharge show relatively low values. In fact, rather than soil erosion, the main processes of land degradation identified by the villagers and by research in the study area (Roder *et al.* 1995, 1997a, 1997b) relate to the soil exhaustion and weed invasion issues that follow from an intensification of the shifting cultivation systems. Second, livelihood change in the two study villages does not reflect the official 'downward spiral' model. Many villagers have developed effective adaptive strategies (i.e. livelihood diversification and de-agrarianisation) not only for controlling agricultural land degradation but also for limiting their reliance on, and engagement in activities threatened by land degradation.

Ironically, however, it appears that the very policies advocated by the Laotian authorities to solve the upland 'issue' have in fact contributed to foster land degradation. If economic policy and market integration have certainly provided new livelihood opportunities to the villagers, they have also encouraged many of them to convert agricultural land into tree plantation and/or sale land. In turn, this process has contributed to reduce the surface area available for shifting cultivation and, ultimately, to foster the acceleration of the agricultural rotations and the ensuing land degradation. At the same time, land reform and resettlement policy have engendered critical agricultural land shortage which, combined with plantation conversion and the sale of land, have propelled and sustained land degradation in localized areas and, thus, also contributed to force the villagers into a rapid diversification/de-agrarianisation process.

Beyond the role played by Laos' mainstream environmental discourse and policy in driving local socio-environmental change, this chapter illustrates that environmental narratives – as a lever for policy making – may represent a privileged medium for questionable political objectives (see Chapter 3, Box 3.1). In Laos, state ideologies regarding acceptable uses of the uplands become self-legitimizing because of state policy itself. Indeed, as the above case study material illustrates, land regulation and resettlement contribute to engender significant population pressure in particular locales. In this manner, state policy creates the context through and by which upland populations and their practices can be presented and paraded as environmentally destructive. In turn, the upland degradation 'issue' justifies external intervention in local affairs, legitimises state territorialisation and, to a degree, reinforces the power of the powerful (see Chapter 4).

In the end, these links between mainstream environmental discourse, state and resource politics, rural development policy, and local livelihood and environmental change provide a perspective on socio-environmental interactions that is quite different from the 'modern' conceptual divide between society and nature (see Chapter 3, Section 3.1.1). Answering some of the questions posed in the first two research themes of this study (Chapter 3, Section 3.3.2), land degradation appears very much a socially-constructed issue in the uplands of Laos, both discursively – through mainstream environmental narratives and the role they play in legitimizing/facilitating particular resource and power struggles – and materially – through the ecological outcomes of local livelihood change. Further down the line, power relations between the state, foreign agencies, lowland elites and politically-marginal upland-dwellers appear to play a key role not only in shaping the current definition of Laos' land degradation 'issue' (see Chapter 4, Section 4.3), but also – through policies devised in the ministries of Vientiane – in favouring the materialization of the 'issue' in the uplands (see Section 5.2.3). Bearing in mind the polarisation of power relations between Laos' policy makers and upland communities, the next chapter discusses state-society relations in more detail. An 'actor-oriented' approach is used to look at local development trajectories and adaptive strategies in a more disaggregated way, that is, at the household and individual actor levels.



## **Chapter 6. Looking across scales**

The discussion of state-society relations, so far, has remained largely focused on the discursive and policy instruments employed by the Laotian state for making the uplands 'legible' (Scott 1998) and, ultimately, governing the interactions between upland populations and their environment. Chapters 4 and 5 demonstrated the main narratives structuring the official discourse on land degradation and poverty, the extensions of this discourse in terms of policy and regulation, and the consequences of the latter for livelihoods and land degradation in two upland villages. Through this perspective, local development trajectories and associated environmental change appear largely 'externally generated'. They reflect the adaptation of upland populations to a reconfiguration of their social and environmental spaces by state policy and market forces. However, behind these broad patterns of change, a more detailed examination of local livelihood change reveals an important diversity of development trajectories at the household and individual scales (see below, Section 6.2). Building on this observation, the present chapter argues that the reconfiguration of the upland social and environmental spaces and the subsequent socio-environmental transition are also significantly conditioned 'from the inside'. In particular, by accounting for local economic agency and the 'everyday politics' of resistance to state intervention, the chapter intends to contribute to the scientific debate on the SLA framework and its functionalist approach to livelihood construction (see Chapter 3, Section 3.2.2).

In order to provide theoretical bases for examining the 'internal' factors and drivers of change in the two study villages, the next section provides an introduction to associated debates in the scientific literature on livelihood diversification and de-agrarianisation, the geographies of globalisation and the practical politics of state governance and development intervention. Then, based on empirical material collected in the two study villages, the second section describes how local socio-economic differentiation patterns (i.e. differential access to land, labour, financial capital and education) have contributed to shape the socio-environmental transition described in Chapter 5. The third section argues that, along with state policy and market forces, the observed transition has also been prompted 'internally', by an evolution of the local socio-cultural norms and values (e.g. new representations of modernity, 'consumerism'). Moving away from the socio-economic perspective, the fourth section explores the everyday state-society politics

expressed in local territorialisation processes. Empirical cases are presented illustrating different forms of local mediation of upland development policy and, in particular, resettlement and conservation policies. Finally, the fifth and last section summarizes the findings and engages a discussion of state-society relations in Laos. It suggests that upland societies and livelihoods are much more diverse and differentiated than the way they are represented in the official environmental discourse and, more generally, it argues that local social differentiation, socio-cultural change and everyday politics play a crucial role in creating disjunctures between the aims and the accomplishments of the state.

### **6.1. Local contingencies**

In three main instances, local contingencies can play a major role in shaping socio-environmental change. First, local socio-economic differentiation engenders a diversity of responses to ecological, policy and market forces. Within the same community, households/individuals often do not have equal access to the same resources and livelihood opportunities. Hence, driving forces for livelihood change such as land degradation, land use regulation or market incentives do not affect households/individuals equally and local livelihood adaptation is likely to take different forms depending on a household/individual's endowment (Bouahom *et al.* 2004; Chambers and Conway 1991; Ellis 2000). As an adaptation to decreasing productivity of on-farm activities for instance, livelihood de-agrarianisation is likely to involve different non-farm labour markets depending on the situation of a household/individual with regard to capital, land and labour availability as well as education and skills (Ellis 1998). At the community level, such adaptive process is thus likely to engender a general trajectory of economic diversification. In that sense, local socio-economic differentiation patterns can be considered as 'passive', yet important factors of diversification in the face of driving forces for livelihood change.

Second, local contingencies also shape socio-environmental transitions in a more proactive and unconstrained way. Socio-cultural change and the emergence of new aspirations and new needs among local populations can be major driving forces for livelihood and land use change. For instance, as argued by Kelly (2000) and Rigg (2000) in Southeast Asia, the increasing engagement of rural populations with new

forms of economic activities (i.e. non-farm based and cash-oriented occupations) owes as much to economic factors (e.g. declining profitability of the agriculture, growth of the non-farm labour market, more remunerative opportunities in the non-farm sector) as to people's desire for what they have come to consider as modern occupations. In that sense, local populations are not simple reactors to macro-systems of constraints and incentives; they are "active agents and subjects of their own history" (Ortner 1984: 143). Broad scale processes such as economic globalization or the commercialisation of agriculture are always anchored in a multitude of local settings where they articulate with local histories and ways of life and are sustained or transformed through local cultures and practices (Bebbington 2000; Hefner 1993; Li 1999a, 2002b; Rankin 2003). Thus, as pointed out earlier (see Chapter 3, Section 3.1.2), global and local changes must be seen as co-produced.

Third, and building on this point, socio-environmental transitions are also shaped by local opposition to external intervention and, importantly in the case of marginal populations, everyday acts of resistance. As pointed out by a number of scholars, upland minorities of Southeast Asia have long been marginalized in terms of access to political institutions and, thus, largely excluded from the formal political arena (e.g. Clarke 2001; Rambo *et al.* 1995; Rigg 1997, 2005a; Stuart-Fox 2005). Without access to mainstream political debates and in order to avoid the repression that a direct conflict with powerful actors could bring about, these marginal populations are more likely to engage in what Scott identifies as 'subordinate resistance', that is:

"any act(s) by member(s) of a subordinate class that is or are intended either to mitigate or deny claims (for example, rents, taxes, prestige), made on that class by superordinate classes (for example, landlords, large farmers, the state) or to advance its own claims (for example, work, land, charity, respect) vis-à-vis those superordinate classes" (1985: 290).

Local resistance may be purely symbolic (e.g. transmission of contested socio-cultural norms and values, rumour spreading) or may integrate more practical dimensions (e.g. continuation of banned practices, roguery). In both cases, resistance does not only compromise the success of external interventions such as state policy or development schemes. It may also engender new practices and new realities for the actors involved in the political 'conflict' (Li 2005; Peluso 1995, 2005; Wadley 2004). In turn, these

unexpected outcomes of everyday politics can play an important role in driving local and broader scale social and environmental change. As Peluso (1995, 2005) illustrates with counter-mapping or Li (2000) with claims to indigenous rights, resistance to external intervention may involve the use of new political means which have impacts on representations (of the environment, the territory, the cultural identity, etc.) and, hence, on social and environmental practices. Therefore, while broad scale development schemes certainly play an important role in moulding the general conditions for local decision-making (e.g. closing or opening up opportunities for livelihoods), the actual outcomes of such schemes are very much contingent on the local “practices of compromise and collusion” that “fill the gap between project plans and on-the-ground realities” (Li 2005: 391). On the basis of the empirical material collected in the two study villages, the following sections give some substance to the points discussed above.

## **6.2. Social differentiation, de-agrarianisation and diversification**

So far, this study’s approach to local socio-environmental change has remained focused on the village scale. Yet, as introduced above, livelihood change and its environmental outcomes tends to vary on a household or individual basis according to what resources and opportunities are accessible for building sustainable livelihoods. In other words, the livelihood and land use changes described in Chapter 5 (Section 5.2) should be analysed as the cumulative outcomes of a variety of individual trajectories that are likely to have differing environmental impacts, from one household to another and from one plot to another. The means available for the research did not allow environmental monitoring at such small scales. However, bearing in mind the place of shifting cultivation in both local land degradation processes and the official environmental discourse (see Chapter 4, Section 4.1.3 and Chapter 5, Section 5.1), individual trajectories of livelihood diversification and de-agrarianisation appear of particular importance. Three main axes of differentiation can help to approach the variability and determinants of these trajectories: access to financial capital, land and labour availability, gender and generation.

### *6.2.1. Access to financial capital*

Even if it does not call into question the existence of a de-agrarianisation process in the

two villages, a look at the survey data in a more disaggregated way introduces some nuance into the degree of livelihood reorientation that individual households have achieved. In particular, it appears that only a few villagers have been able, or willing, to disengage completely from annual cultivation. In Ban Lak Sip only three households out of twenty interviewed have completely abandoned annual cultivation activities. All of them benefited from access to significant financial capital. Mrs. Linh, widowed and one of the village elders, has seven children. Three of her sons are employed in a music band in Luang Prabang, another one is a soldier, one daughter runs a grocery shop in Vientiane and two other daughters have their own families in Ban Lak Sip. She receives regular remittances from her children that allow her to make a living without farming. The two other households that have recently disengaged from annual cultivation are among the economic and political elites of the village. Both have been running a small shop for some time, which provides them with relatively high annual incomes in comparison with the village norm<sup>47</sup>, and their heads occupy or have occupied important positions in the village. Mr. Som is a former headman of Ban Lak Sip. In 2003, he was renting his upland fields to a family from another village. He and his wife were spending most of their time managing a small grocery shop located by the roadside. During his mandate as headman, Mr. Som was accused by a number of villagers of having embezzled money from the village fund (in part for financing the family shop) and was forced to resign. Mr. Xay is one of the village's teachers and his wife has long been employed as a chambermaid by the MSEC project. Motivated by their awareness of the profits made by the first two shopkeepers in the village, Mr. Xay and his wife decided to use their salaries to open a small grocery shop in 2000. At first, farming activities had priority over the small business which was open only during the low agricultural season (i.e. dry season from November to March). But two years later, the family had enough customers and daily income to abandon annual cultivation and make a living from non-farm activities while using their fields to grow teak and fruit trees. They are now allocating a large portion of their incomes for the education of their two children in order to provide them with the skills to better access non-farm jobs:

“I think that working in an office in town is much better than farming. One of the main problems with farming is that the yields are too low because of the short

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<sup>47</sup> While the average annual income per household was 7,000,000 LAK in 2003, these two households declared 9,000,000 and 12,000,000 LAK of revenues. More generally, the average annual income of the families engaged in petty business was around 15,000,000 LAK in 2003.

fallow periods. If we had more land, it might be more profitable to continue agriculture since the fallow periods would be longer and the yields higher. Anyway, we are now investing a lot of time and money in order to give a good education to our children. We have been working very hard in the fields and we don't want the same life for our children" (Mrs. Xay, July 2004).

A similar pattern exists in Ban Done Kang where, out of twenty households surveyed, five have never engaged in annual cultivation and one disengaged from farming in 1996. Two of these households have members who receive regular salaries. Mr. Bounthavy works for the Agriculture and Forestry Office of the Poukhoun district and comes back to Ban Done Kang only during weekends. When he is home, Mr. Bounthavy manages the teak and fruit trees that he planted on his upland fields. His wife opened a small shop in the village in 1994. She also raises poultry, collects forest products, crops vegetables and weaves. By and large, she considers that, with her husband's salary and the income from her shop, they have enough to make a living without engaging in annual cultivation. Similarly, Mr. Aloun is employed as an agricultural technician by the International Rice Research Institute (IRRI) at the experimental centre of Houay Khot, twenty kilometres away from Ban Done Kang. He is paid 15,000 THB per month. His wife is engaged in weaving, poultry farming and firewood collection. Just as the Bounthavy family, with incomes significant enough to buy rice, they planted teak and fruit trees in their upland fields. Another non-farming household of Ban Done Kang benefits from regular remittances. Mr. Yong, a member of the village elders' group, is retired. About ten years ago, when he arrived with his family in Ban Done Kang, he was allocated an agricultural plot by the village chief where he planted banana trees. A year later, with the financial support of relatives who had migrated to the USA, his wife opened a small shop by the roadside. Mr. Yong then gave the banana plantation to his son recently married to a Ban Done Kang woman. Nowadays, apart from the shop, the household is engaged in weaving, firewood collection as well as vegetable and fruit tree cultivation in a small garden near the house.

Access to some form of financial capital (e.g. remittances, regular salaries or even money acquired through less honourable means) appears therefore to be an important

determinant in the process of disengagement from annual cultivation, be that for allowing the elders to retire from active life or for the purpose of developing profitable non-farm activities. A number of studies suggest that wealth-differentiated access to non-farm opportunities is a common feature of many Asian, African and South American rural settings (Barrett *et al.* 2001; Dercon and Krishnan 1996; Jeffrey 2000; Reardon *et al.* 1992, 2000). As Barrett *et al.* point out, “those with the least agricultural assets and income are typically also least able to make up this deficiency through nonfarm earnings because they cannot meet the investment requirements for entry into remunerative nonfarm activities” (2001: 324). In that sense, the emergence of new opportunities in the local business sector is not likely to change the situation for the most disadvantaged villagers. Quite the contrary, with the wealthiest developing more remunerative activities and the poorest confined to low-return occupations, it may contribute to reinforce local inequalities.

While de-agrarianisation is clearly more marked among the wealthiest households of the two study villages, this does not mean that all the households with access to important financial capital have necessarily disengaged from annual cultivation. In Ban Lak Sip for instance, after many years essentially focused on non-farm activities, the Bounlay household re-engaged with annual cultivation in 2003. Yet, this is the first household to have opened a grocery shop in the village – again, with the help of the husband’s civil servant salary – and certainly one of the wealthiest families of the village. Among the twenty sample households of Ban Lak Sip, they had the highest annual income in 2003 (20,000,000 LAK compared to a village average of 7,000,000 LAK). It was also the first household of the village to have a television set and a refrigerator. Despite such a favourable situation, the sixteen-year-old son, a high school student in Luang Prabang, recently started to cultivate Job’s tear on a small part of the family land in order to get some spending money. When interviewed, he stated that farming activities required too much hard work and that his intention was to become a lawyer in town. This example suggests that, besides the observed de-agrarianisation process, there is also a change of attitude towards farming activities. For some young villagers, agricultural activities represent neither a primary means of subsistence nor an envisioned future. They are engaging in annual cultivation just as a young westerner would engage in a holiday job. It has to be noted that this reworking of the idea of agriculture and the values attached to it by the young is certainly not specific to Laos’ rural areas and has been described in

other South-East Asian countries (e.g. Kelly 2000; Rigg 2005b; Rigg and Nattapoolwat 2001).

### 6.2.2. *Land and labour*

Access to land and labour availability also represent significant factors of differentiation. In Ban Done Kang for instance, besides those who benefit from regular salaries or remittances, two other classes of households are completely disengaged from annual cultivation. These are either landless or labour-poor families. Mr. Santhong married a woman of Ban Done Kang in 1997. He settled in the village and was allocated an agricultural plot by the village authorities. One year later, he was ‘forced’ to sell it when the former owner, from a powerful family living in Luang Prabang, came to reclaim the land he had lost after the 1975 socialist revolution. He is now employed occasionally as a construction worker in Luang Prabang but he and his wife also spend a lot of time collecting firewood, bamboo shoots and other forest products. In fact, between 1997 and 2003, the time spent by the household in collecting and hunting activities increased rather significantly from 48 to 83 days per year<sup>48</sup>. With 52 days allocated per year in 2003, the Phonbat household is also significantly engaged in forest product collection. In 1996, Mrs. Phonbat’s husband died and, with the demands of looking after a young child limiting her options, she was forced to give up annual cropping. Forest product gathering now constitutes her principal activity along with small scale vegetable cultivation and tree plantation (fruit and teak). Finally, the Tieng household has never engaged in annual cultivation. Arriving in 1990 (i.e. after the land use planning), the family was allocated 2.5 hectares of agricultural land for perennial cultivation only. Thus, since their arrival in Ban Done Kang, the household has been mixing a number of activities including fruit tree, bamboo and teak plantation work with craftwork, vegetable cultivation and the collection of forest products.

In contrast with the examples above, some households have invested significant energy and resources in order to maintain a productive annual cultivation system. As described earlier, land degradation and declining agricultural productivity in the two study villages

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<sup>48</sup> On average, the time spent by a household in collecting and hunting activities increased from 31 days per year in 1995 to 39 days in 2003 (see Chapter 5, Table 5.5). In fact, compared with the other sample households of the village, the Santhong household is the one that spends the most time on these activities.



is largely associated with increasing land shortage and the acceleration of the agricultural rotations that has occurred over the past fifteen years (see Chapter 5). Yet, it appears that some farming households have been able to stabilize or even lengthen fallow periods while maintaining a one-year cropping cycle. With only 1.8 hectares of agricultural land, the Bounlong family is among those who have the smallest land holding in Ban Lak Sip<sup>49</sup>. However, they are also among the few households displaced from Houay Nokpit who are still cultivating (illegally) annual crops on their former lands. Along with using unallocated land, this household has been able to maintain a six-year fallow period and a one-year cropping cycle since 1995 by decreasing significantly the surface cultivated annually – from two hectares in 1995 to 0.5 hectares in 2003 – while engaging more intensively in alternative activities such as livestock farming (increasing labour allocation from 2 to 95 days per year) and vegetable cultivation (from 122 to 180 days allocated per year). In the same way, the Somboun household in Ban Done Kang has maintained a four-year fallow period and a one-year cropping cycle since 1990 by reducing the surface areas used for annual crops. With 2.8 hectares available for annual crops, they were only cultivating 0.6 hectares in 1995 and 0.4 hectares in 2003. At the same time, they have significantly intensified vegetable cultivation (from 31 to 62 days allocated per year) and forest product collection (from 37 to 72 days allocated per year). Finally, while the Thongdeng household in Ban Lak Sip has an average-sized land holding (three hectares) and despite the fact that they have slightly increased the surface area allocated to annual crops (from 1.5 to 1.8 hectares between 1995 and 2003), they have been able to lengthen their fallow periods from 4.5 years to 5 years by renting additional land outside the village<sup>50</sup>. Just as with the two preceding households, this process has been accompanied by a significant intensification of vegetable cultivation (from 48 to 103 days allocated per year). Thus, while a very large majority of farmers have been driven to accelerate agricultural rotations on their land, some have been able to counter the negative impacts of population growth, land reform and resettlement policy by gaining access, legally or illegally, to additional agricultural land and/or juggling annual cultivation with livelihood diversification and land use management in order to maintain relatively long fallow periods and preserve the productivity of the cropping system.

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<sup>49</sup> The average agricultural land tenure in Ban Lak Sip is around 2.7 hectares per household.

<sup>50</sup> This land belongs to a relative emigrated in Vientiane who receives a part of the rice production in exchange for the loan.

All these ‘extreme cases’ show relatively simple and direct relationships between engagement/disengagement in annual cultivation and access to financial capital, access to land or labour availability. But for many households, livelihood trajectories appear more ‘uncertain’, characterized by tensions between a desire to abandon farming activities that are perceived as unprofitable and the consequences of an increased involvement in non-farm activities for agriculture and subsistence production. So far, a large majority of the households surveyed in the two study villages have not been able or willing to abandon completely annual cultivation. Following the discussion above, a first explanation for this might be that, due to a generally low level of access to financial capital, few have access to non-farm occupations. While this is probably true for a number of households, a second explanation might be that accessible non-farm occupations often do not provide the villagers with incomes significant enough to meet their subsistence needs. Indeed, besides the issue of initial investment, the shift towards labour-intensive non-farm activities implies a significant trade-off in terms of vulnerability. Engaging in non-farm activities means less or no labour available for annual cultivation. Thus, in the context of the two study villages, it also means a general shift from subsistence economy – production of rice for home consumption notably – to market economy where non-farming households must have the insurance of incomes significant enough (and stable enough) to buy rice and other consumption goods.

The recent trajectory of the Viengkham household is rather illustrative of these tensions between labour availability, subsistence production and non-farm incomes. This household is a family of three. Mr. Viengkham and his wife are in their fifties, both mainly engaged in rice, Job’s tear and vegetable cultivation. They have invested in the education of their twenty year old daughter in order to provide her with better opportunities for non-farm employment. During an interview in July 2004, Mr. Viengkham described:

“Our daughter studied a lot but she had to stop in high school because we didn’t have enough money for her studies. We invested in her education because we wanted her to become a nurse. [...] In 1994, we sold a teak plot because we needed money for financing the studies of our daughter and for renovating our house”.

After their daughter tried without success to find a job in Luang Prabang, they supported her efforts to establish of a small grocery shop in the village:

“Our daughter opened a shop with the familial savings. She doesn’t want to work in the fields because the authorities threaten agriculture in the area. There is no future in farming for the young generations. Business is a good occupation, much easier than farming. Business also provides higher incomes. However, if you have a shop, you need to buy rice because you have less labour for farming and you cultivate smaller plots”.

One year and a half later, in November 2005, Ms. Viengkham was back helping her parents in the fields. In the meantime, she had closed the (unprofitable) shop and had been working for a few months as a chambermaid in a Luang Prabang hotel. However, with a salary too meagre to rent accommodation in town and without her own vehicle, she was spending a lot of money in transportation and remained largely dependant on her parents’ agricultural production. Thus, while they have been willing and able to engage in non-farm activities – i.e. investing in education, raising sufficient financial capital for establishing a small business, getting access to non-farm employment in town – the resulting lack of labour for farming and low non-farm incomes have forced the Viengkham family to reorientate its strategy towards full-time on-farm activities.

In fact, looking at the baseline survey data in the two study villages, a household’s labour availability appears as an important factor conditioning the possible level of engagement in non-farm activities. The farming households that have members engaged in full-time non-farm activities (e.g. shopkeeping, factory labour) have an average of 3.6 active individuals compared to 2.8 for the other farming households. Studies in Vietnam make a similar point, suggesting that labour availability is often an important determinant for the decision of rural households to diversify their activities (Bosma *et al.* 2005; Van de Walle and Cratty 2004). As Van de Walle and Cratty put it, “a household’s labour endowment will influence the opportunity costs of displacing labour from other essential activities as well as the risks of doing so. More labour units introduces a flexibility into work arrangements that helps raise returns” (2004: 248).

These observations link with the concept of ‘risk-averse’ households put forward by Ellis (1992, 1998, 2000) and others (e.g. Bryceson 1996; Mendola 2007). These authors posit that rural households in developing countries are, of necessity, ‘risk-averse’. They often have to make decisions that involve the subsistence of the social unit in contexts

of high uncertainty (induced by factors like natural hazards, market fluctuations or weak institutions). As a consequence, livelihood diversification is often the main strategy employed by these households for anticipating the potential failure of a single activity and mitigating the negative consequences that such failure may have for their welfare. In this ‘risk spreading’ strategy, diversification into non-farm occupations is often considered as the best option. Indeed, in contrast with on-farm diversification, it leads to lower risk correlation between livelihood activities (e.g. mixed cropping may minimize the risks related to market fluctuations but, in the case of drought, all the income sources will be affected simultaneously). Following this perspective, the abovementioned Viengkham family and, more generally, all the households who do not have sufficient labour and capital for diversifying their activities towards the non-farm sector may be considered as being particularly vulnerable to potential natural and socio-economic shocks or stresses.

### *6.2.3. Gender and generation*

Engagement in non-farm activities appears also significantly differentiated according to gender and age group. Considering four main classes of non-farm activities – some of which have developed recently with economic transition (i.e. worker and shopkeeper, see Chapter 5, Section 5.2.2) – two trends appear clearly. Men are much more engaged in non-farm activities than women and they are not engaged in the same activities (Figure 6.1). With 54 percent of men engaged in some form of non-farm activity and 28 percent of women, the ratio is almost of 2:1. Men constitute a very large majority of the workers (either occasional or permanent), civil servants and project staff. In contrast, shopkeeping represents the single most important non-farm activity for women. Important differences also emerge on a generational basis (Figure 6.2). Most notably, non-farm occupations are concentrated among younger adults, those aged between 16 and 39. Furthermore, it is the youngest who are most likely to be engaged in permanent work. Those few older adults who are engaged in non-farm work are mostly involved in shopkeeping.

Figure 6.1: Gender and engagement in different classes of non-farm activities<sup>51</sup>.

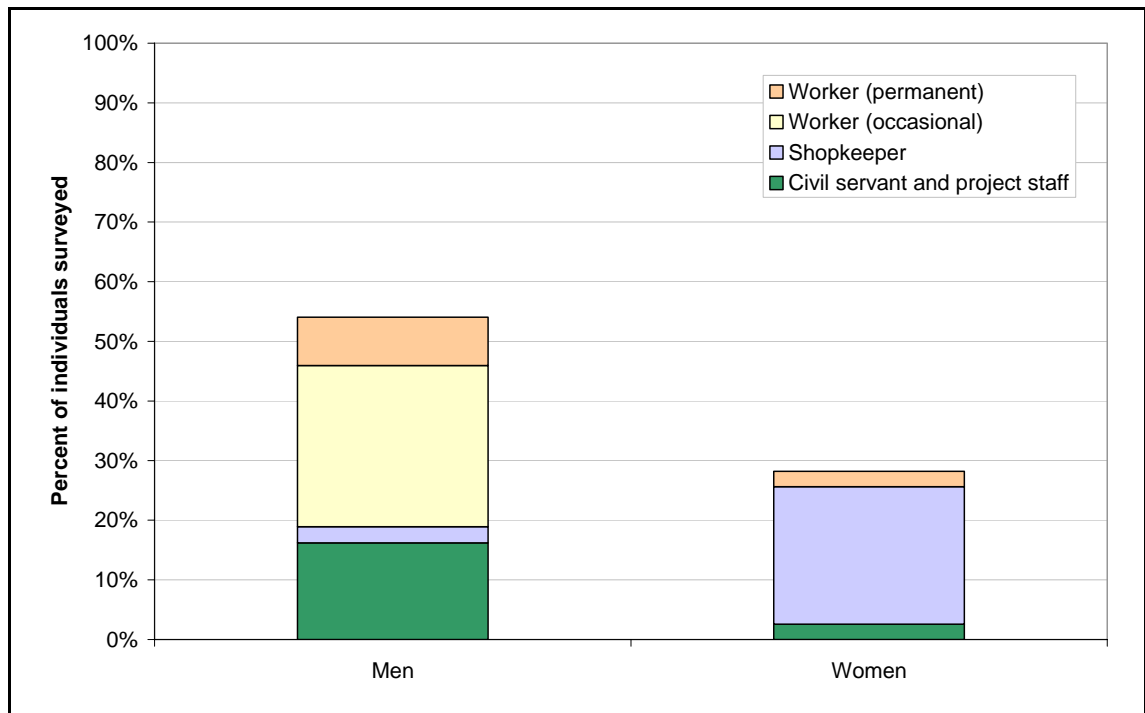
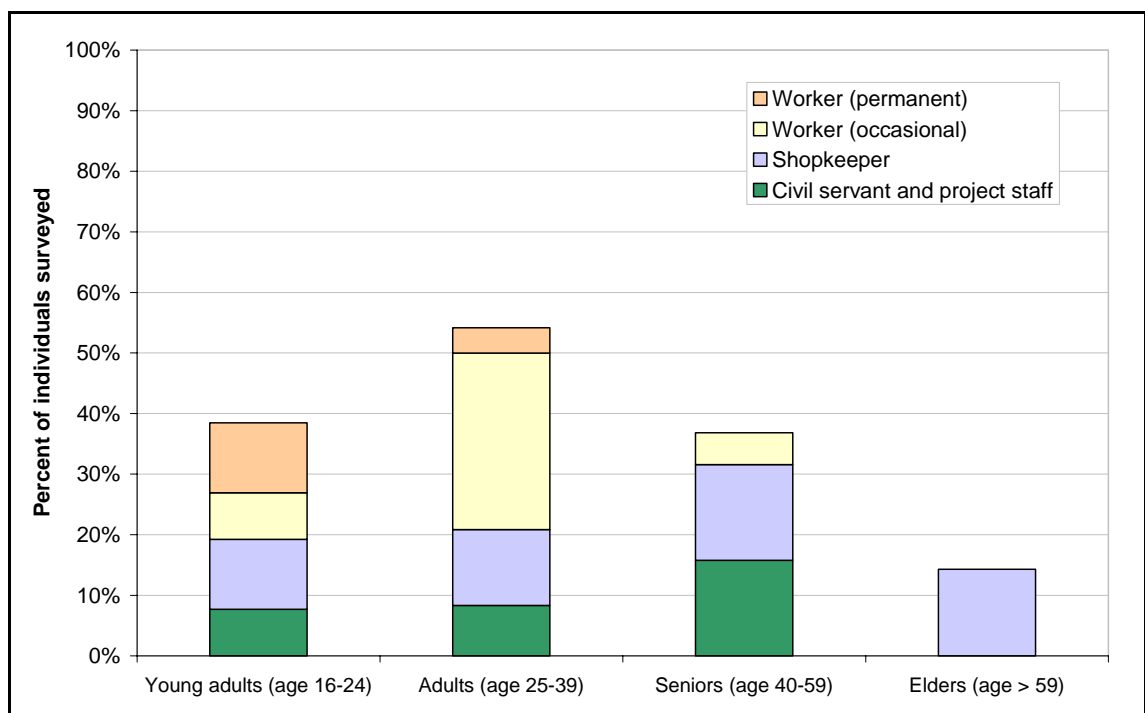


Figure 6.2: Age groups and engagement in different classes of non-farm activities<sup>52</sup>.



<sup>51</sup> The figure is based on ten sample households in each study village. Among a total of 98 individuals, only men and women over 15 were considered (i.e. 76 individuals).

<sup>52</sup> The figure is based on ten sample households in each study village (i.e. 76 individuals from 16 to 74 years old).

In general, therefore, it seems that the new employment opportunities brought about by economic transition (e.g. factory or construction work, petty business) are not equally accessible to the entire population. While interest in these new activities is often shared, many women still work in the fields while their husbands are engaged in non-farm activities. In this regard, education is likely to play a significant differentiating role. In particular, there are fewer illiterate men and a higher proportion of men with secondary education or university degrees (Table 6.1). As a result, men benefit from better access to civil service, staff and skilled worker positions. In fact, these gender inequalities in education and the role they play in differentiating women and men's access to non-farm employment are not specific to our case studies and are frequently acknowledged as a major development issue in Laos (e.g. ADB 2004; Fox 2003; GoL 2003, 2005b; Thompson and Baden 1993).

Similarly, permanent employment is essentially concentrated among young adults and particularly those with a generally higher education level (Table 6.2). In that sense, young adults are those who have benefited the most from the recent economic transition. Many opportunities for full-time non-farm employment have emerged since the early 1990s (Heuangsavath 2004) and these younger job market entrants are more likely to have the skills to sell and the inclination to take up such employment. In a recent study on education and employment wages in Laos, Onphanhdala and Suruga (2007) find that young workers (i.e. those who have entered the labour market after the economic transition was engaged) benefit from considerably higher returns on education than pre-transition workers. Thus, the young do not only have more opportunities for non-farm work than the older generations, they also have stronger financial incentives for engaging in these activities.

*Table 6.1: Education level per gender in the two study villages.*

Education level	Men	Women
Illiteracy	15.2%	29.3%
Primary	44.0%	40.1%
Secondary	34.4%	30.6%
University degree	6.3%	0.0%

*Table 6.2: Education level per age groups in the two study villages.*

Education level	Adults (age 16-39)	Seniors (age 40-59)	Elders (age > 59)
Illiteracy	3.1%	42.2%	91.7%
Primary	57.7%	31.1%	8.3%
Secondary	39.2%	16.1%	0.0%
University degree	0.0%	10.6%	0.0%

As Rigg and Nattapoolwat (2001) note for northern Thailand, it is not clear whether such generational differences are just emblematic of life course changes or whether they are representative of a more fundamental, long term reworking of rural livelihoods. Young people may indeed take on non-farm occupations for a few years and then move into farm-based activities as they mature. At first view, the story of Mr. Mone, a 31 year-old resident of Ban Lak Sip, would argue for that thesis:

“We went to Vientiane during two years. This was two years ago. I was working as driver in a water factory. I found this job thanks to my sister who lives and Vientiane and works in a market. She knows a man at the factory and asked him to hire me. We moved to Vientiane because farming was becoming impossible, because the authorities want us to abandon upland rice cultivation. [...] My wife was working in a wood processing company. She got bored with the life in Vientiane because she didn't know anybody there. That's why we came back in Ban Lak Sip. We had more money in Vientiane but we were unhappy. Now, in the village, we don't have any money but we are close to our friends and relatives. We are now growing vegetables in our garden in order to make a living. [...] You know, I didn't sell my land because I knew I would come back. [...] I don't want to go back to Vientiane, or maybe for a few months, to earn some money and then come back in the village” (Mr. Mone, December 2006).

At an earlier period of their life, thus, Mr. and Mrs. Mone have been looking for, and have indeed found an alternative to farming, providing them with higher and more regular incomes and, perhaps, fulfilling their desire for an urban, ‘modern’ life. However, this successful reconversion had a social cost that pushed the family to backtrack a few years later. More than economic conditions and in spite of the threats that land degradation and land policy pose to upland cultivation, what seems (now) to

matter the most to Mr. and Mrs. Mone is community life and the proximity to their relatives. For these assets, they are ready to pay a significant price, including low and irregular incomes and hard work in the fields<sup>53</sup>. However, it would be an exaggeration to conclude that the increasing engagement in non-farm work observed in our two study villages reflects only aspirational changes along the life course of the villagers. First, Mr. and Mrs. Mone do not have a preference for farming in itself. In fact, they are farmers for reasons that are extrinsic to the occupation (i.e. their friends and relatives are living in an area where farming is the main economic option). Considering that they have been willing to move some 400 kilometres away in order to find a non-farm job, if the same opportunity was open to them in Ban Lak Sip, they would very probably take it on. Second, as shown by some scholars, local livelihood patterns and labour markets do not only reflect particular economic and social conditions. They are also influenced by historical processes (Rigg and Nattapoolwat 2001; Rigg *et al.* 2004).

Thus, as the economic transition proceeds and brings about new incentives and new livelihood opportunities, as people get more educated, more informed and as they integrate new perspectives from outside, local aspirations change and people start reworking their livelihood to fit with new desires. From there, novel work practices may quickly become the expected norm, even if they are sometimes radically different from the ‘traditional’ ones (e.g. Elmhirst 2002). As shown through a number of interviews quoted earlier, the interest in non-farm jobs is clearly not a specificity of the youngest generation. If the old generations generally accept their condition of farmer, they often describe it negatively and they invest a lot of energy and resources for the young to gain access to non-farm work. Thus, if non-farm employment has not yet become the norm, it has certainly become the ambition of many villagers.

Finally, along with education and temporality, cultural conception of gender roles and capabilities has probably also played a part in the observed differentiation process. In Laos, technical and decision-making skills tend to be ascribed to men while budgeting and trade are generally the domains of women (GoL 2004b; Inuma 1992; Thompson

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<sup>53</sup> This example puts clearly into question the cold, ‘economistic’ perspective that views peasants as entrepreneurs and rural livelihoods as largely determined by profit maximization. Viewed through the economic lens, Mr. and Mrs. Mone’s re-engagement in farm-based occupations is clearly an irrational behaviour. And so are the motivations underlying their choice.



and Baden 1993). Besides, women's traditional responsibility for childcare and domestic work often limits their potential mobility and, thus, their access to extra-local opportunities. Analysing gender roles in the Khamu tradition, Ireson (1996) notes that women hardly ever leave the village land and that extra-local economic activities (e.g. trade of the household's production in town, wage labour outside the village) are generally undertaken by men. According to these patterns, women would therefore engage more easily in local petty business, allowing them to pursue the household's reproductive tasks. In contrast, men would fit better in extra-local occupations, jobs requiring skilled manual labour (e.g. masonry, utilisation of mechanical devices) and administrative positions (e.g. civil servants). This differentiation pattern is obvious at the national scale. According to a recent government report, women largely dominate the informal sector (e.g. small scale retail businesses, restaurants, weaving) and, while they are involved at the same level than men in the formal sector (e.g. mining, manufacturing, electricity), they generally occupy temporary, low level and/or unskilled worker positions (GoL 2005b). Furthermore, many of the non-farm occupations available to the Ban Lak Sip and Ban Done Kang villagers require heavy manual labour (e.g. logging, woodworking, masonry). In these conditions, the widespread perception that women have less physical strength than men tends to place the latter ahead of the former in the 'labour queue' (Matthews and Nee 2000; Reskin and Roos 1990). As with education, employers' preference for physically strong individuals would also explain why a majority of workers in our two study villages are relatively young, aged between 16 and 39. Accordingly, older men and women in general are essentially involved in 'light' occupations such as shopkeeping.

At the time of the present study, the picture presented by Ban Lak Sip and Ban Done Kang suggests that, under the influence of a number of factors (e.g. unequal access to education, cultural conception of gender roles and gender-segmented labour market), a process of 'feminization of the agriculture' (Boserup 1970b; Deere 2005; Ganguly and Swapan 2003) is under way. Men are engaging in non-farm employment at a faster rate than women, with the consequence that the latter play an increasingly prominent role in agriculture. A similar trend was already observed in the early 1980s in rural villages of Vientiane province (Mukherjee and Jose 1982) and, later in the 1990s, in more remote areas (Ireson 1996). Whether or not this process will last remains an open question, as studies in China (Matthews and Nee 2000), Indonesia (Elmhirst 2002; Wolf 1992) and

Thailand (Parnwell and Arghiros 1996) suggest that the growth of the industrial sector may lead to a flow of labour in the opposite direction (i.e. young women being sucked out of agriculture by manufacturing industries). As a matter of fact, recent research in Laos indicates that young women's out-migration for work in the manufacturing industries of Vientiane is already a significant feature of many rural villages (Bouahom *et al.* 2004; Rigg 2007a).

#### 6.2.4. *Uneven development*

Approached at the village scale (see Chapter 5, Section 5.2.4) or at the household and individual levels, livelihood and land use change in the two study villages reveal an important diversity of trajectories. These trajectories appear strongly conditioned or influenced by access to particular resources (e.g. financial capital, land, labour). Clearly, disengagement from annual cultivation takes different forms and has different meanings depending on the assets that are accessible to households and individuals. For the elders, the abandonment of annual cultivation is often a first step in their retirement from active life. The provision of financial or in kind support by relatives is a precondition. For younger households, a complete disengagement from annual cultivation may be part of two different dynamics. For those who benefit from regular salaries, remittances or access to other forms of financial capital, making a living without annual cultivation is often synonymous with full-time engagement in non-farm activities. Indeed, engaging in intensive non-farm activities requires significant financial means to assume the initial investment for developing or gaining access to profitable occupations (e.g. establishment of a petty business, educational expenses). In that case – and this point appeared recurrently during interviews – replacing annual cultivation by non-farm occupations is often an issue of well-being<sup>54</sup>. While farming has come to be considered as a laborious occupation with uncertain returns, non-farm jobs often represent the insurance of more regular and/or higher revenues through effortless activities and, more generally, a better future for the young generations. In contrast, in the case of households with limited financial capital, non-engagement in annual cultivation is more a consequence of limited access to land and/or limited labour. And when the land or labour shortage is severe, these households are often driven to impose significant

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<sup>54</sup> Research on well-being in rural Thailand also points out that engagement in non-farm jobs is frequently considered by populations as an improvement of their quality of life (Jongudomkarn and Camfield 2005).

pressure on forest resources through hunting and foraging.

In a large majority of cases, however, the disengagement from annual cultivation is only relative. Rather than annual cultivation being replaced by another activity, we observe a reorganization of the household's time and labour in order to engage with a more diverse set of livelihood activities. The few abovementioned households that have maintained relatively long fallow periods are particularly illustrative of this process. They have been able to do so, not only by changing their land use practices or gaining access to additional land, but also by reallocating time on new income-generating activities (e.g. vegetable cultivation, livestock farming). Again, diversification may take various forms depending on the assets that are available to households. Those who have limited financial capital and labour will be less likely than others to diversify towards non-farm activities. On the contrary, better-off households long focused on non-farm occupations may choose to diversify their activities by engaging extra labour in agriculture. At the individual scale, education, age and gender appear also as important factors conditioning the potential integration of non-farm activities in the household economy and the nature of these activities. For instance, at the time of the present study, diversification towards non-farm activities is likely to be easier for the households that have invested in the education of the young and, in particular, the young men. Overall, the 'geographies of development' illustrated by our two study villages appear clearly uneven and structured, not only by broad-scale political-economic differentiation factors – such as those characterizing the expansion of capitalism (see Smith 1984) – but also, by context-specific and individually-differentiated socio-economic and environmental variables (Nightingale 2003).

Wide-ranging changes in local livelihood systems and, importantly, the engagement of villagers with new forms of economic activities (i.e. non-farm based and cash-oriented occupations) raise important questions with regard to the structure of upland societies and the evolution of wealth inequalities in the long term. As described by Rigg (2005b, 2006b), the growth of the non-farm labour market in rural Southeast Asia engenders a progressive de-linking of the reproduction of poverty from land and other agricultural resources. Yet, based on the empirical material presented above, it seems that, even if the basis for livelihoods is changing, the old patterns of wealth and poverty may be reproduced at the level of access to non-farm employment (see Section 6.2.1). Wealthy

households have sufficient resources to gain access or develop remunerative non-farm activities while poor households remain tied to increasingly unprofitable land-based activities. It seems reasonable, however, not to take a too pessimistic stand in front of these inequalities which may represent more a transitional state than a durable ‘curse’ for the rural poor. As the economic transition proceeds in Laos, poor households are likely to have access to an increasing range of non-farm opportunities. These opportunities may not be those with the highest potential for income generation. They may also require leaving the village. However, they can allow the poor to construct more successful livelihood systems and improve their condition. As Rigg puts it, “in the new rural world beginning to emerge in Laos, some of the land poor and landless have managed to escape poverty through creative engagement with non-farm activities” (Rigg 2005a: 186). Whether these individuals represent marginal cases or constitute a more significant proportion of the rural poor, their example suggests that an important challenge for Laos’ policy-makers lies into making non-farm opportunities available to the majority.

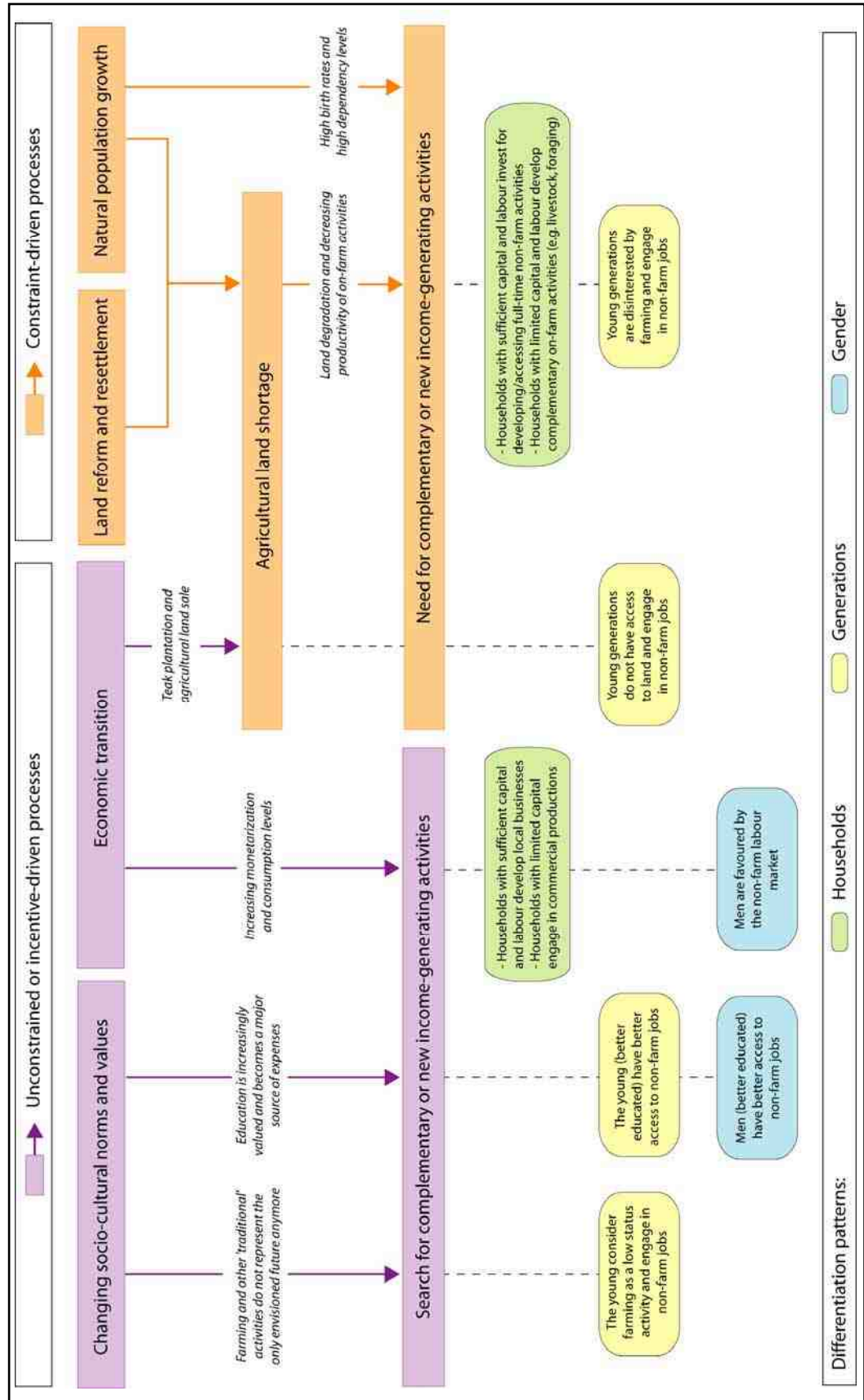
The various household and individual trajectories described above also raise important questions with regard to local inequalities in the face of the land degradation issue. It has to be noted that, apart from increased pressure on forest resources by landless, land-poor or labour-poor households, it is difficult to assess the exact environmental impacts of the livelihood transition observed in our two study villages. For instance, among the non-farming households surveyed, some are renting their agricultural land, some have sold it or given it away, while others have let it under fallow or converted it into tree plantations. Environmental outcomes are thus likely to vary on a case by case basis. However, what appears more clearly is that the burden of land degradation – either soil fertility decline or forest resource depletion – is probably heavier on the households that lack the necessary assets (e.g. financial capital, education, labour) to disengage from annual cultivation and engage in, or develop, profitable non-farm activities. Further down the line, within these particular households, women and the old are often on the front line. Therefore, while the basis for livelihoods is progressively shifting from farm to non-farm, unequal access to non-farm opportunities tends to leave poor and labour-poor households, as well as women and old individuals, behind, contending with various land degradation-related issues (e.g. decreasing productivity of land-based activities, increased labour requirements). Once again, there may still be some prospects

for these disadvantaged villagers. As the present study has shown, some households have been able to construct land use strategies which allow them, at least for the medium term, to control what is probably the main proximate cause of land degradation, that is, the acceleration of the agricultural rotations (see Section 6.2.2). Besides, though more hypothetically, Laos' economic development and industrial growth might also provide those who are the most affected by environmental degradation – i.e. women – with a way out of farming (see Section 6.2.3).

### **6.3. 'External' factors and 'internal' drivers**

Livelihood diversification is driven by numerous factors which coexist at different scales and have differentiated impacts on household and individual trajectories (see Figure 6.3). Part of the diversification process observed in the two study villages is directly related to state intervention in the uplands (e.g. land reform and resettlement policy), its conjunction with natural population growth, and the constraints imposed on 'traditional' livelihoods by the resulting agricultural land shortage (see Chapter 5, Section 5.2.4). Along with state intervention, local livelihood diversification is also significantly driven by economic incentives. For instance, motivated by the demand of wealthy urban residents willing to acquire land in rural areas, timber plantation and land sale contribute to reinforce local agricultural land shortage (see Chapter 5, Section 5.2.2). Hence, they probably increase the local need for new income-generating activities. At the same time, increasing monetarization and consumption levels play an important role in propelling a desire to engage in cash-oriented activities (e.g. commercial crops, local businesses). As described earlier (see Section 6.2.1), the engagement of some young villagers in commercial cropping for the purpose of getting some spending money is particularly illustrative of this process.

Figure 6.3: Main determinants for livelihood diversification and associated differentiation patterns observed in the two study villages.



However, aside from the uneven influences of ‘external’ economic and political forces, the diversification process observed is also linked to local socio-cultural change. As noted earlier (Section 6.2.3), the non-farm labour market started to develop in rural Laos after the economic reform of the mid-1980s (Heuangsavath 2004). Thus, when the first settlers arrived in the two study villages during the 1960-70s, opportunities for non-farm employment were probably rather limited. Besides, with a limited access to the media (e.g. electricity and the first television set arrived in Ban Lak Sip in 2000) and human mobility restrained by poor transportation infrastructures (e.g. access to Luang Prabang by the paved road was effective in 1990 in Ban Done Kang and 1992 in Ban Lak Sip), villagers’ access to external perspectives was probably rather limited too. Hence, farming and other ‘traditional’ activities (e.g. hunting, foraging, handicraft) were probably the expected norm for a majority of villagers. A few decades later, however, interviews and life histories suggest that non-farm employment is the ambition of many village residents and, especially, the young (see Section 6.2.3). Of course, land degradation, the decreasing profitability of agriculture and the pledge of more regular and/or higher incomes with non-farm activities have influenced the villagers’ preferences. However, besides purely economic motives and in opposition to farming, non-farm employment also has the lure of modernity:

“My daughter wants to work as a salesperson or in an office [...]. In fact, all my children would like to work in an office in town. They think that farm work is too hard, too dirty, too backward. Working in town is more interesting for them. The young want to spend money and have fun in town while the old want to save up for their old days” (Mrs. Soupanh, 49, Ban Lak Sip, July 2004).

“I am very satisfied to have opened my shop. Business is a promising trade and a modern activity. [...] Farmers are often poor and uneducated people” (Mrs. Bounthavy, 30, Ban Done Kang, August 2004).

“Working and living in town is much better than in the village. When you work in town, you see many things and meet different people. Life is more modern there. It allows you to grow up” (Mr. Bountieng, 16, Ban Done Kang, August 2004).

Similar considerations are given to education, valued both for itself and as a means to improve the access of the young to more alluring non-farm jobs:

“Spending money for the education of our children is good because it will improve their chances to find a job in town. Farming is much less interesting compared to the kind of jobs that you can find in town. [...] You have to know how to read if you want to find a good job. In any case, knowing how to read is a good thing” (Mrs. Soupanh, 49, Ban Lak Sip, July 2004).

“We invest a lot in the education of our children because we want them to have a good job, not in the farm. Giving a good education to the young is important because modern jobs require knowing how to read and write” (Mr. Lae, Ban Lak Sip, July 2004).

Thus, on the one hand, aspirations of the parents for their children and better education are likely to reinforce the ambitions of the young for non-farm employment. On the other hand, education, through its economic cost, has probably indirectly contributed to increase the need of the household heads for complementary income-generating activities. In fact, as described earlier (Section 6.2.2), educational expenses have even pushed some households to sell land.

It may be noted that these observations call into question conventional typologies employed for differentiating household diversification strategies. For instance, trying to identify the different motives underlying livelihood diversification of rural households in developing countries, scholars like White and Wiradi (1989) or Hart (1994) distinguish diversification as a ‘survival’ strategy and diversification as an ‘accumulation’ strategy. In the first instance, poor households diversify their activities in an attempt to cope with temporary shocks (e.g. food shortage, economic crisis) or adapt to longer term situations of stress (e.g. land shortage, low crop productivity). In the second instance, better-off households diversify their activities in order to raise their standards of living, accumulate assets and widen their livelihood opportunities. Some scholars add a third, intermediate category – i.e. diversification for ‘consolidation’ – which reflects the attempts of average households to reduce their vulnerability to perceived risks (Ellis 2000; Hussein and Nelson 1998; Scoones 1998).

Where do the sample households presented above fit within these typologies of livelihood diversification? There is no clear answer to that question. Indeed, differentiating ‘survival’, ‘consolidation’ and ‘accumulation’ strategies may be useful as



a means for conceptualizing the motives and opportunities underlying livelihood change but it has the major disadvantage of simplifying the picture and, importantly, overlooking the contingent and dynamic nature of livelihoods. In practice, the determinants of diversification for a particular household are various, rarely separable and shaped by changes over time in the broader socio-economic and biophysical environment (Ellis 1998). Thus, following variations in the relative importance of these determinants, a diversification strategy may be characterized, at some point in time, as a reaction to distress while, a few months or a few years later, it would fall into another category.

Furthermore, there is a clear issue of scale for any attempt to categorize livelihood strategies. For instance, a diversification strategy viewed at the household scale may be typical of a ‘survival’ situation while, at the same time, the household members who engage the diversification process may be largely doing so for fulfilling their personal ambitions, sometimes against the wishes of the majority (e.g. Hart 1992; Wolf 1992). Hence, the very concept of ‘household strategy’ – with the sense of collectively planned actions that it suggests – appears rather questionable (Rigg 1998). These points link up with some of the main criticisms raised with regard to the ‘Sustainable Livelihoods Approach’ (see Chapter 3, Section 3.2.2). Indeed, while the SLA framework is certainly a useful instrument for normalizing comparative approaches to livelihood change, its frequent recourse to typologies and its lack of sensitivity to scale often make it too static and rigid to provide in-depth insights into the dynamic complexity of local livelihoods.

Going back to Laos’ upland development policy, the observed diversity of development trajectories also has significant implications for state discourse and intervention. First, livelihood differentiation – both inter and intra-community – challenges whether it is possible to write about ‘upland livelihoods’ as it is employed in the official environmental discourse. To some extent, it also calls for a reassessment of the perceived upland ‘issue’ (see Chapter 4, Section 4.1.3). For a number of households in the two villages surveyed, shifting cultivation and farming in general no longer represent key livelihood activities. Among those who are still engaged in shifting cultivation, some have been able to maintain the productivity of their land. Thus, the idea that upland livelihoods and population growth necessarily lead to a ‘downward spiral’ of land degradation and increased poverty appears exaggerated. In that sense,

social differentiation engenders disjunctions between what is perceived by the state and what is actually experienced by upland populations. The ‘downward spiral’ model may be true for a significant proportion of upland-dwellers, but it can hardly be generalized to the entire upland context.

Second, social differentiation engenders disjunctions between the aims and the accomplishments of the state. As described earlier (Chapter 4, Section 4.2), state policy in the uplands is clearly aimed at eradicating shifting cultivation and conserving forest resources. The case studies suggest that the accomplishment of these objectives is critically dependent on the resources that are accessible to local populations. Land regulation and resettlement have indeed freed significant land from human activities – including shifting cultivation – and certainly contributed to forest conservation and regeneration (see Chapter 5, Section 5.3.2). However, the impact of these measures on local livelihoods and, importantly, local engagement in shifting cultivation remains rather ambiguous. Instead of a common development path propelled by upland development policy, the two study villages are characterized by a diversity of individual trajectories. In fact, few households have disengaged completely from shifting cultivation. Some, often the wealthiest ones, have developed sustainable non-farm alternatives. Others, landless and/or labour-poor households, have intensified their pressure on forest resources. However, in spite of land degradation and regulatory measures, a majority of households have kept on with their shifting cultivation practices. Some have done so because they lack access to the resources necessary for developing alternative livelihoods (e.g. financial capital, labour, education). Others have done so because they had gained access to additional land or developed successful land management systems.

Ironically, among the households that have followed a livelihood trajectory that is compatible with the national objectives of upland development (i.e. those that have completely moved away from annual cultivation and engaged successfully in sustainable, often non-farm, activities), few exactly fit the state’s vision of the upland context. Just as the analysis of socio-environmental change at the village scale highlighted important links between local livelihood decisions and global or regional markets (see Chapter 5, Section 5.2.2), most of the non-farming households described above have succeeded in reworking their livelihoods thanks to remittances or regular

incomes from sources that are external to the village (e.g. expatriate relatives, state agencies, foreign development projects). Thus, in contrast with the official perspective that views upland livelihood and environmental issues as internally generated and controlled (as per the ‘downward spiral’ of land degradation and poverty that is assumed to result from upland ecological fragility, population growth and traditional agriculture; see Chapter 4, Section 4.1.3), upland societies appear networked into wider associations which make the predicaments and the opportunities of the villagers contingent on a much wider perspective. This observation suggests that dealing more comprehensively with the upland ‘issue’ requires looking not only into upland social and environmental spaces but also into the links and associations of upland societies with other people and places. Furthermore, one must remain cautious as regards the expected social and environmental outcomes of market integration. As the two case studies illustrate, the latter can be as much a source of new economic opportunities and reduced vulnerability to land degradation as a factor of increased wealth inequalities and intensified pressure on local natural resources.

#### **6.4. Everyday politics**

The previous sections have sought to illustrate the role played by local differentiation patterns and local cultural change in propelling and shaping the particular socio-environmental transition observed in our two study villages. One of the main conclusions is that, even if they are subjected to powerful and wide-ranging state intervention and despite important environmental constraints, upland populations may still have a significant level of agency in the economic field. Widening the field of analysis, the following section focuses on local agency in the political arena.

While the political weight of upland populations has generally increased across the Southeast Asian region – thanks to the expansion of the civil society and an increasing democratisation of many Southeast Asian governments (Clarke 2001), Laos appears to be lagging behind (Rigg 2005a; Stuart-Fox 2005). As introduced earlier (see Chapter 4, Section 4.3.2), upland minorities of Laos are clearly under-represented in the state’s organs of power and decision-making. More generally, local government and democratic participation at the local level remain very limited. As described by Stuart-Fox (2005), after the short period of decentralization that followed introduction of the

New Economic Mechanism in 1986, new political reforms, enacted by the 1991 National Constitution, have led to a radical re-centralization of decision-making towards the Party and the central government. While the provincial authorities maintained a significant level of autonomy, village authorities have become simple managers for the implementation of strategies, policies and regulations devised at higher levels. As Stuart-Fox puts it, “the village chief has become less a representative of the villagers and more a representative of the district administration in the village (in other words, of the Party and the state). [...] As many villages are quite small (with as few as 100 inhabitants or 21 households), village chiefs, particularly of minority villages, tend to lack political influence at the district level, and so are able to do little or nothing for their villages. Their role is to inform villagers of their duties and responsibilities, not to promote their rights and interests” (2005: 21). Upland populations and their elites appear thus largely excluded from the political stage of Laos.

However, as pointed out by Scott (1976, 1985), formal political institutions are not the only way for politically-marginal populations to assert their claims and/or deny or mitigate the claims of other, more powerful, actors. For instance, in the face of a particular state policy deemed negatively, the powerless may engage in subtle and covert acts of resistance which, on a day-to-day basis, compromise the efficiency of state intervention. In fact, among marginal populations, ‘gentle’ forms of resistance such as passive non-compliance, foot-dragging or deception are often preferred to open rebellion for they minimize the risk and the potential intensity of repression by opposing parties. While they certainly differ from rebellion and, even more, from engagement in formal politics, everyday acts of resistance are nevertheless always politicized. Regarding resistance to conservation policy for example, “the continuation of banned practices is itself a political statement, as it contains, alongside other motivations, an implicit statement that these practices should be allowed – someone hunting inside a national park is automatically and implicitly making a statement that hunting should be allowed in a national park” (Holmes 2007: 188). Of course, illegal actions may not be primarily motivated by a willingness to contest the rule imposed by powerful actors. As Holmes (2007) points out, there is a qualitative distinction between explicit resistance, where illegal actions are meant to express particular claims or discontentments, and implicit resistance, where illegal actions are not deliberate (i.e. done without knowledge of the legal context or driven by external circumstances). In any case, however, because

they constantly undermine the efficiency of external interventions and constrain the projects of powerful actors, local everyday acts of resistance by marginal populations may be the foundations for broader scale change, even if they take place in supposedly restrictive political environments (e.g. Beard 1999, 2002; Kerkvliet 1995, 2005).

While local resistance may occur at different levels, local re-territorialisation and counter-territorialisation efforts are particularly important for understanding the way upland populations resist to state power in Laos. As pointed out by Peluso, “in many parts of the world today, territorial solutions to land use and other resource conflicts have become tools of choice” (2005: 2). More generally, territorialisation represents a key instrument used by a variety of actors – e.g. the state, development practitioners, NGO activists, or more ordinary people – for the expression of political claims related to resources and identities (e.g. Buch-Hansen 2003; Isager and Ivarson 2002; Peluso 1995, 2005; Vandergeest and Peluso 1995). Following this line of thinking, examining the local, territorialized practices of resistance to upland development policy in our two study villages can thus provide insights into the everyday environmental politics of the Laotian uplands. Ultimately, looking at the everyday practices of compromise and collusion through which state projects are mediated and transformed by local actors can also provide an entry point for analysing state-society relations and the actual agency of politically-marginal populations (see Chapter 3, Section 3.1.3 and Box 3.2).

#### *6.4.1. Responses to resettlement policy*

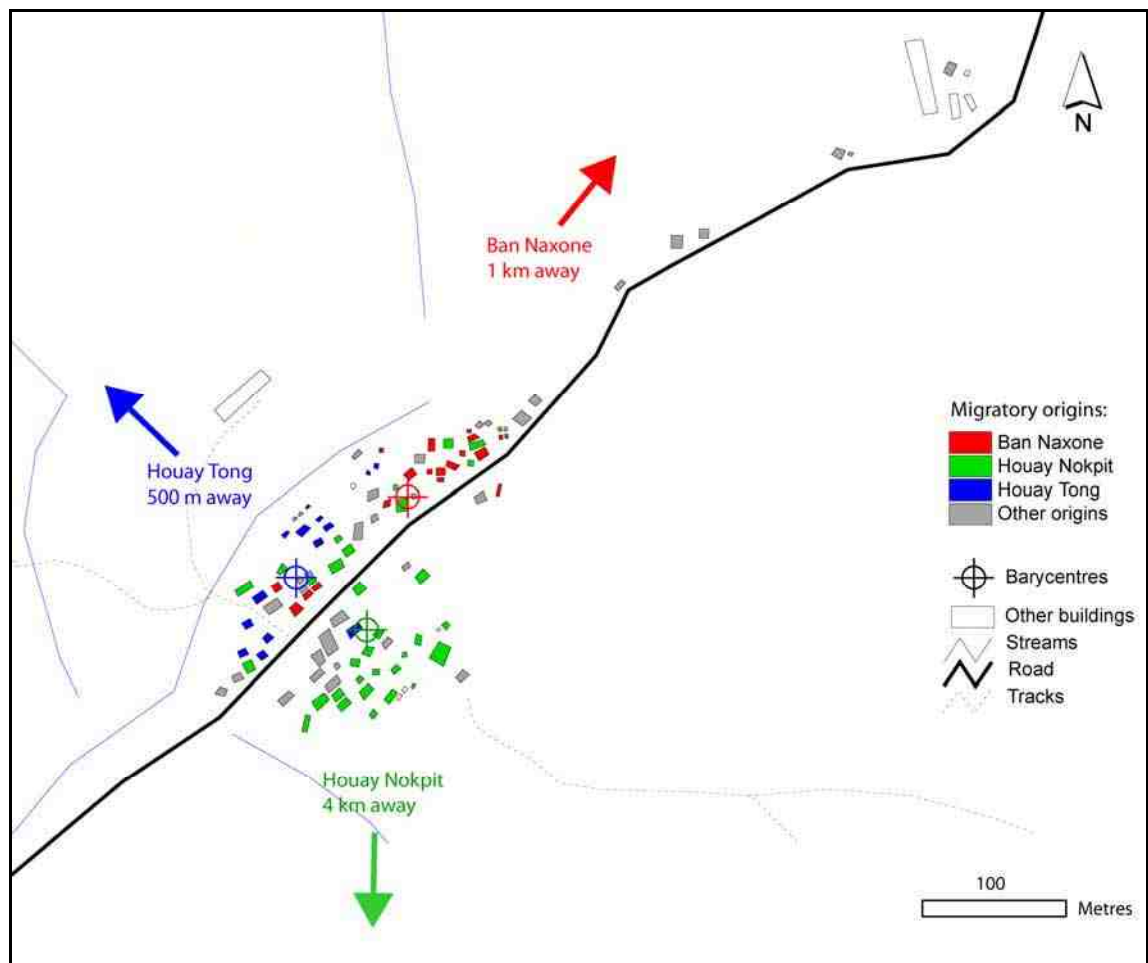
As described earlier (Chapter 4, Section 4.2.2), upland development policy in Laos involves a joint process of de-territorialisation and re-territorialisation of the upland populations. De-territorialisation occurs when communities move or are moved away from their lands as well as their ecological, social, cultural and technological frames of reference. De-territorialisation may happen physically (e.g. resettlement) and/or figuratively (e.g. land use zoning and land reallocation). Re-territorialisation occurs then when displaced populations settle in new environments and/or when they are confronted with new social, cultural, economic and regulatory contexts (Evrard 2002). In the context of Laos, this joint process is often described as being largely propelled and controlled by state policy of internal resettlement (Baird and Shoemaker 2007; Evrard 2002, 2004; Evrard and Goudineau 2004). Lying at the core of the resettlement policy is

the government's idea that, despite a very significant diversity of ethnic groups, cultures and traditions, Laos is primarily populated by Laotian citizens unified by their adhesion to shared national values and a common project of society (Goudineau 2000). Thus, viewed through the lens of the government, gathering populations from diverse socio-cultural and geographic origins is likely to be considered as a simple issue of logistics and resource management. However, empirical material from Ban Lak Sip suggests a rather different perspective. As described earlier (see Chapter 2, Section 2.1.2), with a total of forty-seven households relocated from neighbouring villages between 1976 and 1996, Ban Lak Sip is the study village that was the most affected by the national resettlement policy. Yet, despite the facts that a very large majority of displaced households are Khamu and that they have been moved from close locations, the homogeneous mix of communities inherent to the government's vision of a national unity has not exactly occurred. In fact, as illustrated by the map of Ban Lak Sip's housing area (Figure 6.4), displaced households appear to have gathered in clusters of the same migratory origins and aligned towards their former villages.

It is not clear whether this particular spatial distribution results more from a desire of the resettled households to re-create their former communities than from simple patterns of land availability in Ban Lak Sip. In any case, however, empirical material suggests that community affinities have played, and still play, an important role for resettled populations. Interviewed in November 2005, Mrs. Bounlong, a woman resettled in Ban Lak Sip in 1996, described a meeting with the Agriculture and Forestry authorities where the villagers of Houay Nokpit were given the choice between two possible host villages: Ban Densavanh where land was available for new settlers but where there was a poor road access, or Ban Lak Sip where land was limited but which benefited from an access to a major road. According to Mrs. Bounlong, a majority of the Houay Nokpit households, including her family, chose to move to Ban Lak Sip not only for the attractiveness of the road (e.g. potential for new economic activities, easy access to town), but also because four Houay Nokpit families had already moved there a year before. Nowadays, despite being split between two distant villages, the Houay Nokpit community still maintains some cohesion through economic alliances. For instance, since 2003, Mr. Bounlong and other Houay Nokpit residents resettled in Ban Lak Sip have been raising pigs and cultivating maize, cassava and watercress on their former village land (now officially classified as protected forest). Once the pigs are ready to be

sold, they are transported four kilometres to Ban Densavanh. Former Houay Nokpit residents resettled in Ban Densavanh then sell the animals in the market of the small municipality of Xieng Ngeun and, minus a commission, remit the money of the sale to Mr. Bounlong and his associates. This system allows Ban Lak Sip residents to sell livestock produced on illegal grounds without attracting the attention of the Luang Prabang province and district agriculture and forestry authorities, whose agents are believed to be more rigorous and more numerous than those of Xieng Ngeun district.

Figure 6.4: Spatial distribution of the households resettled in Ban Lak Sip, 2004.



By and large the picture presented by Ban Lak Sip differs significantly from what could be expected from the vantage point of the state. Despite a common ethnicity, common traditions and a long-standing status of neighbours, the populations gathered by resettlement policy have not (yet?) entirely merged into a single community. Far from the concept of ‘good Laotian citizens’ united behind the development project of the state, geographically distant members of the same original community are engaged in tangible alliances aimed at circumventing the rules imposed by the authorities.

Beyond subtle and undercover manoeuvres of resistance to state authority, such alliances also illustrate the ‘micro-physics of power’ (Jessop 2007) and the way they structure the politics of the Laotian uplands. As put forward by Foucault (1976, 1997, 2004) and further discussed by other scholars (e.g. Hindess 1996; Jessop 2007; Rose 1999; Rose and Miller 1992), power does not irradiate from particular centres such as the state or other ‘bounded’ social entities which would channel it towards particular nodes of governance. Rather, power emanates from a multitude of changing relations between individuals and circulates through such malleable networks. In this system, the state is a privileged, yet not unique, relational ensemble through which power relations are strategically codified and temporarily crystallized in an attempt to govern people, resources or ideas (see Chapter 3, Section 3.1.3). Following this line of thinking, Latour (1986) emphasizes the empowering role of networks (see also Allen 2004; Hillier 2000). He argues that power should not be considered as the explanation for success in the establishment of networks aimed at governance. Rather, it should be seen as a result of the composition of these networks. In other words, power stems from one’s ability to mobilise a set of actors, institutions and procedures and, through this process, compose a network of forces orientated towards the pursuit of particular social, political and/or economic goals. These reflections allow the replacement of the abovementioned ‘Houay Nokpit alliance’ at a broader conceptual level. Just as the Laotian authorities deploy networks of forces aimed at governing upland peoples and resources (e.g. governmental apparatus linking central authorities with province, district and local agents), upland populations are also composing and sustaining social networks which allow them to pursue their own, sometimes contested, objectives. As a result, these networks alter the expected imbalance of power between the Laotian state and marginal upland populations. Approached through such a conceptual lens, local resistance in the uplands of Laos is not simply a matter of going against or circumventing the rules of the authorities. It is also about devising ways to transcend state power.

#### *6.4.2. Responses to conservation policy*

Further information on the uplands’ everyday politics can be found when comparing encroachment of annual cultivation in the protected areas of the two study villages. As discussed earlier (see Chapter 5, Section 5.2.4), livelihood and land use differentiation



between the two villages can be partly explained by the differential levels of pressure that have been imposed upon the villagers at the time of the land reform (e.g. extent of land banned from annual cultivation, coercive measures surrounding the reform). Similarly, the proximity of the villagers to state authority is an important element explaining the differences in local practices of resistance to land regulation in the two study villages. The Water Supply authorities are long established in Ban Done Kang and responsible for monitoring the protected watershed, its drinkable water source and the waterworks supplying Luang Prabang. This proximity and the fact that a number of civil servants – working for the Water Supply agency or other governmental agencies – reside in the village has probably had an effect on the compliance of the farmers with state regulation. During the entire fieldwork period in Ban Done Kang, encroachment of annual cultivation in protected areas was not observed once. In fact, it was not reported as a frequent practice by interviewees who instead emphasized the importance of illegal (small-scale) logging and overexploitation of NTFP resources (e.g. firewood, bamboo shoots) in the village's protected areas.

In contrast, cultivation in protected areas appeared much more frequent in Ban Lak Sip. During the fieldwork period, several cases illustrating local resistance to the national land regulations were observed. In 2003, a number of households displaced from Houay Nokpit slashed and cultivated large areas of secondary forest near the southern limit of Ban Lak Sip. The same year, as introduced above, seven of these households also established pig husbandry micro-enterprises and large fields of maize and cassava on their former Houay Nokpit lands. All the areas concerned had been classified as protected forests since 1996. However, probably due to the remoteness of these areas (i.e. no road access, long walking distances, cleared areas invisible from the valley bottoms), none of these households was troubled by the authorities. Other emblematic cases were observed during the following years. In 2004, one of the deputy chiefs of Ban Lak Sip slashed a large area in a protected forest located on a crest, just in front of the District Agriculture and Forestry Office's windows in Luang Prabang. He was caught by the district authorities, had to pay a fine and let the forest re-grow. The fact that he was, at that time, the deputy chief responsible for land-related issues in the village, means that his act can even be considered as open rebellion. One year after, in 2005, a number of households started to cultivate long coriander (*Eryngium foetidum*) under the foliage of the Phu Pheung protected forest. The head of one of these

households had been employed for several years with responsibility for monitoring the protected area. When asked about the problems he could incur if the authorities were aware of his activities, he explained that he was not under threat of being fined because he did not cut any large trees to prepare his field and had the explicit permission from an officer of the Water Supply Office in Ban Done Kang. He further described that the officer concerned was a long-standing friend with whom he went to primary school. Similarly, some form of resistance to centrally planned policy was observed within state agencies themselves. For instance, during an interview conducted early 2003, the director of the Luang Prabang DAFO acknowledged that, in some cases, his organisation did not implement national land regulations because they were considered ‘unrealistic’. In the case of Ban Lak Sip, he mentioned a new regulation that would prohibit agriculture on slopes steeper than 30 percent and fallows older than five years. “If we had implemented such a regulation there”, he said, “the villagers would not have any land left for agriculture”.

Rather than being an object of agreement between a state and local populations united in a common development effort, land regulations are recurrently ignored, circumvented or even contested through everyday practices of non-compliance. Most of the time, these practices are as invisible and non-confrontational as possible. This may involve undertaking illegal activities in remote areas and/or concealing the illegality of these activities under the (alleged or actual) permission of local state agents. In any case, the political content of such resistance is often limited to the simple and implicit statement that the ban imposed by the authorities on certain land uses is incompatible with what local actors need in order to construct satisfactory livelihoods. In some cases, however, acts of resistance are more overt and provocative – as in the case of the abovementioned village deputy chief – suggesting that either their instigators are willing to engage in an open confrontation with the state authorities or they have underestimated the risk of repression incurred.

Once again, a ‘Foucauldian’ approach to political power and ‘problematics of government’ casts an interesting light on the above examples of local resistance to state territorialisation. The exercise of government, in the broad sense given by Foucault (1991) and his followers, is characterized by the existence of multiple and often competing rationalities. “Government is the historically constituted matrix within which

are articulated all those dreams, schemes, strategies and manoeuvres of authorities that seek to shape the beliefs and conduct of others in desired directions by acting upon their will, their circumstances or their environment” (Rose and Miller 1992: 175). As Dean (1999) further describes, attempts to govern the existence and conduct of others involve *political rationalities*, that is, the discursive elements through which particular power configurations are defined and justified, and *technologies of government*, that is, the various means by which some actors attempt to give substance to their governmental ambitions. In Laos, for instance, the ‘chain of degradation’ narrative and the official discourse on the upland ‘issue’ constitute important political rationalities put forward by the state in its attempt to govern the conduct of upland populations. Associated technologies of government include land zoning, land use regulation and resettlement policy (see Chapter 4).

As briefly introduced above (see Section 6.4.1), for abstractions such as spatial zoning, policies and regulations to be effectively transmitted to the local level, the state has to rely on networks connecting actors, institutions and procedures across various scales – what Foucault (1980) calls ‘*dispositif*’ and Li (2007) ‘*assemblage*’. The administrative hierarchy that links central governmental agencies with regional agencies (e.g. province and district administrations) and local actors (e.g. village authorities and simple citizens) is one of the many facets of this latter form of government technology. From there, the state’s attempts to govern ‘at a distance’ – i.e. to evaluate the conduct of distant actors in comparison to particular norms and reshape it in accordance with particular objectives – involve making abstractions such as statistics or planning schemes transit multilaterally along government networks. Yet, as Murdoch (2000) describes, when abstractions are transmitted down to the local, they become less and less in line with the complexity and particularities of place. In turn, discrepancies between state abstractions and local ‘realities’ may engender resistance along government networks, undermine state power and force the emergence of new political rationalities. The empirical cases presented above illustrate that state agents may be key actors in the disruption of government networks. Clearly, such disruption is not always purposeful. Supporting the engagement of allies in activities prohibited by the state or setting aside the implementation of particular regulatory measures does not necessarily reflect explicit political protests. Resistance, in these cases, has more to do with an implicit denial of government rationalities, the formation of ‘knowledge alliances’

(Robbins 2000) that operate across scales between state agents and local actors and, more conceptually, the loosening of state government networks as they meet the particularities of place.

### **6.5. Summary**

Five main conclusions can be drawn from the empirical material presented above. First, while the village-scale description of local socio-environmental change provided in Chapter 5 suggested that the populations of our two study villages have to deal with restrictive political, regulatory and environmental conditions, as well as limited economic options, a detailed approach to individual development trajectories call for a reflection on local agency (see also Chapter 3, Section 3.1.2) and the role of unforced individual actions in shaping the broader socio-environmental transition highlighted in Ban Lak Sip and Ban Done Kang (see Chapter 5, Figure 5.15). Clearly, many of the livelihood and land use changes that have been observed, either at the village scale or at the household level, can be linked ‘upwards’ to national policies and strategies. Bringing the arguments presented in Chapter 4 and 5 together, state environmental discourse and politics – through their impact on local access to land – appear to be major driving forces for forest regeneration, livelihood diversification and progressive de-agrarianisation. Does this mean, however, that the development scheme devised by the Laotian state is successful and in the process of rearranging upland lives and landscapes in accordance with the ‘national’ model? Not exactly. So far, despite official pressure, coercive land regulations and economic disincentives, a majority of villagers surveyed are still practising shifting cultivation. If many seem to be engaged with this activity ‘in the absence of an alternative’, on the contrary – and this suggests that, besides state rule, local agency matters – some have invested significant energy and resources in order to maintain a productive shifting cultivation system. More generally, the high diversity of local development trajectories observed in the two study villages appears as both the unexpected result of state intervention – which is itself uneven and has variable impacts on livelihoods depending on household and individual differentiation patterns (e.g. differing access to capital, land, labour, education) – and the outcome of individual aspirations shaped by market incentives and local socio-cultural change (see Figure 6.3).

These observations have parallels with the work of Li (1999a, 2002b) in the Indonesian uplands. Analysing the determinants for agrarian differentiation in various settings, she argues that livelihood change owes much more to local initiatives – influenced by market opportunities – than to state development schemes. Perhaps due to a more coercive regulatory context, higher levels of law enforcement by state agents and/or weaker connections to the global market, the two study villages present a slightly different picture and, importantly, stronger linkages between state intervention and local livelihood change. Nevertheless, local initiatives matter. For instance, as described earlier (see Chapter 5, Section 5.2.2), the expansion of teak plantation in Ban Lak Sip and Ban Done Kang, the concurrent commoditisation of land and its negative consequences for local landholders (i.e. many have been incited to sell off to urban residents) echo the observations of Li on the cocoa boom in upland Sulawesi. As she depicts, “Sulawesi’s upland farmers are not the hapless victims of market forces; if they have lost land it is not because they have been displaced by large-scale plantations or agribusiness schemes; nor have they been obliged to plant cocoa by the government. They have entered into cocoa production for their own, complex reasons – but not under conditions of their own choosing. [...] the displacement of customary landholders and the concentration of land ownership in fewer hands was the unplanned, perverse outcome of popular initiatives aimed to *improve* economic well-being” (Li 2002b: 416, original emphasis). Finally, even when the state and its interventions are powerful and domineering as in the case of our two study villages, there is still scope for human agency which, to some extent, allows households and individuals to pursue their own economic projects and experiment diverse livelihood strategies.

Second, a look at local forms of resistance to state policy also reveals a significant level of agency. As for Scott’s peasants (1985), such agency does not work through formal political institutions from which upland populations are largely excluded. Formal protest (e.g. legal challenge, petitions or marches) does not appear to be an option either. The risk and the potential strength of repression are perhaps deemed too important by the villagers. In any case, as Holmes (2007) argues looking at local forms of resistance to environmental conservation, “individuals affected by conservation need to balance protest with gaining a living, and the way that locals are affected individually by conservation regulations constrains their ability to take collective organised action” (2007: 186). Rather, local political claims and contestation take the more indirect path

of everyday resistance. In this regard, local forms of resistance do not only include individual and occasional acts of non-compliance to state rule, but also collective and organized actions aimed, in part, at minimizing the risk of state repression (see Section 6.4.1). As they are neither explicitly nor directly aimed at social transformation, these collective actions do not exactly fit Beard's definition of 'covert planning' (Beard 2002). Nevertheless, just as with 'covert planning', they suggest that, even in restrictive political and social environments, everyday resistance may take rather sophisticated and deliberate forms and, importantly, involve circumvention strategies planned and implemented at the community level. As 'covert planning' does, these collective forms of resistance may also contribute to modify power relations between the state and local populations, to the benefit of the latter.

Third, empirical material from the two study villages suggests that alliances with external actors can play an important role for increasing local agency in the economic field. As pointed out in Section 6.3, most of the households that have successfully reworked their livelihoods (i.e. moved away from annual cultivation and engaged in sustainable, often non-farm, activities) have been able to do so thanks to remittances or regular incomes from sources that are external to the village. Alliances with external actors can also provide substantial support to local practices of resistance. In particular, it can be argued that, if physical proximity with the state and its agents engenders more constraints on local activities and political agency, social proximity (e.g. friendship relations, common understanding of local issues) between state agents and local populations may help circumvent these constraints. As discussed above (Section 6.4.2), besides uneven state intervention and local state presence, the observed differences between Ban Lak Sip and Ban Done Kang – in terms of compliance to land regulation and, more generally, land use patterns – have also been shaped by different configurations of power between local communities and local state authorities. In that sense, along with state regulation and factors like resource endowment, demography, local history or geographical location, village-local state relations can play a critical role in moulding the constraints and opportunities for local socio-environmental change. In fact, they may constitute primary factors of differentiation and shape very different development trajectories in similar socio-economic and environmental settings (Mood 2005; Rigg 2007b).

Fourth, just as Section 6.2 highlighted the significant diversity of individual situations, concerns and aspirations that lies behind ‘the village’ or ‘the community’, examples of local resistance involving representatives of state agencies suggest that what is recurrently framed – not least throughout the present thesis – under the rubric of ‘the state’ should not be considered as a monolithic entity. If such categorisation is useful for the purpose of highlighting power configurations between different classes of actors, it has the disadvantage of masking the real, hybrid nature of the state and the realities of governance (see Chapter 3, Section 3.1.3). As ‘Foucauldian’ literature reminds us, the state possesses “neither the unity nor the functionality ascribed to it; it [is] a ‘mythical abstraction’ which [assumes] a particular place within the field of government” (Rose and Miller 1992: 174-175). Local development trajectories emerge thus from complex interplays between state agencies and agents, international, national and local actors, each with its own objectives, strategies and capabilities. Alliances of actors ‘across scales and institutions’ and the differentiated nature of the state imply that simple, dualistic models focused on interactions between the state and the ‘local’ cannot address fully these interplays (Hirsch 2001; Hirsch and Warren 1998; Robbins 2000; Wadley 2004). In fact, responding to this shortcoming, some authors emphasize ideas of ‘compromise’, ‘collusion’ or ‘translation’ which, in contrast to the familiar binaries ‘resistance’ and ‘compliance’, reflect better the interpenetration of the state and the society and, importantly, do not imply a direct opposition between a subordinate society and a superordinate state (e.g. Bebbington *et al.* 2004; Ferguson 1994; Herbert-Cheshire 2003; Li 1999b, 2005; Robbins 2000). Viewed through that lens, governance becomes more a ‘role-play’ involving multiple actors, alliances and interests than a simple opposition between rulers and their subjects. As Li argues, “relations of rule are cultural relations, formed and reformed in the context of specific discourses, practices, rituals, and struggles. [...] The actual accomplishment of rule owes as much to the understandings and practices worked out in the contingent and compromised space of cultural intimacy as it does to the imposition of development schemes and related forms of disciplinary power” (1999b: 295).

Fifth, this study suggests that, while its foundations and primary sites of investigation remain in modern Western societies, Michel Foucault’s theory on governmentality can also represent a valuable perspective to approach state power and other problematics of government in non-Western, non-liberal contexts such as Laos (e.g. Goldman 2001). As

Sigley (2006) further argues with the example of China, the theory itself could benefit from a stronger engagement with non-liberal government rationalities and a better integration of the authoritarian or coercive political measures that are deployed, for instance, in modern 'socialist states'. In fact, as pointed out by scholars like Dean (2002) and Hindess (2001), even the most 'advanced' liberal nation-states persistently deploy authoritarian measures, for the latter are often a primary means in liberal-democratic efforts to form autonomous subjects of government.

Overall, the empirical findings presented in this chapter raise important questions in relation to the SLA framework's conceptualisation of livelihood construction. In particular, the important role played by multi-local resistance networks and 'village-local state' alliances in disrupting state intervention, remodelling the political economic context and, ultimately, increasing local economic agency argues clearly for a more elaborate approach to power relations and politics. As recently suggested by Scoones, livelihood analysis must be "informed by theories of power and political economy and so an understanding of processes of marginalisation, dispossession, accumulation and differentiation" (2009: 187). The 'political ecology of livelihoods' approach employed in this thesis is along these lines.



## **Chapter 7. Ecology, livelihoods and politics**

The study has sought to elucidate some of the main patterns of, and interactions between, livelihood and environmental change that have characterized the uplands of Laos during the past three decades. The approach to this research problematic can be subdivided into three components. A first component relates to the analysis of local development trajectories in two study villages. This component included a symmetrical approach to the environmental determinants and outcomes of local livelihood change. A second component relates to the analysis of ‘external’ factors and drivers of change, including research into the causal links between local development trajectories, rural development policy and environmental politics at the national level. Completing the latter perspective, a third component relates to the analysis of ‘internal’ factors and drivers that have contributed to propel and/or shape local development trajectories. This includes an examination of the local socioeconomic differentiation patterns, the influence of local socio-cultural change and the everyday politics of resistance and accommodation to state intervention.

Dealing with the problematic of livelihood and environmental change in a comprehensive manner has required the development of a research framework capable of working across a number of conceptual dimensions and, in particular, those of society-nature, global-local and state-society. For that purpose, the political ecology approach has been expanded by the integration, or the reintegration, of two key analytical focuses. Renewing the core initial concern of political ecology, a first focus relates to the political-economic determinants of environmental issues. By reintegrating early political ecology’s agenda, the study intended to complement post-structural insights on the politico-discursive dimensions of environmental issues with an exploration of cause-and-effect linkages between environmental discourses, state policy and intervention, and decision-making by local actors. From there, expanding the field of application of political ecology, a second focus relates to livelihood construction and the way livelihood change influences, and is influenced by, political ecologic processes and issues. By proposing a ‘political ecology of livelihoods’ approach, the study intended to place environmental management and resource politics into the wider assemblage of economic, political and socio-cultural activities that makes up people’s everyday lives.

The first section of the chapter reviews the main empirical findings derived from this research framework and highlights their contribution to answering the research questions posed by the study. The second section discusses the scientific contribution of the study relative to wider and more conceptual considerations on society-nature, global-local and state-society interactions. Finally, the last section reflects on the main strengths and shortcomings of the ‘political ecology of livelihoods’ approach and suggests some ways forward.

## **7.1. Empirical findings**

### *7.1.1. Local development trajectories*

As described in the introduction to this thesis (see Chapter 1, Section 1.2), a first set of research questions posed by the study was related to the identification of recent trajectories of change in the interactions between upland populations and their environment and, importantly, the identification of the environmental determinants and outcomes of livelihood change in the uplands. In this regard, the two study villages present a picture of rapid socio-environmental transition. ‘Soil exhaustion’, ‘weed invasion’, ‘declining agricultural productivity’, ‘market integration’, ‘livelihood diversification’ and ‘de-agrarianisation’ appear as keywords for describing this transition. Over the past thirty years, livelihoods have undergone wide-ranging changes. Traditionally based on the production of rice for subsistence, agriculture has become increasingly commercial and diversified with the introduction of annual cash crops and the development of new production activities like livestock farming, vegetable gardening and tree plantation. Traditional, non-agricultural activities such as weaving and NTFP collection have also been restructured and/or intensified and have become largely market-oriented. Finally, with the emergence of new, sometimes extra-local, non-farm activities like factory work and petty business and their rapidly growing importance in terms of both labour allocation and contribution to the villagers’ incomes, the two villages appear to be engaged in a dual process of livelihood diversification and de-agrarianisation.

As regards environmental change, the totality of available evidence – i.e. biophysical measures, local perceptions and discourses, reconstruction of local environmental change – indicates a troubling land degradation trajectory. Underlying this trajectory is

an intensification of the shifting cultivation systems and an acceleration of agricultural rotations. While this intensification appears to have limited consequences for soil erosion processes and, in particular, upstream-downstream soil fertility transfer, it is nevertheless responsible for a progressive exhaustion of the soil as the reduced fallow biomass affects the maintenance/renewal of the physical, biological and chemical properties of the soil. The intensification also favours weed invasion as the length of the fallow period is an important element controlling weed germination. In turn, weed invasion gets compounded with soil exhaustion to affect the productivity and profitability of annual cropping. As a result of these processes, the workload required for shifting cultivation has increased significantly over the past fifteen years while the agricultural yields have stagnated or even declined.

To a significant extent, livelihood diversification and de-agrarianisation can be correlated to environmental change. In response to land degradation, the villagers have employed considerable energy and resources for reworking their livelihoods. Without fundamental change in the composition of their livelihoods, some farmers have started to cultivate larger areas and allocate additional labour to annual cultivation in an attempt to maintain agricultural production. Engaging more radical changes, other villagers have shifted to full-time non-farm occupations and untied their livelihoods from land-related constraints. The mainstream trajectory, however, has been one of a general increase in and reorganization of the household's time and labour in order to engage with a more diverse panel of livelihood activities. Overall, by diversifying their activities, engaging in non-farm occupations and on-farm alternatives to shifting cultivation, a majority of villagers have indirectly reduced the limiting effects of declining annual crop yields on their livelihoods.

Subsequent to some of these changes, a new environmental issue has emerged as land degradation has intensified in localized areas. In Ban Done Kang, the rate of firewood collection has exceeded the rate of reproduction of the resource base and hence contributed to generate an increased workload for the villagers involved in the activity. At the same time, the rapid expansion of tree plantations in the two study villages has contributed to reduce the land available for agricultural rotations, fostering soil exhaustion and weed invasion on the remaining shifting cultivation plots. In the end, local interactions between livelihood and environmental change appear direct and

dynamic. Land degradation has been one of the key elements motivating the decision of the villagers to diversify their livelihoods and engage in non-farm activities. In turn, livelihood change has had direct impacts on local environmental conditions and land degradation processes. However, an important question remains as regards the emergence of the land degradation issue in the first instance. The general shift from subsistence to market-oriented activities also raise questions as regards the influence of the wider political economy on local livelihood decisions and the forms of livelihood diversification observed.

### 7.1.2. *'External' factors and drivers*

Besides land degradation, market forces have also played a significant role in fostering local changes. Since the mid-eighties and the implementation of wide ranging political and economic reforms by the Laotian government, rural populations have started to engage with new production and consumption models. With access to a major road and located near an urban centre, the two study villages are particularly illustrative of this process. Indeed, the development of on-farm activities like livestock farming and teak plantation, the expansion of cash crops and the engagement of some villagers in full-time non-farm occupations are directly related to both increasing and changing local needs and expenses (e.g. for housing, transport, education and health) and the economic development of the neighbouring town of Luang Prabang (e.g. establishment of export companies, increasingly pressing and diversified market demand).

In that sense, Laos' economic growth has provided the villagers with opportunities for diversifying their incomes and, to some extent, adapting their livelihoods to land degradation. However, the transition has also had perverse effects on local resource extraction and land use. In Ban Done Kang, the demand of a growing and relatively wealthy urban population has encouraged the abovementioned overexploitation of the local resources in firewood. Similarly, in the two study villages, an emerging land market and a combination of government and economic incentives for timber production have encouraged many villagers to convert agricultural land into teak plantation and/or to sell their land. In turn, this process has contributed to reduce the area available for shifting cultivation and, ultimately, fostered the abovementioned land degradation trajectory.

However, plantation conversion and land sale are not sufficient in explaining the critical agricultural land shortages experienced by the two communities studied. A careful look at the issue indicates that Laos' upland development policy has largely contributed to engender the current human-land resource pressures. At different times and under different forms, the two study villages have been subjected to regulations aimed at protecting or regenerating forest cover and 'rationalizing' land use. In particular, land use planning and land allocation have represented major regulatory instruments for re-organizing local access to land resources, delineating forest conservation areas, reducing the allocation of fallow land *per capita* and, hence, limiting the extent of shifting cultivation, deemed unproductive and unsustainable by the central authorities. Furthermore, in line with the government's poverty eradication strategy, the two communities have also been receiving settlements for populations resettled from neighbouring upland villages, with significant impacts on local access to land. Ultimately, land reform, forest conservation and resettlement policy have engendered critical situations of agricultural land shortage which, combined with plantation conversion, land sale, natural population growth and unplanned immigration, have propelled and sustained the abovementioned land degradation trajectory. Consecutively, this (partly policy-induced) land degradation issue has drawn the villagers into a rapid diversification/de-agrarianisation process.

These findings contribute to answering the second set of research questions posed by this study (see Chapter 1, Section 1.2). They highlight that government's land and resettlement policy, market integration and associated economic incentives represent key 'external' driving forces underlying land degradation, livelihood diversification and de-agrarianisation in the two study villages. Yet, as pointed out in the introductory chapter, this observation of the troubling socio-environmental outcomes of government policy represents a major impetus for a broader reflection on the socio-political construction of the land degradation issue in Laos.

An analysis of governmental and international development agencies' discourses related to development and environment in Laos indicates the existence of a general consensus that the country's development is threatened by two co-constituted issues. On the one hand, rapid deforestation and increasing land use pressure generate a 'chain of degradation' that stretches from increased runoff and soil erosion to sediment

accumulation in the streams, siltation of wetlands and reservoirs, and floods and droughts in the lowlands. On the other hand, ecological fragility, rapid population growth and high levels of poverty in the uplands force deforestation and unsustainable farming practices. It is then assumed that this process leads to a 'downward spiral' of increased poverty and land degradation. Combined with the 'chain of degradation', the upland downward spiral is also believed to cause siltation, water shortages and floods in the lowlands and, that way, threaten major sources of revenue for the country (i.e. lowland agriculture and hydroelectricity).

Despite their apparent coherence, the 'chain of degradation' and 'upland downward spiral' narratives are not firmly supported by empirical evidence. For instance, the estimated rates and assumed causes of deforestation appear to vary quite significantly from one report to another. Official assessments reveal also a clear lack of empirical data regarding the links between deforestation, increased runoff and soil erosion. Furthermore, while there are long term data series available on downstream sediment discharge, floods and droughts, these data show no evidence whatsoever of the assumed impacts of upland deforestation and agricultural expansion on lowland hydrological systems. The mainstream environmental discourse is also challenged by information collected in the two study villages. First, the biophysical measures carried out over a five-year period in the MSEC experimental watershed do not reveal a critical soil erosion issue. Linear erosion and sediment yields vary importantly from one year to another and, if there is certainly a continuous transfer of soil from the watershed to downstream areas, the average sediment yields recorded at the outlet of the watershed are not as critical as the official discourse seems to suggest. Second, while the latter discourse emphasizes the role of soil erosion as the main driving force for declining soil fertility and agricultural yields, villagers' perceptions and scientific experimentation suggest that, rather than being an issue of soil erosion, the local land degradation issue is essentially related to the impacts of accelerated agricultural rotations on soil exhaustion and weed germination. Third, livelihood change in the two study villages does not exactly reflect the 'downward spiral' model. In contrast with the official perspective that represents upland populations as lacking the capabilities and/or opportunities to adapt to environmental degradation and, hence, as engaged in a desperate and unsustainable struggle for subsistence, many villagers have developed effective adaptive strategies that have allowed them to control and/or avoid agricultural

land degradation, limit their vulnerability to land-based risks, to some extent, improve their livelihoods.

Nevertheless and notwithstanding their questionable empirical bases, the ‘chain of degradation’ and ‘upland downward spiral’ narratives have strongly influenced rural development policy in Laos. On the one hand, by picturing rapid upland deforestation as a major threat to both upland and lowland natural resource and economies, the ‘chain of degradation’ narrative has directly influenced the creation of conservation policies and regulations which, in 2003, had led to the demarcation of one third of the country as ‘protection’ or ‘conservation’ forests. On the other hand, the idea that shifting cultivation and population growth engender a ‘downward spiral’ of land degradation and poverty in the uplands has provided incentives for the relocation/gathering of remote communities in more accessible areas, closer to state services and with better access to markets. The ‘downward spiral’ narrative has also favoured the design of separate development strategies for the lowlands and the uplands, with an emphasis on poverty reduction and environmental conservation in the uplands. Finally, the two narratives have influenced land use planning and land allocation policy. Reflecting the existence of a two-tiered rural development strategy, the practical implementation of land reform in upland villages has often consisted in land use planning without land allocation. More generally, land reform has largely favoured forest conservation over agricultural land use. In many upland villages (including the two villages surveyed in this study), the result has been an important reduction of the agricultural land available *per capita* and, ultimately, an intensification of the shifting cultivation systems. Looking at the broad picture, by encouraging high-density settlements under conditions where shifting cultivation becomes unsustainable, rural development policy has itself contributed to the poor reputation of shifting cultivation and thus, in a sense, has been self-legitimizing. Hence, upland-dwellers have had to adapt their livelihoods not only to actual land degradation issues but also to the official discourse on land degradation and its policy outcomes.

The fragile empirical bases of the ‘chain of degradation’ and ‘upland downward spiral’ narratives, their lack of questioning at the official level and the ambiguous outcomes of land reform and resettlement policy in the uplands suggest a number of counter-narratives where official discourse and ensuing policy interventions are partly shaped by

the subjectivities and political-economic projects of Laos' main policy-makers. The state, in particular, may be considered as having important interests in the maintenance of the two narratives and the application of current rural development policy. Land reform, resettlement and the two-tiered rural development strategy represent indeed powerful devices for the territorialisation of state power in the uplands. Through these measures, upland areas are demarcated, associated with objectives of environmental conservation, poverty reduction and economic development and, accordingly, subdivided into various rationalized zones. According to economic and ecological criteria defined at the central level, some of these zones are then allocated – on a temporary basis and for determined purposes – to upland households. At the same time, for the purpose of alleviating poverty, remote communities are encouraged to gather in resettlement areas designated by the state. By way of limiting land degradation, reducing poverty and developing upland economies, rural development policy thus allows the state to justify and strengthen its control over upland resources and populations.

Besides state preoccupations, mainstream discourse and policy in Laos can also be seen as influenced by the perspectives and interests of the national elite and policy-makers. First, the unbalanced power relations – between upland minorities and the ethnic Lao – are likely to influence the production of environmental knowledge. For instance, by picturing the uplands as both the epicentre of land degradation and the residence of a rapidly growing population of ethnic minorities engaged in traditional, yet unsustainable land uses, the official environmental discourse places ethnicity at the centre stage of the environmental debate. To some extent, however, this representation may be considered as being partly shaped by the subjectivities of the political elite, predominantly ethnic Lao and more familiar with the lowland context and livelihoods. Second, it may also be argued that the relative lack of questioning of the current official narratives on land degradation and poverty in Laos reflect the existence of converging interests between the state and international development agencies. On the one hand, for international development agencies, the persistence of the land degradation 'issue' may be a good way to justify a long-term presence in the country. On the other hand, with limited public finance, the presence of development projects funded by foreign donors can be a good way for the government to prove its commitment to the well-being of the people.



Finally, answering the second set of research questions posed by this study (see Chapter 1, Section 1.2), the local development trajectories that have been observed in the two study villages are not merely the result of local interactions between, and the co-evolution of livelihoods and ecosystems. To a significant extent, local socio-environmental change can also be linked ‘upwards’ to the wider political economy and the politics of the ‘environment’ at the national level. In practice, some might even argue that upland populations and livelihoods are caught in a vice between declining environmental productivity and the decisions and strategies of distant policy-makers. In the case of Ban Lak Sip and Ban Done Kang, however, this would be overstating the case. Indeed, a more ethnographic, actor-oriented approach to local livelihood change highlights that there is still scope for human agency which, to some extent, allows local actors to pursue their own economic projects and devise elaborate strategies for circumventing both land degradation issues and wide-ranging state interventions.

### *7.1.3. ‘Internal’ factors and drivers*

Approached at the household and individual levels, livelihood change in the two study villages involves an important diversity of trajectories. De-agrarianisation, for instance, takes different forms and has different meanings depending on a household’s endowment with financial capital, land and labour. In many cases, households benefiting from sufficient financial capital have been able to develop or gain access to full-time non-farm occupations. For these households, replacing annual cultivation by more profitable and less laborious non-farm activities is directly related to objectives of well-being and accumulation. A number of less well-off households have also replaced annual cultivation by temporary and low return non-farm jobs. For them, however, the change has been driven by limited labour and/or access to land – i.e. insufficiencies to conduct annual cultivation on a profitable basis. In turn, the less favoured of these households have often been driven to impose significant pressure on forest resources.

At the individual scale, de-agrarianisation is also significantly linked to age, gender and education. Men – and young men in particular – have been more able to find non-farm occupations. Often more educated than women and older men, young men benefit from better access to civil service, staff and skilled worker positions. Considered physically stronger, they also benefit from better access to non-farm jobs requiring heavy manual

labour – i.e. the majority of jobs currently available in the study area. The traditional conception of gender roles also plays a role. In contrast with women whose traditional responsibilities for childcare and domestic work tend to limit their potential mobility, men benefit from a preferential position in the ‘labour queue’ for extra-local non-farm employment. Finally, the growing engagement of the young in the non-farm sector is also significantly linked to local socio-cultural change and the higher status attributed to non-farm occupations relatively to farming. Indeed, if farming was probably the expected norm a few decades ago, improved access to education and information has led people to embrace and entertain new perspectives. In this process, local aspirations have changed. Farming has come to be considered as a ‘backward’ activity while non-farm employment has become synonymous with ‘modernity’ and, as such, the ambition of many younger villagers.

For a large majority, however, the disengagement from annual cultivation is only relative and the dynamic has been one of general economic diversification. Again, labour availability represents an important factor. Due to limited labour, many villagers have not been willing or able to assume the initial vulnerability trade-off for engaging in labour-intensive non-farm occupations. Indeed, engaging in non-farm activities means less or no labour available for annual cultivation. In the context of the two study villages, it also means a shift from subsistence agriculture to market economy where non-farming households and individuals must have the insurance of incomes significant and stable enough to buy basic consumption goods. Rather than a complete shift towards the non-farm economy (and associated risks), however, many villagers have thus ‘preferred’ on-farm diversification, integration of commercial crops and, when possible, integration of labour-extensive non-farm activities. Although economic diversification has resulted in a very significant labour intensification in the two study villages, it has probably contributed to reduce the vulnerability of the villagers to the potential failure of a single economic activity. In a few instances, juggling livelihood diversification with careful land management or non-compliance with land regulation has also allowed villagers to control the acceleration of the agricultural rotations and, to some extent, preserve the productivity of the shifting cultivation system.

In many cases, de-agrarianisation and diversification have involved networks and alliances between local and extra-local actors. For instance, among the villagers who

have succeeded in replacing annual cultivation by profitable and full-time non-farm activities, a majority has been able to do so thanks to support and remittances from emigrated relatives or regular incomes from state agencies and foreign development projects. Other villagers have been able to stabilize or even decelerate agricultural rotations by concluding economic arrangements with relatives (e.g. access to fallow land in exchange for a share of the production). Alongside a clear economic function, these networks and alliances can also be aimed at circumventing the rules imposed by the authorities. Thus, they can be analysed as practical outcomes of the local politics of resistance to state power. In Ban Lak Sip, for instance, a network has been deployed between two geographically distant groups of the same original community in order to avoid attracting the attention of the authorities on cultivation and livestock farming in protected areas. In some cases, local resistance also involved collusion and alliances with state agents.

To a significant extent, a more ethnographic, actor-oriented approach to livelihood change and everyday politics challenges the idea that the whole of the upland population is trapped between an increasingly problematic land degradation issue and wide-ranging state interventions. If land degradation and land shortage represent indeed significant livelihood issues in the two study villages, access to financial capital, labour availability, improved access to education and information, and alliances with external actors have provided some villagers with incentives and opportunities for either ‘de-linking’ their livelihoods from land-based constraints or gaining access to additional land. Alliances with external actors have also provided substantial support to local resource struggles in the face of state intervention. Hence, despite their exclusion from mainstream political debates and the important limitations and constraints imposed on their livelihoods, various examples encountered in the two study villages illustrate that, in some measure, upland-dwellers can devise ways for pursuing their own, sometimes contested economic and political objectives. Answering the third set of research questions posed by this study (see Chapter 1, Section 1.2), these observations highlight the important role played local social differentiation patterns, socio-cultural change and everyday politics in mediating the impacts of, and engendering a diversity of individual responses to land degradation, government policy and economic forces.

Overall, the empirical findings provide valuable insights into recent social and environmental trajectories of change in the uplands of Laos and the way these trajectories are propelled and shaped by complex series of interactions between ecological and social factors. Besides their empirical value, they also lead to more conceptual considerations as regards society-nature, global-local and state-society relations.

## **7.2. Conceptual considerations**

### *7.2.1. Society and nature*

The empirical material presented above provides a valuable basis for rethinking scientific and political approaches to environmental issues. It has also important implications for the conceptualization of society-nature interactions. As pointed out by Warren, “land degradation cannot be judged independently of its spatial, temporal, economic, environmental and cultural context” (2002: 449). Rather than ‘absolute truths’, land degradation assessments may be considered as projections of environmental change through two superimposed lenses: a technical one – i.e. the spatio-temporal scales and technologies of observation – and a social one – i.e. the socio-cultural values and concerns of the assessor(s). Through these two lenses, land degradation thus becomes a relative and dynamic notion. By confronting mainstream environmental discourse with localized scientific observations as well as perceptions and discourses of local land users, the study has illustrated that there may be important variations in the definition of and explanation for land degradation. Besides highlighting the significance of the abovementioned technical lens, this variability has provided a valuable entry point for analysing the way land degradation interrelates, both in discourse and in practice, to an actor’s political-economic concerns and strategies.

For the Laotian state and a number of international development agencies with a presence in Laos, the explanation for land degradation starts with poverty and unsustainable (traditional) land use practices in the uplands. This explanation thus calls for ‘development’ intervention in the uplands. In practice, it justifies a complete reconfiguration or ‘subjective rationalisation’ of the local modes of access to upland environments and increased external control over upland resources and populations. In contrast, for the upland villagers surveyed, land degradation is mainly the result of a

critical agricultural land shortage, which external ‘development’ intervention has helped to create and sustain. This explanation, therefore, calls for livelihood diversification towards alternatives to shifting cultivation and farming in general. It also justifies local resistance to ‘development’ interventions and, in particular, non-compliance with land policy and regulation. Overall, these different explanations and experiences of land degradation appear as both impetuses for and outcomes of political-economic strategies. Underlying the two different perspectives is an implicit conflict of interests between the Laotian state and the upland populations which – in line with Blaikie’s (1985) suggestion (see Chapter 1, Section 1.1) – means that Laos’ land degradation issue has clearly become a political-economic issue.

This simple observation raises important questions for environmental research and policy. For researchers, the main question is thus: How should we deal with these conflicting views and positions? For policy makers, the question is: Should the more powerful always have the last word or is there a ‘middle way’ for solving with this kind of conflict in a democratic and sustainable manner? With ‘narrative analysis’, Forsyth and Walker (2008) suggest a starting point to address these questions. As they advocate, “a more politicized account of how environmental knowledge is formed is necessary before assuming that it provides an accurate basis for explaining environmental problems or for indicating appropriate regulatory responses” (Forsyth and Walker 2008: 228). What is needed, therefore, is the recognition that environmental knowledge is neither socially nor politically neutral. Environmental knowledge is situated by individual and collective values. In turn, mainstream environmental knowledge – often established through misapplied generalization of localized or imported scientific explanations – tends to frame the arguments (and values) of those willing to participate in mainstream environmental debates.

The production of environmental knowledge is also part of power struggles and wider political-economic projects. Through narratives on nature and human actions on nature, these are not only particular natural ‘orders’ that are defined or advocated. Particular social arrangements are also judged or promoted. Environmental narratives – like the ‘upland downward spiral’ and ‘chain of degradation’ above – position social actors relative to both nature and each other. Hence, some actors are judged as ‘villains’ and blamed for environmental degradation, while others are judged as ‘victims’ or ‘wise

environmental managers'. On the basis of this acknowledgement of the politicization of environmental knowledge, building democratic and sustainable environmental policy would require a more inclusive, critical and scientifically-informed approach to the various claims, narratives and counter-narratives of the actors involved in, or concerned with the environmental debate(s). As Forsyth and Walker (2008) further argue, participatory policy reform and environmental management may provide ways forward.

Besides environmental research and policy, the material presented in this thesis also has important implications for the conceptualization of society-nature interactions (see Chapter 3, Section 3.1.1). In Laos, the prevailing vision of nature in the uplands – the way it 'functions', the resources it provides and the way they are used, endangered and should be managed – reflects partly the power relations that structure Laotian society. The socio-political and territorializing project of the state, the concerns of the lowland elite vis-à-vis ethnic minorities, the economic and political interests of the rulers and their international partners, all these subjectivities intersect with and influence the mainstream representation of the uplands as an area that needs rapid and extensive 'development' interventions. In turn, these interventions contribute to transform upland societies and natural environments. Nature is redefined and demarcated according to scientific criteria and state concerns. Upland-dwellers have to adapt their livelihoods to both this new environmental context and the new ecological constraints and issues that come with it. Partly through this adaptation process, the very structure of upland societies is transformed. Although the old patterns of poverty and inequality tend to be reproduced, the de-agrarianisation process that is engaged – partly in response to constraints imposed by both policy and ecological dynamics on upland agriculture – means that land, land-based resources and activities are gradually losing their importance and significance in the everyday life of the upland-dwellers. For instance, planted with timber and marketed, the role of the land in upland societies is reworked from a symbol of wealth and power to a simple commodity and object of speculation. De-agrarianisation also means that a significant fraction of the upland population, especially the young, is now looking towards new, non-rural livelihoods and lifestyles.

Overall, the multiple links explored in this study – i.e. between environmental discourses, resource politics, state development schemes, local environmental change, livelihood adaptation and socio-cultural change – provide thus a perspective on socio-

environmental interactions that is quite different from the ‘modern’ conceptual divide between society – as subject – and nature – as object (see Chapter 3, Section 3.1.1). As a matter of fact, the study illustrates that society and nature are partly co-constructed, both in discourse and in practice.

### 7.2.2. *Global and local*

Adding further complexity to the study of society-nature interactions, the empirical material presented above also suggests that local socio-environmental change is contingent on a combination of factors and processes operating at various scales. Indeed, while the material presented in Chapter 5 emphasized the significant role played by the wider political economy in propelling and shaping particular development trajectories at the local scale, Chapter 6 illustrated that, besides policy and market forces operating globally and nationally, a significant part of the explanation for the social and environmental changes observed in the two study villages (and, *a fortiori*, in other upland villages of Laos) is contained in the ‘local’ itself. Indirectly – e.g. through social differentiation patterns and their consequences for livelihood decisions (Bouahom *et al.* 2004; Ellis 1998, 2000) – and directly – e.g. through the constant evolution of local needs and aspirations (Kelly 2000; Rigg 2000) – a multitude of ‘local’ contingencies interact with broader scale political-economic driving forces and contribute to recast local socio-environmental interactions.

The abovementioned de-agrarianisation process, for instance, or the general shift towards a more diversified and commercial agriculture appear to owe as much to emerging market incentives and state regulation of upland agriculture as they do to local socio-cultural change and, importantly, changing local consumption patterns and the ambitions of local populations for new livelihoods and lifestyles. In turn, however, even if these development trajectories have been significantly prompted locally, their success and durability appear partly linked to the operation of wider associations between local and extra-local actors (e.g. economic arrangements with relatives living away from home, incomes from sources external to the village). Rather than being either prompted locally or propelled by wider political-economic forces, therefore, the processes of livelihood diversification and de-agrarianisation observed in the two study villages result from interactions between various factors and driving forces, across multiple

scales – e.g. between state policy, local land uses and land degradation processes; between the global economy, regional market opportunities and local aspirations.

The key role played by these interactions in shaping, enabling or hindering local development trajectories has important implications for development studies, policy-making and planning intervention. In particular, it highlights a need to ‘think relationally’ (Castree 2002) when attempting to explain, drive or support socio-environmental change. For instance, while Laos’ upland development policy is clearly aimed at eradicating shifting cultivation, conserving forest resources and reducing poverty, individual trajectories in the two study villages suggest that the accomplishment of these objectives is critically dependent on context-specific and individually-differentiated variables. Mediated by local social differentiation, socio-cultural change, everyday politics and ‘village-local state’ relations, state development scheme and broad scale policy interventions have resulted in a significant diversity of individual situations that are not necessarily – and, in fact, rarely – in line with the official expectations and predictions.

Hence, whether it be for explaining local socio-environmental change or devising more efficient policies, the ‘global’, the ‘national’ and the ‘local’ appear much less interesting than the relations/interactions between actors, factors and processes operating at these different scales (Latour 1991). For researchers, this observation suggests that ‘conventional’ top-down approaches to social and environmental change should be replaced – or at least complemented – by more actor-oriented and place-based perspectives, accounting for human agency, the integration of actors in multi-local social networks, and the outcomes of the latter networks in terms of livelihood constraints and possibilities (see Bebbington 2003; Dicken *et al.* 2001). For policy-makers and planners, the same observation suggests that dealing more comprehensively and efficiently with poverty and environmental issues requires not only paying more careful attention to the local socio-ecological systems and the way they are shaped and constrained by individually-differentiated variables but also accounting for the actual and possible associations/connections of local actors with other people and places.



### 7.2.3. *State and society*

Intersecting with the discussion above, the study also demonstrates that, if state resource politics and development schemes represent undoubtedly significant factors of change at the local scale, everyday politics play, in turn, an important role in creating disjunctures between the aims and the accomplishments of the state. Indeed, despite their exclusion from the formal political system, upland populations are able to ‘negotiate’ state policy and intervention by engaging in everyday techniques of resistance (Scott 1985). Be these through individual and occasional acts of non-compliance, or through more elaborate social and multi-local networks aimed at circumventing state regulation, some of the villagers surveyed have been able to maintain a significant level of agency. *De facto*, they challenge state power and political economic strategies and reshape the upland landscapes in ways that do not necessarily fit the mainstream socio-environmental project. In some instances, everyday forms of resistance involve the complicity or even the direct contribution of local state agents. The possibility of ‘knowledge alliances’ (Robbins 2000) between state agents and simple citizens puts into question ‘classical’ representations of the state as a coherent, autonomous and unified source of intention (see Chapter 3, Section 3.1.3). In the end, state agents are as much part of the state as they are part of society. As such, their individual experiences, perspectives and decisions are inevitably influenced by social and cultural interactions operating beyond the heart of the state. In turn, a main consequence of the ‘hybrid nature’ of the state is that the practical realities of state governance are often, if not always, made up of ‘compromise’, ‘collusion’ or ‘translation’ (e.g. Bebbington *et al.* 2004; Ferguson 1994; Herbert-Cheshire 2003; Li 1999b, 2005).

Simple dualistic models opposing a monolithic state to a subordinate society cannot address fully these interplays (Hirsch 2001; Hirsch and Warren 1998; Wadley 2004); as much as they can not account for the real nature of the state (Li 1999b, 2005; Mitchell 1991). Building on a more ‘Foucauldian’ conception of power and approach to the workings of government, the state may be better approached as a strategic network that links a number of social actors, institutions, claims and practices, all orientated towards the pursuit of a common project of government. Thus, rather than emanating from the centre, power emerges from the very linkages that make up this network (Foucault 1976, 1997, 2004). The exercise of government also means that power – as well as

information, planning schemes, policies, regulations, etc. – flows through the same network, across the domains to be governed (Murdoch 2000). In turn, as the project of government changes, the relational ensemble is reconfigured – i.e. integrating, excluding, or modifying linkages between particular actors, claims and practices (Jessop 1990, 2007). The relational ensemble is also constantly challenged and remoulded through everyday social interactions and power struggles between state and non-state actors (Li 1999b, 2005).

This conceptual lens casts an interesting light on the above depiction of Laos' environmental politics and local resistance in the uplands. Accordingly, the state's government network in Laos includes not only national, political and economic elites and governmental agencies operating at various scales but also foreign experts and institutions engaged in law and policy making as well as project management and funding. By justifying state claims related to the governance of the uplands and advocating practices of government that are in line with the perspectives and interests of various actors, environmental narratives like the 'chain of degradation' and 'upland downward spiral' also help to compose and sustain the state's government network (see also Forsyth and Walker 2008). In turn, as the actors composing this network promote new projects of government, new rationales, new practices and new actors have to be integrated and/or connected to the network. In that sense, large scale hydropower solutions and, more generally, the 'eco-development' and 'green neoliberal' strategies promoted by international development agencies (see Chapter 4, Section 4.3.3) have inevitably been accompanied by the integration of new environmental laws and regulations – partly inspired by the 'sustainable development' paradigm – and new actors – e.g. transnational hydropower consortiums, foreign experts and Laotian civil servants trained in Western countries (see Goldman 2001).

Power, information or planning schemes, however, do not flow uneventfully along this network. At some point, the flow may be disrupted by actors 'operating' within and/or outside the network. In the particular case of this study, the local scale seems to represent a preferential arena for this process. Here, the disruption materializes either through local state agents' implicit denial of the national socio-environmental project or through the everyday resistance and power struggles of politically marginal upland-dwellers. Finally, even when the state is powerful and domineering, its rationalities,

strategies and policies are seldom, if ever, effectively and seamlessly transmitted to the local levels (Rigg 2007b). At some point during the transmission process, mediation, compromise and collusion engender a diversity of local development trajectories. These unexpected outcomes create and fill out interstices in the projection of the state design and result in hybrid development patterns. In other words, state-society relations often shape uneven and unexpected development paths.

### **7.3. Strengths, shortcomings and ways forward**

Dealing with the intertwining of ecology, livelihoods and politics is certainly no trifling matter. Each of these respective topics represents the core research object of at least one entire scientific discipline. In attempting to develop a research framework capable of integrating the three topics together, the study has thus articulated conceptual and methodological ‘bits and pieces’ borrowed from disciplines as varied as geography, anthropology, sociology, political science and ecological science. This is very much a trans-disciplinary research project. In turn, as with many other trans-disciplinary projects, it may be argued that the approach sometimes lacks the consistency, depth and precision that a more specialized perspective could have provided on a single research object. While it is important to acknowledge these limits, when it comes to analyzing interplays between society and the environment, trans-disciplinary studies may provide more comprehensive and practical insights than studies based on a single discipline or approach. More generally, they may be considered as representing a privileged means by which to look at the complexities, contradictions and uncertainties of the real world – a world that is not made out exclusively of physics, geology, biology, culture or politics but out of complex series of interactions between these different elements.

As a contribution to this effort, this study has proposed and tested a ‘political ecology of livelihoods’ approach in the uplands of Laos. The integration of livelihood analysis into a political ecology framework has enabled the placing of land and environmental management within the wider assemblage of socioeconomic activities that people contend with in order to make a living. Importantly, the SLA has provided this study with a comprehensive analytical framework for identifying and comparing local changes in people’s material interactions with the environment (e.g. land use patterns, resource management) and highlighting the way these changes are constitutive of

broader social and economic trajectories – i.e. livelihood diversification and de-rurarianisation. By reintegrating early political ecology’s agenda (see Chapter 1, Section 1.1), the latter socioeconomic trajectories have in turn been placed in their wider political-economic context. This analytical process has allowed the important role played by rural development policy and market integration in shaping the incentives, constraints and opportunities underlying local land use change and livelihood re-composition to be highlighted. As importantly, it has provided interesting insights into the consequences of Laos’ environmental policy for wealth inequalities and the structure of upland societies.

The use of a locally-grounded, ‘hybrid research’ approach to environmental change and human adaptation has also significantly benefited the study. First, combining localized scientific measurements with an approach to the local perceptions and ‘theories’ on environmental change has provided the study with a comprehensive and contextualized assessment of the local environmental issue(s). Although it probably lacks the detail and accuracy that longer term and more extensive scientific measurements<sup>55</sup> could have provided, the approach developed has allowed for identifying effective cause-and-effect linkages between local environmental knowledge and perceptions, local livelihood and land use adaptations, and broader scale political-economic constraints and incentives – in which scientific measurements alone would have hardly succeeded. Second, confronting available scientific evidence on soil erosion and livelihood adaptation with mainstream and local environmental discourses has provided very valuable insights into the social construction of Laos’ land degradation issue. Importantly, it has assisted in the identification of the subjectivities, power relations and political-economic strategies underlying mainstream environmental discourse and rural development policy in Laos. Overall, ‘hybrid research’ has thus contributed to feed livelihood analysis with an approach to socio-environmental interactions that is much more critical and elaborate than the simplistic model usually proposed in SLA-related literature (see Chapter 3, Section 3.2.2).

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<sup>55</sup> Including, for instance, long term monitoring of on-farm biomass production, weed populations, forest cover and biodiversity.

Further down the line, framing livelihood analysis into the more flexible and integrative framework of political ecology has allowed for ‘injecting’ both agency and politics into the livelihood debate. First, looking at social differentiation not only in terms of access to certain resources but also in terms of individual aspirations, actions and strategies has allowed going beyond the functionalist perspective proposed by many livelihood studies (see Chapter 3, Section 3.2.2) and, that way, provided the study with a more nuanced perspective on the driving forces for local change. Second, integrating a ‘Foucauldian’ conception of power and approach to the workings of government has allowed for examining the ways everyday politics operate beyond and across simple oppositions (e.g. the state versus ethnic minorities) and conventional social groups (e.g. the household, the community). In turn, it has highlighted the potential role played by informal social networks and ‘village-local state’ alliances in compromising state projects and, ultimately, shaping local livelihood opportunities and constraints.

A number of shortcomings remain, however, that would call for further improvements to the approach. First, as regards the study’s attempt to ‘inject’ politics into livelihood analysis, it must be acknowledged that the approach to everyday politics and local power struggles has remained largely limited to an examination of the local responses to ‘external’ intervention. Yet, ‘internal’ power struggles (i.e. between and within upland communities) may also be reflected in conflicting local discourses and practices and, in turn, have implications for local livelihood and environmental change. A more inclusive approach would thus require looking at these ‘internal’ power/knowledge relations and their consequences for environmental management. This process may also provide additional substance for dealing with the second main shortcoming of the study. As noted above (see Chapter 3, Section 3.2.1), some scholars suggest that political ecology should engage more actively with theory on the politics of scale. If the research presented above has accounted for political interplays between local land managers, local state agents, central authorities and international agencies, the role of these interplays in rearranging or producing new scales of social and environmental governance has not been explicitly discussed, let alone theorized. Yet, as many political ecology studies, this study might find interesting avenues in considering scale not only as an object of methodological debate but also as an object of inquiry (Brown and Purcell 2005).

Third and finally, if the research has certainly benefited from being grounded in two localities (i.e. allowing for a detailed and comparative approach to the social and ecological complexities of ‘place’), contextualizing the case studies and providing a wider picture of socio-environmental change in the uplands of Laos has required resorting to secondary sources and, importantly, scientific studies conducted with approaches and methods that are different from this study. These differences have certainly brought about some uncertainty in the generalizations that are proposed throughout the thesis. There may be valuable ways to reduce this uncertainty, not least by applying a single perspective throughout the uplands of Laos. In any case, however, it should be acknowledged that, if generalizations and broad scale theories are possible and often necessary (Bebbington 2003; Rigg 2005a), the geographies of development are usually made of unexpected local variations, unclassifiable groups and individuals, and ambiguous trajectories.

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## Appendix

Figure A1: The questionnaire on livelihood activities.

<b>Livelihood Activities Survey</b>																															
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Figure A1: The questionnaire on livelihood activities. (cont.)

	<b>Inputs</b>	<b>Tools</b>
2003		
1995		
1990		
1980		

Comments:

	<b>Product transformation</b>	<b>Quantity (per year)</b>
2003		
1995		
1990		
1980		

Comments:

	<b>Cash use (%)</b>	<b>Self use (%)</b>
2003		
1995		
1990		
1980		

Comments:

	<b>Marketing channels</b>	<b>Selling price</b>	<b>Taxes</b>
2003			
1995			
1990			
1980			

Comments:

**Remarks**

Table A1: An example of thematic grid used during semi-structured interviews.

Household structure	Household heads	Men	Age, main occupation, education, residence...
		Women	...
	Children	...	...
	Relatives	...	...
Livelihood changes	Main livelihood activities		Current
			15 years ago
	Occupational changes		New activities, reasons...
			Abandoned activities, reasons...
Incomes	Annual incomes, main sources		Current
			15 years ago
	External contributions		Relatives, expatriates...
Non-farm activities	Members with non-farm occupations		Reasons and ways for engaging in non-farm
	Other members considerations on non-farm occupations (vs. farm work)		Men, women, elders, young...
	Consequences of non-farm for farming activities		
Investments and trade-offs	(Dis-)Investment in education		Household members concerned Since when and why? Consequences for labour availability
	(Dis-)Investment in farming inputs and other production means		Inputs concerned, Since when and why? Consequences for labour availability
	Other (dis-)investments (e.g. housing, bank savings...)		Nature of the (dis-)investment Since when and why?

Table A2: The incidence of poverty in Laos, 1993-2003.

Provinces and regions	Percentage of poor households		
	1993	1998	2003
Vientiane municipality	33.6	13.5	16.7
Oudomxay	45.8	66.1	45.1
Luang Namtha	40.5	51.1	22.8
Houaphanh	71.3	71.3	51.5
Phongsaly	72	57.9	50.8
Luang Prabang	58.5	40.8	39.5
Sayaboury	22.4	17.7	25
Bokeo	42.4	38.9	21.1
Northern region	51.6	47.3	37.9
Bolikhamxay	16.6	27.9	28.7
Khammuane	47.1	44.5	33.7
Vientiane province	30.7	27.8	19
Savannakhet	53.1	41.9	43.1
Xieng Khouang	63	42.9	41.6
Saysomboun	n.a.	62.8	30.6
Central region	45	39.4	35.4
Saravane	43.6	39.2	54.3
Champasack	41.4	37.4	18.4
Sekong	67	49.7	41.8
Attapeu	60.5	48	44
Southern region	45.7	39.8	32.6
Laos	46	39.1	33.5

Source: Andersson et al. 2006, based on the LECS dataset.

*Table A3: The part of foreign aid (grants and loans) in the Laotian economy.*

	1986	1994	1995	1996	1997	1998	1999	2000	2001
Percent of GDP	6.25 %	11.1 %	12.2 %	16.5 %	19 %	21.9 %	17.8 %	22.5 %	-
Contribution to public expenditure	-	-	41 %	41 %	41 %	51 %	57 %	50 %	36 %
US\$ per capita	12.6	47.2	65.8	69.2	66.9	54.9	57.3	53.4	45.4

Source: DGCD 2002; UNCDF 2002; UNDP 2002; World Bank 2006b.

*Table A4: Distribution of the foreign aid by sector.*

Sector	USD (Millions)	% of total aid
Transportation	91.2	24.0
Social welfare	54.6	14.4
Administration	35.5	9.3
Rural development	35.4	9.3
Education and training	33.2	8.7
Agriculture and forestry	30.3	7.8
Economic management	28.1	7.4
Health	25.4	6.8
Energy	22.0	5.8
Natural resource management	12.8	3.4
Prevention of environmental hazards	4.9	1.3
Communications	3.2	0.8
Humanitarian aid	2.6	0.7
Commerce	0.1	0.03
<b>Total</b>	<b>379.50</b>	<b>100</b>

Source: DGCD 2002.

Table A5: Major regulations related to natural resource management.

Year	Regulations and strategic plans	Highlights	Main supports
1989	Council of Ministers' Decree No. 117 on the management and use of forests and forested land.	Allocation of forested land to villages and households. Setting up of a land use tax.	UNDP FAO World Bank
1990	Property law	Natural resources (land, water, forests, and fauna) defined as state property.	World Bank IMF
1990	Tropical Forestry Action Plan	Recommends the stabilization of shifting cultivation, reforestation and the prioritisation of forest conservation in the national policy.	FAO World Bank ADB SIDA
1991	Prime Minister's Decree No. 67 on logging ban	Logging operations put under firm control of the state.	World Bank
1991	Constitution of the Lao PDR	"All organizations, all citizens must protect the environment and natural resources" (Article 17).	
1993	Prime Minister's Decree No. 164 on the establishment of national forest reserves	Establishment of a national protected area system of 18 National Biodiversity Conservation Areas (NBCAs).	IUCN
1993	Prime Minister's Decree No. 169 on the management and use of forests and forest land	Forest conservation defined as a requirement for national economic development. Classification of forested land into land use categories.	World Bank
1993	National Environmental Action Plan	Recommends the integration of environmental planning into the national planning system	World Bank
1996	Forestry law	Forest protection and rehabilitation are essential contributions to the national socioeconomic development (Article 1).	
1997	Land law	Land management must contribute "to the acceleration of the national socio-economic development as well as to the protection of the environment" (Article 1).	
1999	Environmental Protection law	Environmental management must contribute "to protect public, natural resources and biodiversity and to ensure the sustainable socioeconomic development of the nation" (Article 1).	UNDP SIDA
2003	National Growth and Poverty Eradication Strategy	"Economic growth must be based on sound management of natural resources and enhanced social and cultural development" (p.11).	UNDP

*Table A6: Main livelihood issues perceived by the population (in percent of households interviewed) in Ban Lak Sip and Ban Done Kang, 2005.*

Main issues in Ban Lak Sip	Total	Main issues in Ban Done Kang	Total
Drought	52%	Food shortage	57%
Decreasing rainfall amounts	52%	Land shortage	48%
Low agricultural yields	42%	Poverty	39%
Labour shortage	35%	Labour shortage	35%
Land shortage	19%	Lack of access to health services	22%
Shortened fallow periods	16%	High workload for farming	22%
Poverty	16%	High population density	17%
High population density	13%	Lack of income sources	17%
Food shortage	13%	Lack of temple in the village	9%
Lack of income sources	13%	Low incomes	9%
Hot weather	10%	Theft	4%
Theft	6%	Low agricultural yields	4%
Soil erosion	6%	High dependency ratio	4%
Difficult environmental conditions	6%	Remoteness	4%
High dependency ratio	6%		
Lack of access to credit	3%		
Remoteness	3%		
Prices fluctuation (production)	3%		
Increased weed density	3%		